

**From:** [Richard Montecalvo](#)  
**To:** (b) (6) [Lt Col USAF 153 AW \(US\)](#)  
**Cc:** (b) (6) [NG NGB \(US\)](#); (b) (6) [CIV USARMY RDECOM AMRDEC \(US\)](#); (b) (6) [CIV USARMY RDECOM AMRDEC \(US\)](#); (b) (6); (b) (6); (b) (6) [Lt Col USAF NGB A5 \(US\)](#)  
**Subject:** [Non-DoD Source] 153 AW support during I-MAFFS Channel Islands visit  
**Date:** Thursday, January 14, 2016 10:13:38 PM

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Lt Col (b) (6),

Please extend our gratitude to the 153 AW team for the outstanding support during our site visit this week. We were able to accomplish everything we had planned and everyone was extremely helpful and professional. We appreciate your support in providing your aircraft and knowledgeable team to support our requirements. Your assistance, support and feedback is an essential part of the successful outcome of the I-MAFFS design and fielding in the future. As a retired CMSgt, it was refreshing for me to be around such a dedicated group of professionals. On behalf of the Prototype Integration Facility and Redstone Defense Systems, thanks for all you do.

v/r

Rich Montecalvo  
Project Manager  
Office: 256-319-4325  
Cell: 256-652-2975  
[richard.montecalvo@yms-hsv.com](mailto:richard.montecalvo@yms-hsv.com)  
Yulista Aviation, Inc.

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“22 CFR Part 125.4 (b) (9) applicable.”

**From:** [Richard Montecalvo](#)  
**To:** (b)(6) [@fs.fed.us](#); [robert onsgard](#)  
**Cc:** (b)(6) [@fs.fed.us](#); (b)(6) [CIV NG NGB \(US\)](#); (b)(6) [CIV USARMY RDECOM AMRDEC \(US\)](#); (b)(6) [CIV USARMY RDECOM AMRDEC \(US\)](#); [Gregg Dellert](#); [Kristin Lauer](#); (b)(6) [Lt Col USAF NGB A5 \(US\)](#)  
**Subject:** [Non-DoD Source] I-MAFFS Channel Islands Visit  
**Date:** Thursday, January 14, 2016 10:03:18 PM

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(b)(6)/Bob,

Thank you for the outstanding support during our site visit this week. We were able to accomplish everything we had planned and everyone was extremely helpful and professional. We appreciate the hard work accommodating our schedule and requirements, even when the MAFFS II unit experienced problems that could have impacted our progress. Your assistance, support and feedback is an essential part of the successful outcome of the I-MAFFS design and fielding in the future. Also please extend our gratitude to Paul for the great support during our visit. On behalf of the Prototype Integration Facility and Redstone Defense Systems, thanks for all you do.

v/r

Rich Montecalvo  
Project Manager  
Office: 256-319-4325  
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[richard.montecalvo@yms-hsv.com](mailto:richard.montecalvo@yms-hsv.com)  
Yulista Aviation, Inc.

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“22 CFR Part 125.4 (b) (9) applicable.”

**From:** [Richard Montecalvo](#)  
**To:** (b) (6); [Maj USAF 146 AW \(US\)](#)  
**Cc:** (b) (6); [CIV NG NGB \(US\); \(b\) \(6\)](#); [CIV USARMY RDECOM AMRDEC \(US\); \(b\) \(6\)](#)  
[CIV USARMY RDECOM AMRDEC \(US\); \(b\) \(6\)](#); [Lt Col USAF NGB A5 \(US\); Kristin Lauer; Gregg Dellert](#)  
**Subject:** [Non-DoD Source] I-MAFFS Channel Islands Visit  
**Date:** Thursday, January 14, 2016 9:55:54 PM

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Maj (b) (6),

Please extend our gratitude to the 146 AW team for the outstanding support during our site visit this week. We were able to accomplish everything we had planned and everyone was extremely helpful and professional. The 146 AW team worked hard to accommodate our schedule and requirements, even when the MAFFS II unit experienced problems that could have impacted our progress. Your assistance, support and feedback is an essential part of the successful outcome of the I-MAFFS design and fielding in the future. As a retired CMSgt, it was refreshing for me to be around such a dedicated group of professionals. On behalf of the Prototype Integration Facility and Redstone Defense Systems, thanks for all you do.

v/r

Rich Montecalvo  
Project Manager  
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“22 CFR Part 125.4 (b) (9) applicable.”

**From:** [Kyri Tsircou](#)  
**To:** [\(b\) \(6\) @ang.af.mil](#)  
**Cc:** [sbenz@blue-aero.com](#); [mike@pcg-usa.net](#); [bbeck@unitedaero.com](#)  
**Subject:** 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II  
**Date:** Wednesday, June 03, 2015 5:09:46 PM  
**Attachments:** [image001.png](#)  
[2015-06-03 - Reply Letter to Col \(b\) \(6\) .USAF.pdf](#)

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Col. (b) (6),

Please find the attached response to your letter of April 24, 2015.

Best regards,

Kyri

<<http://www.tsircoulaw.com/>>

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June 3, 2015

UAC-00597

*Via Email:* (b) (6)@ang.af.mil

(b) (6), Col., USAF  
Chief, Programs Division (NGB/A5P)  
Air National Guard Readiness Center  
Andrews AFB, MD 20762

Re: Technical and Intellectual Property Rights to MAFFS II

Col. (b) (6):

This is response to your letter of April 24, 2015. To begin, I would like to start from the position that United Aero Corp. ("UAC") seeks to be an active and collaborative partner with the USFS and NGB. UAC recognizes the critical importance of providing firefighting assets to the U.S. Government. We understand the Government is moving forward based on their legal claims. However, in interest of asserting our rightful legal claims to certain pieces of intellectual property, there must be some clarification as to contractual interpretation and rights therein.

UAC agrees with the Government's foundational position that "plain reading" of the contract is necessary. When interpreting the language of a contract, "the words of those provisions must be given their plain and ordinary meaning by the court in defining the rights and obligations of the parties." [George Hyman Constr. Co. v. United States, 832 F.2d 574, 579 (Fed. Cir. 1987) (quoting Elden v. United States, 223 Ct. Cl. 239, 252 (1980))] A contract provision is not ambiguous when a plain reading of the provision results in only one reasonable interpretation. [Barron Bancshares, Inc. v. United States, 366 F.3d 1360, 1375-76 (Fed. Cir. 2004)] However, applying this approach to the contractual provisions at issue [Modifications 1, 19, 24; The Agreement for Release and Delivery Between United Aero and USFS ("The Agreement")] yields a different result than what the Government contends.

**Modification 24**

The Government reads this modification, reflected in paragraph 12.5 of the Statement of Work, in a contextual vacuum. This clause was included as a subpart of the overall Paragraph 12, Turn Key Deployment Program ("TKD"). This Paragraph contains the clear and unambiguous clause "This service is provided for 48 months following delivery of all eight contracted AFFS systems." Stated again in the Paragraph, "Aero Union will provide this complete turnkey service for four years beginning when the final system is deployed." There could only be one

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reasonable interpretation of these clauses, the TKD had a clear term of 48 months after the delivery of all eight contracted systems. As established in Contract 54-024B-1-2159, this term began on January 1, 2009 and concluded on December 30, 2013.

The TDK was broken down into two elements, “full system support” and “technical support.” The 12.5 “Drawing and Data package” was simply a descriptive subset of the second “technical support” element of the TKD. If the Government’s interpretation were accurate, that would mean both: 1) the clear and unambiguous clause laying out the 48-month term was meaningless; and 2) the “full system support” element is still in just as much effect as the “technical support” element. This assertion is not only unreasonable, but also incorrect as it ignores basic tenets of contract interpretation. While the Government does not directly claim the first element (“full system support”) to be active, it is the logical ends of their assertion the second element (“technical support”, 12.5) is active, and serves to illustrate the inaccuracy of said assertion.

As being included as a subpart to the larger defined Turn Key Development Program, it is beyond doubt that this clear and unambiguous term applies to the 12.5 “Drawing and Data Package.” Both the “full system support” and “technical support” elements of the TKD expired on December 30, 2013, and so did all of the definitional subparts therein.

**“The Agreement for Release and Delivery Between United Aero and USFS”**  
 **(“The Agreement”)**

It is well established that when interpreting the language of a contract, “an interpretation that gives a reasonable meaning to all parts of the contract will be preferred to one that leaves portions of the contract meaningless.” [United States v. Johnson Controls, Inc., 713 F.2d 1541, 1555 (Fed. Cir. 1983); Hol-Gar Mfg. Corp. v. United States, 169 Ct. Cl. 384, 395 (1965)]. The position the Government asserts is directly contradictory to this rule. The Government contends, “It was agreeing to nothing more than the status of the respective technical data rights that were established in the MAFFS contract.” To further support, this contention the Government claims that UAC should have drafted limiting language into the agreement, and, if the USFS had understood the terms, it would not have agreed. With full respect to the Government, the contract must be interpreted as it written, irrespective of the opinions or the hindsight wishes of the reader. The direct language of the Agreement states:

“USFS and UAC each acknowledge and agree that, as set forth in Contract No. 54-204B-1-2159, issued April 10, 2000, the technical data produced or specifically used or related to the [AFFS] development pursuant to such contract

shall remain the property of UAC (as the purchaser of assets of Aero from its secured creditor, including the System) and USFS shall have unlimited rights to view and use the data required for the continued operation and maintenance of the AFFS product.” (Emphasis added)

While the government chose to focus on the underlined portion, their position seemingly ignores the foregoing highlighted section, comprising the virtually entirety of the clause. This raises two glaring issues.

First, if the Government was agreeing to nothing more than the status of the rights established in the MAFFS contract, that interpretation renders the virtual entirety of the clause meaningless. An interpretation that gives a reasonable meaning to all parts would simply see the underline portion as a parenthetical element, further defined by the foregoing highlighted element. The Government’s interpretation so far denudes the text of the clause as to make the portion impermissibly meaningless.

Additionally, it is worth noting that the “status of the respective technical data rights established in the MAFFS contract” were principally governed by Modification 1, where by Aero Union retained ownership of all technical data (only subject to the caveat of Modification 19, whereby the Government was to be transferred technical data upon Aero Union’s default). When looking for a reasonable interpretation of this section, it is hard to see how the Government’s contention they are entitled to technical data based on disregarding unambiguous language and relying on a caveat provision of a previous agreement, is more reasonable than UAC’s plain reading of the text. Not only is UAC’s interpretation a more reasonable interpretation of the plain text, it also does not impermissibly render the portion of the contract meaningless.

Second, the Government claims if UAC wished to limit rights of the Government, it was incumbent such language was drafted into the Agreement. Referencing the highlighted text above, it is a strain on credulity to see how UAC did not include said language. Rather than only referring back to the Contract (as the Government seemingly has), UAC took the time to clearly and unambiguously define the scope of the rights they were granting the Government. Fully represented and free from obfuscation, the Government assented to these clear terms. Asserting one would not have agreed to such terms if they were understood differently is of no consequence; the test is ambiguity of language, something that is not present here.

In sum, the Government’s position as to The Agreement violates multiple well-established tenets of contract interpretation, and seems to claim rights-limiting language that plainly exists in the contract is simply not there.



**Modification 1, 19**

UAC agrees with the Government insofar as Modification 19 sought to alter Modification 1, however the exact extent to which must be clarified. Modification 19 reads:

“Aero Union agrees to the shared ownership of all manufacturing data rights to the [AFFS] and to transfer to the government all related manufacturing data sufficient to build and maintain the [AFFS] in the event Aero Union defaults on its obligations under this contract.”

Whether by accident or misreading, the Government seems to read this singular section as being two separate clauses, namely, that “Aero Union agreed to the shared ownership of all manufacturing data rights” (/Break/) “further...Aero Union agreed to transfer to the government all related manufacturing data...in the event Aero Union defaulted on its obligations under the contract.” Unlike what the Government contends, these phrases are not separated. They are in fact in the same sentence, free from any punctuation. A plain reading of the unambiguous text says that Aero Union agreed to “shared ownership” and to the “transfer” in the event they defaulted on their obligations. Modification 19 is a caveat to the primary position outlined in Modification 1, and is only activated, in its entirety, upon the default of Aero Union.

While it is clear that Aero Union did in fact default on their obligations under the contract on March of 2012, the clear and unambiguous language the Government assented to in the Agreement directly contradicts any notion the Government retained any rights from said default and subsequent activation of Modification 19. Depending on what the Government knew, or intended, regarding the signing of the Agreement, this raises many issues such as waiver, modification, and most prevalently estoppel. The Government’s scant reliance on the default argument may be probative of their similar analysis of the situation; this is an issue that, at best, would require a significant amount of unwanted research and litigation for both parties.

In the interest of not preventing additional and critically needed firefighting assets from being provided to the U.S. Government, UAC is not at this point seeking to stand in the way of getting such prototype systems to the NGB and USFS. To this end, we would like to engage in meaningful dialogue, while at the same time maintaining that all rights, claims, and defenses in this matter are expressly reserved herein. Specifically, that all technical data remain protected to the fullest extent, and is not used for any non-government initiatives, programs to which the US Government is not a party, or for commercial endeavors. [“Government Purpose” DFARS 252.227-7013(a)(12)]

As stated before, UAC seeks nothing more than to be a cooperative and productive partner, while at the same time clarifying the rightful position of both parties. To that end, the protection of our intellectual property and rights therein are of paramount importance. While we are sure the NGB and USFS will do everything in their power to protect the data in the manner requested above, we reserve the right to exercise our legal options to their fullest extent should they fail to do so.

Thank you for your time, consideration, and continued dialogue in this matter. UAC looks forward to moving ahead in contributing to the critical mission of supplying the highest quality firefighting equipment to the NGB and USFS.

This letter is sent without prejudice as to the rights and remedies available to our client.

Sincerely,



Kyriacos Tsircou

**From:** (b) (6) LTC USARMY NG NGB (US)  
**To:** (b) (6) Col USAF NGB A5 (US)  
**Subject:** Re: 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II (UNCLASSIFIED)  
**Date:** Saturday, July 25, 2015 10:49:29 AM

---

Sir -- I (b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Thanks,

LTC (b) (6)

----- Original Message -----

**From:** (b) (6) LTC USARMY NG NGB (US)  
**Sent:** Tuesday, July 21, 2015 05:06 PM  
**To:** (b) (6) W Col USAF NGB A5 (US)  
**Subject:** RE: 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II (UNCLASSIFIED)

(b) (5)

[REDACTED]

Thanks,

LTC (b) (6)

-----Original Message-----

**From:** (b) (6) Col USAF NGB A5 (US)  
**Sent:** Friday, July 17, 2015 3:41 PM  
**To:** (b) (6) LTC USARMY NG NGB (US) (b) (6) mil@mail.mil>  
**Subject:** RE: 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II (UNCLASSIFIED)

Just wanted to ping you again on this. I will be out of the office for the

next 2 weeks.

(b) (6)

(b) (6) Col, USAF  
Chief, Programs Division (NGB/A5P)  
ANG Plans and Requirements Directorate  
National Guard Bureau  
240-612-9367 / DSN 612-9367  
Cell (b) (6)

-----Original Message-----

From: (b) (6) LTC USARMY NG NGB (US)  
Sent: Tuesday, July 07, 2015 9:28 AM  
To: (b) (6) Col USAF NGB A5 (US)  
Subject: RE: 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

(b) (5)

Thank you.

LTC (b) (6)

-----Original Message-----

From: (b) (6) Col USAF NGB A5 (US)  
Sent: Wednesday, July 01, 2015 4:22 PM  
To: (b) (6) LTC USARMY NG NGB (US)  
Subject: RE: 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II

Hope you are well. I just wanted to check on progress on response to UAC's attorney.

Thanks

(b) (6)

(b) (6) Col, USAF  
Chief, Programs Division (NGB/A5P)  
ANG Plans and Requirements Directorate  
National Guard Bureau  
240-612-9367 / DSN 612-9367  
Cell (b) (6)

-----Original Message-----

From: (b) (6) LTC USARMY NG NGB (US)  
Sent: Monday, June 08, 2015 8:25 AM  
To: (b) (6) Col USAF NGB A5 (US)  
Subject: FW: 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II

(b) (5)

V/r,

LTC (b) (6)

-----Original Message-----

From: (b) (6) CIV USAF AFLOA (US)  
Sent: Monday, June 08, 2015 8:15 AM  
To: (b) (6) LTC USARMY NG NGB (US); (b) (6) - OGC; (b) (6)  
CIV USAF AFLOA (US)  
Subject: RE: 06-03-2015 - Reply re Technical and Intellectual Property  
Rights to MAFFS II

Col (b) (6)

The last paragraph of Page 4 appears to be an indication that UAC wishes to grant GPR. NGB needs to consider this possibility very seriously and reach agreement with UAC in a formal fashion so as to preclude future disputes.

(b) (6)

AFLOA/JAQC  
1500 West Perimeter Road, Suite 1780  
Joint Base Andrews, MD 20762  
Phone: 240-612-6641 (DSN 612)  
Fax: 240-612-4347 (DSN 612)

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-----Original Message-----

From: (b) (6) LTC USARMY NG NGB (US)  
Sent: Monday, June 08, 2015 7:48 AM  
To: (b) (6) OGC; Chiang, (b) (6) CIV USAF AFLOA (US); (b) (6)  
CIV USAF AFLOA (US)  
Subject: FW: 06-03-2015 - Reply re Technical and Intellectual Property  
Rights to MAFFS II

(b) (5)

Thanks,

(b) (6)

-----Original Message-----

From: (b) (6) Col USAF NGB A5 (US)  
Sent: Thursday, June 04, 2015 8:40 AM



To: (b) (6) LTC USARMY NG NGB (US)  
Subject: FW: 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II

LTC (b) (6),

Attached is a response from United Aero Corp's attorney to my letter (the one you drafted). When able, please provide your response on how I should respond.

Thanks

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)

-----Original Message-----

From: Kyri Tsircou [<mailto:kyri@tsircoulaw.com>]  
Sent: Wednesday, June 03, 2015 5:08 PM  
To: (b) (6) @ang.af mil  
Cc: sbenz@blue-aero.com; mike@pcg-usa.net; bbeck@unitedaero.com  
Subject: 06-03-2015 - Reply re Technical and Intellectual Property Rights to MAFFS II

Col. (b) (6)

Please find the attached response to your letter of April 24, 2015.

Best regards,

Kyri

test - 4 <<http://www.tsircoulaw.com/>>

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CLASSIFICATION: UNCLASSIFIED



REPLY TO  
ATTENTION OF

## NATIONAL GUARD BUREAU

3500 FETCHET AVENUE  
ANDREWS AFB MD 20762-5157

April 24, 2015

NGB/A5P

Tsircou Law  
ATTN: Mr. Kyriacos Tsircou, Esq.  
515 S. Flowers Street, 36<sup>th</sup> Floor  
Los Angeles, CA 90071

Dear Mr. Tsircou:

I am in receipt of your March 5, 2015 letter regarding technical and intellectual property rights to the Modular Airborne Firefighting Systems (MAFFS) stemming from Contract Number 54-024B-1-2159 (hereinafter "the MAFFS contract") which was awarded by the US Forest Service (USFS) on November 2, 2000.<sup>1</sup> I have coordinated this response with legal counsel from the USDA, the Air Force and the National Guard Bureau.

After reviewing your letter and the relevant documents, the Government disagrees with United Aero's position that the Government's rights to the technical data from the MAFFS contract are limited in the manner described in your letter. Rather, the Government asserts that it has "shared" (government purpose) rights in the MAFFS technical data. As such, the Government has unlimited in-house rights and the Government is allowed to release or disclose the technical data outside the Government and authorize third parties to use, modify, release, perform, display or disclose the technical data *for government purposes*. See Defense FAR Supplement Clause 252.227-7013(a)(11) and 7013(a)(12) (Nov 1995).

The MAFFS Contract, as awarded, included the following language regarding data rights:

Government rights to data are specified in the Defense Federal Acquisition Regulation Supplement (DFARS), paragraphs 227-7102 through 227-7104 .... Offerors shall propose Unlimited Rights for all source data and TOs prepared specifically for the contract. If some TOs or source data are copyrighted or contain proprietary data or procedures, offerors may propose Limited Rights or Government Purpose License Rights (GPLR) only. Proposed commercial manuals should be provided with at least GPLR or Limited Rights. Copyrights shall be according to DFARS paragraphs 227-7103, 7105 or 7106.

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<sup>1</sup> Although block 5 of the SF 33 lists the date as April 10, 2000, block 28 shows the actual award date as November 2, 2000.

See Page 55 of the MAFFS Contract.

There were 67 modifications to the MAFFS contract. Of those 67 modifications, the following were relevant to the Government's technical data rights: Modifications 1, 19, 24 and 67. They stated, in relevant part, as follows:

Modification 1 -- January 19, 2001:

Rights to Technical Data: Technical Data first produced or specifically used or related to the AFFS product shall remain the property of Aero Union Corporation. The Government, however, shall have unlimited rights to any data required for the continued operation and maintenance of the AFFS product.

Modification 19 -- February 12, 2004:

For additional consideration, Contract Modification No. 1, dated 11/27/00 under Rights to Technical Data, is modified as follows: Aero Union agrees to the shared ownership of all manufacturing data rights to the Airborne Fire Fighting System and to transfer to the government all related manufacturing data sufficient to build and maintain the Airborne Fire Fighting System in the event Aero Union defaults on its obligations under this contract.

Modification 24, Page Number 21, Paragraph 12.5 -- July 5, 2006:

Drawing and Data Package. Aero Union will provide drawings and a data package adequate to allow the USFS to build an AFFS unit or hire another vendor to build an AFFS unit.

Modification 67 -- May 14, 2012:

This contract is hereby terminated for default, in whole, as a result of a failure to adhere to contract requirements (as outlined in the Notice of Termination for Default, which was issued on March 7, 2012).

It is the government position that a plain reading of the relevant contract language demonstrates that the Government has "shared" ownership rights in the technical data produced through the MAFFS contract. Modification 19 expressly altered the language set out in Modification 1 in a manner that was unequivocal -- Aero Union agreed to the "shared ownership" of "all" manufacturing data rights. Further, as reflected in Modification 19, Aero Union agreed to transfer to the government all related manufacturing data sufficient to build and maintain the Airborne Fire Fighting System in the event Aero Union defaulted on its obligations under this contract. Aero Union was

terminated for default under the MAFFS contract on May 14, 2012. Neither Aero Union nor any successor-in-interest appealed that termination for default. The statutory time periods for appealing that termination for default have expired and the termination for default is final. See *Guardian Angels Med. Serv. Dogs v. United States*, 118 Fed. Cl. 87 (Fed. Cl. 2014).

Irrespective of the default possibility, Modification 24 requires Aero Union to deliver drawings and a data package adequate to permit the Government to build an AFFS unit or hire another vendor to build an AFFS unit. This modification further supports the Government's view that it has government purpose rights to the delivered technical data.

Your letter relies substantially on the May 3, 2014 agreement ("The Agreement for Release and Delivery between United Aero and USFS") which resulted in the release of MAFFS technical data to the Government. As your letter notes, that agreement included the following language:

USFS and UAC each acknowledges and agrees that, as set forth in Contract No. 54-024B-1-2159, issued April 10, 2000, the technical data produced or specifically used or related to the [AFFS] developed pursuant to such contract shall remain the property of UAC (as the purchaser of assets of Aero from its secured creditor, including the System) and USFS shall have unlimited rights to view and use the data required for the continued operation and maintenance of the AFFS product." (Emphasis added).

A review of the above language indicates that the Government was agreeing to nothing more than the status of the respective technical data rights that were established in the MAFFS contract.

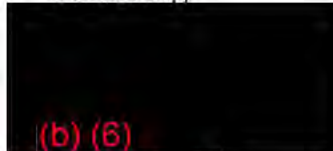
It is our understanding that United Aero was the principle drafter of the above-referenced "agreement." Accordingly, to the extent that United Aero sought to limit the Government's rights in the technical data in the manner advocated by your letter, it was incumbent upon United Aero to draft such language into the agreement. If United Aero had done so, it is our understanding that the USFS would not have agreed to such terms. Regardless, the agreement's language stating that the Government has "unlimited rights" to view and use the data required for the continued operation and maintenance of the AFFS product – although true – is neither a limitation on the Government's rights, nor an expression of the *extent* of the Government's rights in the technical data at issue.

As stated, the Government disagrees with United Aero's assertions as set forth in your March 5, 2015 letter. As reflected in the MAFFS contract, the Government has "shared" (government purpose) rights in the technical data from the MAFFS contract.

- 4 -

The subsequent release agreement did not alter the status of the parties' respective rights in the technical data. Accordingly, the Government is allowed to use the technical data for government purposes – including the right to use the technical data for the development and manufacture of future MAFFS without the consent of United Aero.

Sincerely,

A large black rectangular redaction box covering the signature area.

(b) (6)

Colonel, USAF  
Chief, Programs Division (NGB/A5P)

**From:** [H&A](#)  
**To:** (b) (6) [.Civ USAF ANG NGB/A3M](#); (b) (6) [.Civ USAF ANG NGB/A5D](#)  
**Subject:** 26 March  
**Date:** Monday, March 16, 2015 10:23:08 AM

---

Would the two of you plus (b) (6) be available to meet my MAFFS Corp guy on 26 March ?

Thanks

Sent from my iPhone

### 30 Oct MAFFS Duty Status SSG Notes

Opening Comments – (b) (6) thanked SSG members for attending and thanked working group members for producing a thorough, comprehensive report. The report is not done yet but the tremendous work will be helpful in providing an answer to the Secretary, based on the letter sent to him in June. Brig Gen Gersten thanked the working group in advance for the work that still needs to be done.

#### Slide 5- SSG participants provided updates on the status of coordination

- OSD(Comptroller) – Coordination is complete. Concurred with report pending OGC review of the 22-day leave option and completion of a cost/benefit analysis of the technician to AGR conversion recommendation.
- MG Ketchum stated he hoped to provide NGB tomorrow (31 Oct).
- P&R – Still working through the 22-day leave option.
- Brig Gen Williams added that it is important to note that the AF coord indicated a strong desire to preserve maximum flexibility. The AF reaffirmed this position and added, maximum flexibility using RC volunteers.

#### Slide 6

- MG Reiner (WY) is concerned about the recommendation that technicians use all available leave, including annual leave before entering LWOP. (b) (6) asked if we should seek clarification as to whether technicians can use annual leave. (b) (6) explained that OSD/RA inserted this language in the report to emphasize that civilian employees may (have the right), but are not required to use other leave options before entering into an LWOP status to perform military duties.
- MG Ketchum (NGB) stated that NGB-JA thinks there may be an issue with using 22-day for MAFFS.
- Mr. (b) (6) stated that this is an important issue; we've used the 22-day option in the past and we need to make sure it's legal. He's confident we can get an answer in the short term. More than just MAFFS, it is important to get this right for the force.
- Brig Gen Williams stated that aircrew selection is important for the MAFFS mission. Wing/CC options are limited if he can't select optimal crew mix. Brig Gen Gersten replied that individuals are qualified or they're not. Brig Gen Williams disagreed, stating not all qualifications are the same – an individual may be qualified but not experienced or current. Restricting duty



status flexibility limits commanders' ability to exercise good operational risk management (ORM).

#### Slide 7

- MG Ketchum requested clarification on whether or not DoD would pursue submitting legislative proposals to exempt MAFFS support from counting against the 22 day rule.
- (b) (6) is going to have his technician SMEs look at this recommendation. Need to assess unintended consequences. A ULB would be the appropriate way to move forward with legislative change.

#### Slide 8

- Brig Gen Williams mentioned that there are problematic system issues with DEERS with no known fixes.
- MG Reiner mentioned that the orders processing has systematic issues.

#### Slide 9

- MG David Baldwin recommended that OSD, in coordination with the CNGB and Chiefs of the Air Force and Army Reserve, should review and produce guidance on use of technicians instead of SAF because this will affect more than just ANG MAFFS missions.

#### Slide 10

- Brig Gen MacGregor asked for clarification on the intent and purpose of the VOCO comment – VOCO is a way to expedite a process, why do we need to formalize VOCO, if the process is already formalized. Formalization of the VOCO process does not provide the legal authority for a T10 commander to order a T32 Technician to a mission.
- Brig Gen McGregor stated that the MAFFS-7 crew may have deployed on a VOCO, leading the misconception by some that the crew was not in a T10 duty status at the time of the mishap.

#### Slide 11

- Brig Gen Williams stated that the conversion of technicians to AGRs will require a programming action. This would be a very difficult road to travel and likely wouldn't be supported by the Air Force. However, if the ANG were offered additional AGR billets, they wouldn't be turned down. Internal realignment of existing AGR billets is technically feasible but not practical because it would require other states/mission areas to lose billets. Additionally, the proposed conversion would take time to phase in because individuals who have been in the technician program for a long period of time may not be in a position to convert to AGR without significant negative impacts to retirement benefits.



### Slide 13

- Brig Gen McGregor mentioned that DSC should be discussed in the DSC WG
- MG Ketchum believes that the DSC issue has not been given enough consideration
- AFNORTH went on record stating that the existing C2 structure has worked for years. The current command arrangement has a single Commander, the JFACC. This is the best solution for command.
- Unknown source: the problem statement says that the WG will RESOLVE, however all we have done is IDENTIFY and yet HD&ASA is looking to move forward with a recommendation
- MG Gorske asked what are we doing with the impediments? Many of them could take months to years requiring legislative & policy changes.

### Slide 14/Wrap-up

- (b) (6) the SSG and WG will continue to work the 22-day rule leave option with OGC, NGB, OSD and P&R.
- Brig Gen McGregor – What is the intent of the SecDef action memo? Is it going to inform the SecDef of the recommendations for mitigating T10 issues or is the purpose to drive an action? (b) (6) responded that he owed an answer to the SecDef per the Jun 2013 memo. As is always the case, the action memo will be fully coordinated and include the views of others.
- MG Baldwin asked why MAFFS is treated different than other missions in the homeland? During the Rim Fire, CA operated HH-60s and the predator in T32 status in support of NIFC. (b) (6) explained that under T32, the DoD lacks clear lines of authority, clear lines of C2, and financial authorities. MG Baldwin fundamentally disagreed that the DoD can't have clear lines of authority/clear lines of C2 in T32 status.
- MG Reiner – One impediment we haven't talked about is the lack of the ability to force individuals into a T10 status.
- Brig Gen Williams – A good news story is that what we're doing this year is working. There have been no delays in response and no C2 issues identified this fire season.
- MG Reiner – We take great pride in performing the mission and providing a great product. Our interest is in maintaining maximum flexibility in order to be most efficient and effective in providing this product.

- Brig Gen Reed – Violently disagrees that individuals are either qualified or non-qualified. We don't send inexperienced crews into combat, we shouldn't do it with MAFFS either.
- BG Whitlock – We appreciate the work of the working group but this is only step one. We need to get comments back on the draft report and then determine the next steps.
- AFNORTH mentioned that there are missions currently being done where once aircraft is in the air, personnel convert to T10 and wanted to know if this could be the solution for MAFFS
- AFR has been advised by ARF/JA not to request reimbursement for technician salary, could be considered dual compensation. NG currently requests reimbursement for technicians.
- Brig Gen McGregor - The WG was chartered to make recommendations. Implementation is beyond their scope and it should be disbanded. (b) (6)  
(b) (6) – No, WG has more work to do...



# AATC Concept Review: Improved Modular Airborne Fire Fighting System (iMAFFS)

Lt Col (b) (6)

NGB/A5P

28 Jun 2017



# Information You Will Need



- Define the Problem
- Outline Possible Solutions
- Scope the Project
- Desired End State





# Define the Problem



- Congress allocated funding to for two additional Modular Airborne Fire Fighting Systems (MAFFS)
- Guard Bureau established an agreement with the Army Prototype Integration Facility (PIF) to manage MAFFS procurement
  - Responsible for drawing updates, manufacturing, software updates, improving the overall capability of the MAFFS and ground operational testing
- Legacy MAFFS are no longer procurable because the vendor went out-of-business
  - The government has asserted data rights over the MAFFS design, but part obsolescence prevents fabrication of an identical design
- Because an identical build was not possible the project was named Improved MAFFS (iMAFFS)
  - Based on the previous design but with replacement components for obsolescence
  - Remain a single roll-on/roll-off system (Group B components)
  - No modifications to the C-130H/J are planned (ref: AF Form 1067 #AMC 14-100)
- QT&E determination for delta between MAFFS and iMAFFS



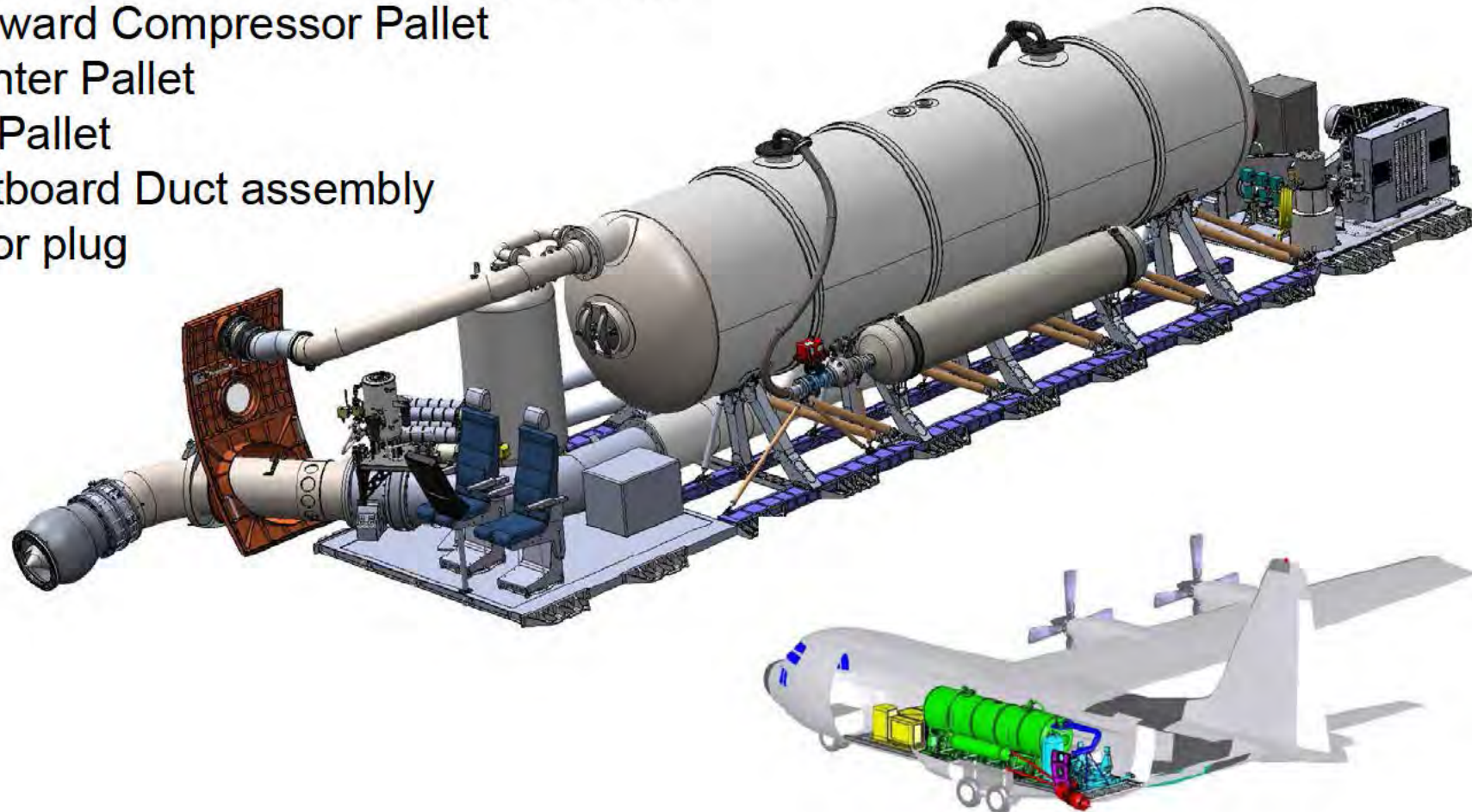


# Solution: iMAFFS



iMAFFS primary mission components:

- Forward Compressor Pallet
- Center Pallet
- Aft Pallet
- Outboard Duct assembly
- Door plug





# Scope: Key Stakeholders



- Prototype Integration Facility - Managing Program Office
  - Mr. (b) (6) – PM Team Lead - (b) (6)@us.army.mil
  - Ms. (b) (6) – PM - (b) (6)@mail.mil
- AFLCMC/WLN – Aircraft SPO and LDTO
  - Mr. (b) (6) – TEMP / LDTO PM - (b) (6).1@us.af.mil
  - Mr. (b) (6) – Chief of C-130 Avionics - (b) (6).1@us.af.mil
- AATC – OT&E Lead
  - Maj (b) (6) – Director, Mobility Air Forces Test - (b) (6).1@us.af.mil
- US Forest Service – iMAFFS End Owner/Customer
  - Mr. (b) (6) – (b) (6)@fs.fed.us
  - Mr. (b) (6) – (b) (6)@fs.fed.us
- NGB – Funding / Overall coordination
  - Mr. (b) (6) – NGB/A3 MAFFS PM - (b) (6).2.civ@mail.mil
  - Lt Col (b) (6) – NGB/A5 MAF Requirements Br - (b) (6).6.mil@mail.mil
- AFRC
  - Lt Col (b) (6) – (b) (6)@us.af.mil
- Redstone Defensive Systems – Yulista Aviation – Prime Contractor
  - Ms. Kristin Lauer – RDS Project Manager – kristin.lauer@yms-hsv.com



# Scope: OT&E



- Limited compatibility & functionality demonstration of iMAFFS on the C-130H/J
- OT&E will follow on-aircraft QT&E
  - On-aircraft QT&E and flight testing will follow satisfactory completion of EMI/EMC ground testing by contractor (RDS), PIF, and AFLCMC
  - Will leverage legacy MAFFS T&E, including initial combined development test/operational test (DT/OT)
  - Address applicable aspects of operational suitability and effectiveness as a functional replacement
- Compatibility testing to evaluate if the newly designed soft start and load shedding method adversely effects the host aircraft in any way
  - EMI/EMC and Operation, Night Vision Imaging System (NVIS) and ICS compatibility, AGGPS interface, Group B loading/unloading, and emergency egress
- Functionality testing to evaluate system operation
  - Aerial spray loading, control, indication, application & recording during ground ops
  - No combined or follow-on operational test and evaluation is planned



# End State



- iMAFFS fielding recommendation for C-130H/J



# Leadership Direction



- [Topics to which AATC Leadership will provide direction at the conclusion of the Project Manager's Concept Review...]
- Type of Test (FDE, OUE, OA)
- EPO Required? If no, then AATC Project #
- Reps (LG, Ops)
- Shop Support (IT, Data Link, Sensor, Division)



# Questions/Discussions



# AATC Concept Review: Improved Modular Airborne Fire Fighting System (iMAFFS)

Lt Col (b) (6)

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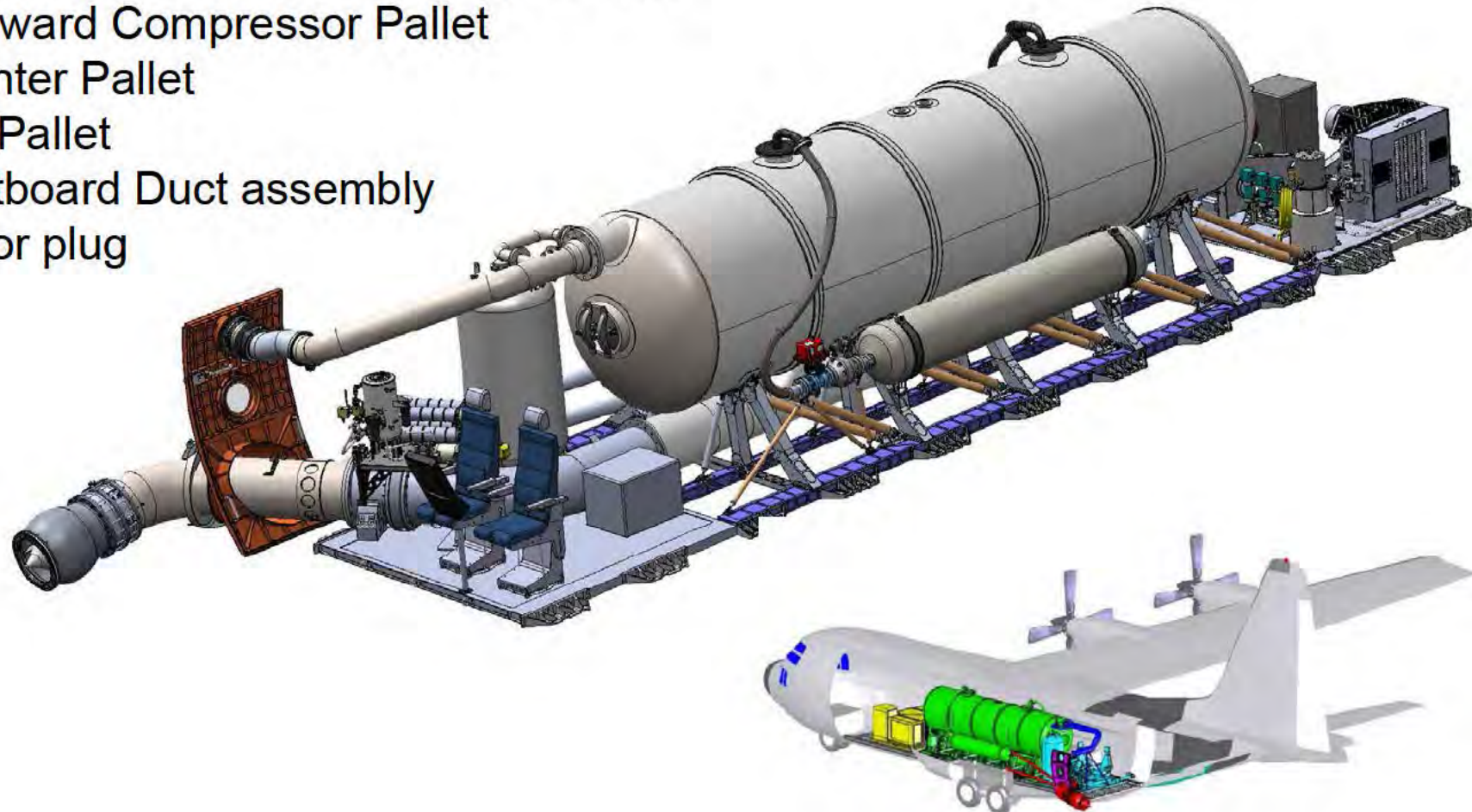


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# End State



- iMAFFS fielding recommendation for C-130H/J





# Leadership Direction



- [Topics to which AATC Leadership will provide direction at the conclusion of the Project Manager's Concept Review...]
- Type of Test (FDE, OUE, OA)
- EPO Required? If no, then AATC Project #
- Reps (LG, Ops)
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# Questions/Discussions

1		(b) (6) CA ANG DSN 893-7790 (b) (6)	3	1	C	<p><b>Coordinator Comment:</b> Add the following paragraphs to the Summary of Recommendations:</p> <ul style="list-style-type: none"> <li><u>The negative effects on Pay, Annual Leave, Sick Leave, Compensatory Time Off, and Retirement contributions accumulate to the point at which personnel may not agree to volunteer for the MAFFS mission set if the only status available is Title 10.</u></li> <li><u>Due to the totality of the impediments to Title 10, it is not in the best interest of the United States government to accept the recommendation that ANG and AFRC personnel be required to only be in a Title 10 Active Duty status when in support of this Federal Civil Support mission.</u></li> </ul> <p><b>Coordinator Justification:</b> The negative effects to military Title 32 technician volunteerism needs to be considered if the mission were to be accomplished in a Title 10 status as it may lead to mission degradation due to lack of volunteers.</p> <p><b>Originator Justification for Resolution:</b></p> <p>Bullet #1: Partially accepted. Included the comment in the discussion portion of Issue #9 (Volunteerism) discussion (p. 20), but didn't include it in the Summary of Recommendations because it is not a recommendation addressing an impediment to T10 duty status. Compensatory time off was not included because it was not identified as an issue for working group consideration, nor was it raised in any working group discussions.</p> <p>Bullet #2: Rejected. This is a recommended course of action on the proposed T10 duty status policy, not a recommendation to mitigate the impact of an identified issue.</p>	P
2		COL (b) (6)	throug		C	<p><b>Coordinator Comment:</b> Recommend a deep dive regarding the</p>	A



		703-607-2697  (b) (6) [REDACTED]	hout			<p>applicability of Law Enforcement Leave (Title 5 USC 6323) for the MAFFS mission before this Law becomes the Recommendation for Issues 1, 3, 4-6, 11-13.</p> <p><b>Coordinator Justification:</b> The Law as written states that the member must be serving in a state status, in a Title 10 status for sections 331, 332, 333 (insurrections), or 12406, called to order for a contingency operation. Performing the MAFFS mission in a Title 10 USC 12301(d) status does not appear to fit the description for technicians to be pursuant to Law Enforcement leave, as currently written.</p> <p><b>Originator Justification for Resolution:</b> DoD General Counsel will comment on the applicability of Title 5, U.S.C., §6323 in their formal coordination.</p>	
3		(b) (6) NG-J35  703-607-1803  (b) (6) [REDACTED] 1	5	1 footno te 4	C	<p><b>Coordinator Comment:</b> Recommend deleting Footnote #4: <del>In the context of this report, “Impediment to Title 10” means that the issue is assessed to be an impediment to implementing the proposed policy that MAFFS operations be performed exclusively in a Title 10 duty status</del></p> <p><b>Coordinator Justification:</b> It was stated by Mr. Salesses at the kick-off meeting of the MAFFS Working Group, and made clear to the senior steering group, that “Impediments to Title 10” means that the issues are impediments to making Title 10 a course of action, whereas Title 32 already remains a course of action.</p> <p><b>Originator Justification for Resolution:</b> Accepted.</p>	A
4		(b) (6)  DSN 697-4487	31	#19 Reco mmen dation	C	<p><b>Coordinator Comment:</b> Strike the recommendation due to not being congruent with, nor supported by JP 3-27, AFDD 3-27, and 32 USC. Change to read as follows: <u>“Use of a DSC would be beneficial to MAFFS support if the nature and extent of his authority was defined and agreed by</u></p>	R



		(b) (6)			<p><u>all parties. Although the presence of mutually exclusive chains of command (Title 10 and Title 32, USC) seems to preclude exercise of a “command authority” by SecDef through CDR USNORTHCOM over all personnel supporting MAFFS operations, a formal command arrangement agreement (CAA) defining the nature and extent of CDR USNORTHCOM’s, and subordinate commanders, “command authority” would ensure he has requisite operational authority over forces operating in all legal statuses.”</u></p> <p><b>Coordinator Justification:</b> Section 113, Title 10, USC is the statutory law which prescribes the authority of the Secretary of Defense while Section 164 of the same statute addresses the authority of a commander of a Combatant Command. The administrative law set forth in DoDD 5100.01, <i>Functions of the Department of Defense and Its Major Components</i>, unifies and expands on those authorities. <i>JP 1, Doctrine for the Armed Forces of the United States</i>, is the administrative law which connects the roles and functions of the Department of Defense to the Combatant Commands, and Chapter V is the authoritative source for command arrangements and relationships. Discussion of command arrangements and relationships in Item 19 of this report focus on the command authorities of Combatant Command, Operational Control, and Tactical Control as being necessary for MAFFS operations. Given MAFFS operations are considered Defense Support of Civil Authorities (DSCA), the command authority of CDR USNORTHCOM is better understood in the context of the command authority of Support as set forth in JP 1, where the command relationship between supporting, CDR USNORTHCOM, and supported, the Incident Commander at NIFC, must be defined pursuant to the guidance under the command authority of Support. While the specifics are in the context of the supported and supporting commanders serving under the same superior, the intent of the</p>	
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					<p>“best practices,” i.e. doctrine, should be apparent. The concept of a defined authority accepted as a “command authority” is evident in JP 3-28, <i>Defense Support of Civil Authorities</i>, and JP 3-16, <i>Multi-National Operations</i>. Both of these documents posit forces presented for operations by more than one sovereign entity under a single commander to ensure unity of effort; the President and State Governors in the former, and nation-states in the latter. Both require definition of the nature and extent of the authority of the central commander and subordinate commanders, because the command authorities set forth in JP 1 are pertinent only to the U.S. Unified Command System, hence require the forces to be in Title 10 status. JP 3-28 provides the guidance and best practice in the form of the “command arrangement agreement” (CAA) for DSCA. JP 3-16 does the same with the expressions of “command authority” negotiated in terms of standardization agreements, terms of reference, treaties, etc.</p> <p>Because both Title 10 and Title 32 USC convey Federal status, the principles of joint doctrine should and can be used to define the requisite “command authority” for CDR USNORTHCOM to present military forces to civil authorities and operate in support of them. The command arrangement agreement would extend CDR USNORTHCOM’s control through CDR 1AF(AFNORTH) as the COMAFFOR/JFACC, through the AEG/CCs to forces in Title 32 status provided by the States. The portal through which forces in Title 32 USC can be used for “operations,” albeit with conditions, and a command authority defined by CAA can be exercised is Section 502(f). Agreement by State Governors and SecDef legitimizes the command relationship in the same context as the command authorities of Combatant Command, Operational Control, Tactical Control and Support were developed and defined. This is consistent with the organizational context of how the U.S. postures its forces for combat operations. SecDef directs the Services to chop operational authority over forces specified in the Forces For document while retaining most of the</p>	
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					<p>administrative authority over those forces. Definition of the nature and extent of the operational authority to be wielded by a combatant commander begins in Section 164, Title 10, USC, to underpin the legitimacy of his authority. It is then passed by administrative law in the form of DoDD 5100.01 and JP 1 to the combatant commander through SecDef.</p> <p><b>Originator Justification for Resolution:</b> For the reasons outlined in the report, DSC is not suitable to MAFFS AEG command. If alternative coordination efforts that include “command agreements” can be addressed as a viable command alternative, then they should be addressed outside the context of a DSC.</p>	
5		<p>(b) (6) [REDACTED]</p> <p>703-607-1803</p> <p>(b) (6) [REDACTED]</p>		C	<p><b>Coordinator Comment:</b> Who is going to action changes required to resolve the impediments to MAFFS members operating in a Title 10 status, to include formalizing the VOCO process, improving the efficiency of AMC’s CMAS process, and incorporating changes to Title 5, USC 6323?</p> <p><b>Coordinator Justification:</b> The MAFFS working group was chartered to identify impediments of MAFFS crew members operating in a Title 10 status so that this duty status could be sourced as another COA. However, many of the impediments identified are beyond the scope and capabilities of the working group and require action, such as writing a formal VOCO process or writing the MAFFS mission into Title 5 USC 6323, in order for this impediment to be officially resolved. With several impediments identified requiring further action, it is apparent that Title 10 is not close to becoming a COA.</p> <p><b>Originator Justification for Resolution:</b> Once the report is finalized, OSD(P) will task DoD Components with incorporating its</p>	A

						recommendations into MAFFS operations.	
6		MG Luke Reiner WY TAG  307-772-5253			S	<p><b>Coordinator Comment:</b> If Title 10 becomes the only duty status available to perform the MAFFS mission, volunteerism among the most highly experienced MAFFS crew members (technicians) may decrease as the pool of MAFFS crew members willing to volunteer will shift to the less experienced drilling Guardsman. This can cause a safety issue with a less MAFFS-experienced crew.</p> <p><b>Coordinator Justification:</b> Most MAFFS-qualified technicians remain highly proficient as they fly in the C-130 three times per week and also remain proficient in the MAFFS mission each year. Most MAFFS-qualified part-time Guardsman only fly twice per month and do not retain MAFFS proficiency each WFF season. These part-time members many times participate in MAFFS once every other year and are typically teamed up with a highly experience MAFFS Instructor Pilot and Instructor Loadmaster.</p> <p><b>Originator Justification for Resolution:</b> Included statement on volunteerism and safety concerns in the draft report.</p>	A
7		(b) (6) [REDACTED] NG/A3  (b) (6) @a ng.af.mil			S	<p><b>Coordinator Comment:</b> MAFFS operations performed in a Title 32 status during the 2013 WFF season were executed with zero volunteer issues.</p> <p><b>Coordinator Justification:</b> Feedback from the members of the ANG MAFFS units emphasized having the flexibility to remain in their primary duty status and having no interruption of pay and benefits as very important.</p> <p><b>Originator Justification for Resolution:</b> Accepted. Added observation</p>	A

						to discussion of Issue #9 (Volunteerism).	
8		(b) (6) [REDACTED] DSN 893-7790  (b) (6) [REDACTED]	9 and through hout	1	S	<p><b>Coordinator Comment:</b> Recommend changing in summary of recommendations and throughout Report recommending members use accrued annual leave or sick leave: Mitigate technician pay concerns by <u>using recommending personnel use</u> any accrued annual leave, military leave, <u>or</u> earned compensatory time off, <u>or accrued sick leave</u> (consistent with statutory and regulatory criteria<sup>1</sup>)</p> <p><b>Coordinator Justification:</b> Members should not be advised to use personnel leave to perform the mission and sick leave should not be considered as it cannot be used for planning ahead of time</p> <p><b>Originator Justification for Resolution:</b> Accepted.</p>	A
9		(b) (6) [REDACTED] DSN 893-7790  (b) (6) [REDACTED]	9	Issue 1 Reco mmen dation s	S	<p><b>Coordinator Comment:</b> Recommend deleting:  <del>• Benchmark a supporting base that conducts similar tours of duty that has sound orders writing, certifying, and payment processes to help decrease pay delays. (Issue #1)</del></p> <p><b>Coordinator Justification:</b> Unless there is an actual document benchmark process, this is a recommendation without a supporting method</p> <p><b>Originator Justification for Resolution:</b> This recommendation was presented to the SSG with no subsequent decision to delete.</p>	R
10		(b) (6) [REDACTED]	9	Issue 1	S	<p><b>Coordinator Comment:</b> Recommend deleting:  <del>• Pre-certify orders to allow units to process pay on or near the start of a</del></p>	P

<sup>1</sup> Technicians generally cannot elect sick leave to go on an active duty military order but can request sick leave in lieu of other leave statuses (annual leave, military leave, etc.) should they experience a period of illness or injury during the active duty tour.

		DSN 893-7790 (b) (6) a (b) (6)		Recommendations		<del>tour of duty with a focus on making payments within one week. (Issue #1)</del> <b>Coordinator Justification:</b> This causes additional administrative requirements not programmed and may result in overpayment and collection. <b>Originator Justification for Resolution:</b> Partially Accepted. Modified recommendation to “Pre-certify orders, where appropriate, to allow...”.	
11		(b) (6) DSN 893-7790 (b) (6)	9	Issue 2	S	<b>Coordinator Comment:</b> Recommend deleting: • <del>Adjust MAFFS unit processes to accelerate orders request initiation to trigger Defense Enrollment Entitlement Reporting System (DEERS) updates more quickly.</del> <b>Coordinator Justification:</b> There is no supporting method to accomplish this and uploading orders of less than 31 days into DEERS quickly is not correlated with faster payout. <b>Originator Justification for Resolution:</b> Issue #2 (DEERS Enrollment Interruption) was revised to accurately reflect findings and recommendations pertinent to short periods of active duty (less than 31 days).	A
12		(b) (6) DSN 893-7790 (b) (6)	7	1	S	<b>Coordinator Comment:</b> Recommend changing the following sentence in Pay and Benefit Considerations: Measures are available to mitigate <del>many these</del> impediments to Title 10 for technician personnel. <b>Coordinator Justification:</b> The sentence incorrectly implies that all impediments can be mitigated.	R



						<b>Originator Justification for Resolution:</b> “Those impediments” are those impediments that were identified in formal coordination of the DSD MAFFS Duty Status (Title 10) memo in April 2013 and two added by the MAFFS Duty Status SSG. If there are more, they were not identified in formal coordination of the DSD memo or during SSG meetings.	
13		(b) (6) [REDACTED] DSN 893-7790  (b) (6) [REDACTED]	8	1	S	<b>Coordinator Comment:</b> Recommend changing: Traditionally, MAFFS duty is <del>limited to</del> approximately eight days, which should result in a certified order getting to a finance office within two weeks from the start of the tour.  <b>Coordinator Justification:</b> There is not an 8-day limit to MAFFS duty  <b>Originator Justification for Resolution:</b> Accepted.	A
14		(b) (6) [REDACTED] DSN 893-7790  (b) (6) [REDACTED]	8	5	S	<b>Coordinator Comment:</b> Recommend changing: <ul style="list-style-type: none"> <li>Traditional Reservists. Minimal impact. Reservists always have and will continue to be paid upon completion of short active duty tours. MAFFS qualified individuals should continue to volunteer at historical levels.</li> </ul> <b>Coordinator Justification:</b> Accuracy  <b>Originator Justification for Resolution:</b> Accepted.	A
15		(b) (6) [REDACTED] DSN 893-7790  (b) (6) [REDACTED]	9	1	S	<b>Coordinator Comment:</b> Recommend changing: <ul style="list-style-type: none"> <li>The service member would be required to refund the overpaid amount. <u>Finally, the process of pre-certifying orders requires additional personnel actions which increase workload.</u></li> <li><del>Pre certify orders to allow units to process pay on or near the start of tour of duty ...</del></li> </ul>	A

		af.mil				<p><b>Coordinator Justification:</b> Precertification of orders takes additional work by the unit and it was determined by the working group that this is not applicable as MAFFS missions are usually 8-days.</p> <p><b>Originator Justification for Resolution:</b> Pre-certification was determined by the WG as a viable measure to mitigate an impediment. While there are restrictions in its use, units can modify the MAFFS support profile.</p>	
16		<p>(b) (6)</p> <p>DSN 893-7790</p> <p>(b) (6)</p>	9-10	Issue 2 Last & first	S	<p><b>Coordinator Comment:</b> Recommend deleting:  <del>Per the SSG, while orders are required for DEERS enrollment, units can create interim orders using only the service member's name and Social Security Number.</del></p> <p><b>Coordinator Justification:</b> This causes additional admin requirements not programmed and is likely to result in overpayment and collection.</p> <p><b>Originator Justification for Resolution:</b> This comment was discussed and recommended by the SSG; after three rounds of coordination, there has been no recommendation to delete.</p>	R
17		<p>(b) (6)</p> <p>DSN 893-7790</p> <p>(b) (6)</p>	11	Issue 2 Recommendations	S	<p><b>Coordinator Comment:</b> Recommend deleting:  <u>The near term solution is to input orders as soon as possible to initiate DEERS updates.</u></p> <p><b>Coordinator Justification:</b> This is not a viable solution as personnel do not delay inputting orders into DEERS.</p> <p><b>Originator Justification for Resolution</b> Issue #2 (DEERS Enrollment Interruption) was revised to accurately reflect findings and recommendations pertinent to short periods of active duty (less than 31</p>	A

						days).	
18		(b) (6) [REDACTED] DSN 893-7790 (b) (6) [REDACTED]	14	Issue 4 Reco mmen dation s	S	<p><b>Coordinator Comment:</b> Recommend changing: Military technicians should consider <u>minimizing use of LWOP status if possible...</u></p> <p><b>Coordinator Justification:</b> Minimizing LWOP status ensures the military member is still entitled to technician retirement benefits</p> <p><b>Originator Justification for Resolution:</b> Accepted.</p>	A
19		(b) (6) [REDACTED] DSN 893-7790 (b) (6) [REDACTED]	15	Issue 5 Discus sion	S	<p><b>Coordinator Comment:</b> Recommend adding: <u>The requirements of 5 U.S.C. §5519 creates additional administrative burden on the member, the unit and the Defense Finance and Accounting Services (DFAS) system.</u> According to the North Carolina ANG Comptroller, the process for repaying a debt incurred for dual-compensation can take up to 90-days.<sup>2</sup></p> <p><b>Coordinator Justification:</b> Clarity</p> <p><b>Originator Justification for Resolution:</b> Accepted.</p>	A
20		(b) (6) [REDACTED] DSN 893-7790 (b) (6) [REDACTED]	15	Issue 5 Discus sion	S	<p><b>Coordinator Comment:</b> Recommend changing: <u>Requiring Recommending</u> MAFFS qualified technicians to use 22-day military leave option exclusively to meet the needs of the MAFFS mission reduces or could preclude the use of the entitlement for other qualifying civil support or contingency operations.</p> <p><b>Coordinator Justification:</b> If deemed legal, the 22-day leave is the best</p>	A

<sup>2</sup> Once the duty is complete, employees/supervisors must turn in earnings data. DFAS will then establish a debt for the lesser of technician or military pay (process takes approximately 30 days) and the member receives a due process letter from DFAS. The member will get 30 days to provide a payment schedule back to DFAS directly. DFAS will then collect the gross pay back, based on the payment plan chosen. So, the member will receive net pay during the MAFFS operation, but will be required to repay the gross amount 60-90 days later.



						option for technicians; however, it is not mandatory.  <b>Originator Justification for Resolution:</b> Accepted.	
21		(b) (6) [REDACTED] DSN 893-7790  (b) (6) [REDACTED]	20	Issue 9 Findin g & Reco mmen dation	S	<p><b>Coordinator Comment:</b> Change paragraph to read: Finding. Impediment to Title 10; <del>measures to mitigate are available.</del> Retaining current duty status flexibility would help ensure the continued availability of RC volunteers; <del>however, minimizing the potential of pay and benefits problems may mitigate potential volunteerism issues in supporting the MAFFS mission in Title 10 status.</del> Recommendation. <u>Continue to provide a variety of status options available to the member; do not require Title 10 to be the only status available.</u> <del>Implement the recommendations presented throughout the report to mitigate potential pay, benefits, and administrative issues that would impose impediments to Title 10 duty status.</del></p> <p><b>Coordinator Justification:</b> There are no measures that encourage volunteerism better than giving the unit commanders status flexibility. However, it needs to be made known that in order for this report to be unbiased, the report needs to be written with the fact that this is to establish Title 10 as a COA, not as currently written with the tone that the report will lead to Title 10 being the only COA.</p> <p><b>Originator Justification for Resolution:</b> The report addresses unit flexibility and several measures (See matrix on page 36) that may mitigate issues to volunteering. Additionally, the recommendation language was rejected because it offers a COA on the proposed T10 duty status policy, not a recommendation to mitigate the impacts of this issue.</p>	R
22		(b) (6) [REDACTED]	22	Issue	S	<b>Coordinator Comment:</b> Change to read:	A



		(b) (6) CA ANG DSN 893-7790  (b) (6)		11 findin g		<p>Finding. Impediment to Title 10 duty status; <del>measures to mitigate are available.</del></p> <p><b>Coordinator Justification:</b> Reliance on full time personnel (technicians) cannot be mitigated but measures can be proffered to lessen negative impact on personnel if they are required to be in Title 10.</p> <p><b>Originator Justification for Resolution:</b> Language was added to acknowledge the continued reliance on full-time members to perform the MAFFS mission. However, the report addresses several measures (see matrix on p. 36) that may mitigate issues to volunteering.</p>	
23		(b) (6)  DSN 893-7790  (b) (6)	24 & 25	Issue 13 Discus sion	S	<p><b>Coordinator Comment:</b> Recommend deleting the following paragraphs:  <del>The AFRC Judge Advocate is of the opinion that the MAFFS mission should not be flown in civilian status since operations flown in civilian status do not provide a clear military chain of command or command authority. The Secretary of Defense exercises supervisory authority, not command authority, over technician personnel performing duties in a civilian status.</del>  <del>Furthermore, the AFRC Judge Advocate believes that flying operational missions (i.e. missions where training is not the primary purpose) as technicians is at odds with Title 10, U.S.C., §10216 and the primary purpose for the technician program. Although these missions are flown with a view towards reimbursement under the Economy Act, there have been instances where the Economy Act funds were transmitted to the wrong DoD account.</del>  <del>SAF/MRR at the SSG (July 2013) stated that reimbursement by NIFC for technician personnel was not appropriate.</del></p> <p><b>Coordinator Justification:</b> Keep the report unbiased from opinions by</p>	R

						only including official legal findings.	
						<p><b>Originator Justification for Resolution:</b> Language was added to reflect other positions of the WG. Also, added that the WG was not able to gain consensus. Specific positions of working group members and their component organizations are reflected throughout the report.</p>	
24		<p>(b) (6) [REDACTED]</p> <p>DSN 893-7790</p> <p>(b) (6) [REDACTED]</p>	25	Issue 13 recommendation		<p><b>Coordinator Comment:</b> <del>Recommend changing the following paragraph:</del></p> <ul style="list-style-type: none"> <li><del>Technicians should consider other leave options including the 22 day military leave option, if deemed permissalbe, when providing MAFFS support in a Title 10 duty status. Seek an amendment to Title 5, U.S.C., §6323 to exempt reimbursable MAFFS support from counting against the 22-day military leave entitlement.</del></li> </ul> <p><b>Coordinator Justification:</b> Not convinced that it is legal for mil techs to use law enforcement leave, however, it may be best to write an amendment to the law.</p> <p><b>Originator Justification for Resolution:</b> Already recommended in Issue #5 that specifically addresses the 22-day military leave option.</p>	R
25		<p>(b) (6) [REDACTED]</p> <p>DSN 893-7790</p> <p>(b) (6) [REDACTED]</p>	25	Issue 13 recommendation	S	<p><b>Coordinator Comment:</b> Change the paragraph to read: “The Secretary of the Air Force should publish specific policy guidance on using USAFR and <u>the Chief, National Guard Bureau</u> should publish specific policy guidance on using ANG technicians for this mission.”</p> <p><b>Coordinator Justification:</b> Allow the NGB flexibility over its Title 32 Military technicians</p> <p><b>Originator Justification for Resolution:</b> SAF is the overall DoD Component for USAFR and ANG Technicians. Added language from the</p>	P



						SAF/MR formal coordination comments that guidance will be developed in coordination with the Director, Air National Guard, through the Chief, National Guard Bureau, and the Chief, Air Force Reserve.	
26		(b) (6) [REDACTED] DSN 893-7790  (b) (6) [REDACTED]	27	Issue 17 Discus sion	S	<p><b>Coordinator Comment:</b> Change the following paragraph: Some members of the working group contend that the DoD JOPES process is designed for warfighting and is not well-suited to domestic civil support missions such as MAFFS because it inserts processes and requirements that are unnecessary, burdensome, and inefficient. According to Joint Staff planning policies and procedures, <del>however, "JOPES supports the Secretary of Defense, OSD, and the joint planning and execution process used during wartime, peacetime operations, exercises, and hostilities across the range of military operations."</del><sup>32</sup></p> <p><b>Coordinator Justification:</b> JOPES is not designed for short duration on and off again DSCA missions such as MAFFS. This sentence does not add value to the Discussion.</p> <p><b>Originator Justification for Resolution:</b> JOPES is required for the full-range of DoD training, exercises, and operations.</p>	R
27		(b) (6) [REDACTED] DSN 893-7790  (b) (6) af.mil [REDACTED]	28	Issue 18 Findin gs	S	<p><b>Coordinator Comment:</b> Change to read: Findings. Impediment to Title 10 duty status; measures to mitigate are available. The CMAS process may take up to <del>72 hours</del> <u>1 week</u> and starts with receipt of a request for assistance (see Appendix B, Orders Processes).</p> <p><b>Coordinator Justification:</b> accuracy</p> <p><b>Originator Justification for Resolution:</b> AMC, which owns the CMAS</p>	R

						process, provided 72 hours as the normal processing time for CMAS.	
28		(b) (6) CA ANG  DSN (b) (6)  (b) (6) n@ang.af.mil	29	Issue 18 Reco mmen dation s	S	<p><b>Coordinator Comment:</b> Add:</p> <ul style="list-style-type: none"> <li>Air Mobility Command can improve response by proactively manning positions responsible for approving CMAS requests when domestic support operations are foreseen. Additionally, AMC can modify accounting systems processes to provide rapid approval of MANDAY expenditures when reimbursements of MAFFS operations are affirmed. Since this is affirmed when a RFA is received, AMC can proactively load MANDAYS into the automated allocation system to mitigate delays.</li> </ul> <p><b>Coordinator Justification:</b> Recommendation discussed at the working group meetings.</p> <p><b>Originator Justification for Resolution:</b> Accepted.</p>	A
29		(b) (6)  (b) (6)  (b) (6)	29	Issue 19 Discus sion	S	<p><b>Coordinator Comment:</b> Change the paragraph: “A DSC arrangement <del>is an ineffective</del> <u>could be an effective</u> option for establishing clear lines of authority of USAFR and ANG C-130 aircrews performing MAFFS support of NIFC <u>if appropriate command authority arrangements are employed</u>. <del>However</del>, ANG and the California NG submit that unity of effort is maintained consistent with statutory responsibilities in operations involving Federal forces and non-federalized NG forces with Federal forces under Federal command and control and non-federalized NG forces under State command and control.”</p> <p><b>Coordinator Justification:</b> The working group has not effectively research the DSC option and therefore cannot state that a DSC is an ineffective option, however, CA and ANG believe that the DSC could be</p>	R



						<p>effective. Perspective-write to be unbiased.</p> <p><b>Originator Justification for Resolution:</b> DSC for the MAFFS AEG is addressed in detail in the report. The findings and recommendations are supported by a majority of the WG members. Command authority is not “arranged,” it is established through statutory authorities. Any “arrangements” between States and their military commanders do not establish command authority or a DSC.</p>	
30		<p>(b) (6) [REDACTED]</p> <p>DSN 893-7790</p> <p>(b) (6) [REDACTED]</p>	31	#19 Reco mmen dation	S	<p><b>Coordinator Comment:</b> Change the following paragraph to read:  <del>No further action</del> <u>Innovative methods for mission accomplishment, while resolving issues with command authority without impinging upon State and Federal command and control constructs, should be explored.</u></p> <p><b>Coordinator Justification:</b> CA and NGB would like to keep this option open</p> <p><b>Originator Justification for Resolution:</b> Innovative options that fall outside the authorities for a DSC should be addressed outside the WG and the DSC discussion.</p>	R

### 5INSTRUCTIONS FOR COMPLETING SD FORM 818

**COORDINATING DoD COMPONENT:** Use this form to provide critical and substantive comments to the OSD Component that originated the issuance. Complete the classification header and footer, columns 1 through 6, and the first two entries in column 7 (Coordinator Comment/Coordinator Justification).

**CLASSIFICATION** – Enter the highest classification of the comments. If all are unclassified, mark the header and footer accordingly and ignore the column.

**COLUMN 1** – Enter the number of the comment. Enter comments in the order of the pages/paragraphs they apply to.

**COLUMN 2** – Enter the classification of the comment. If all comments are unclassified, mark the header and footer accordingly and ignore the column.

**COLUMN 3** – Enter the appropriate information.

**COLUMN 4** – Enter the appropriate information.

**COLUMN 5** – Enter the appropriate information.

**COLUMN 6** – Enter the comment type. Place only one comment per row. Do **NOT** include administrative comments concerning non-substantive aspects of an issuance, such as dates of references, organizational symbols, and/or grammatical errors.

- (C) **CRITICAL:** When a Component has one or more critical comments, that Component's coordination shall reflect a nonconcur. Critical comments identify:
  - Violations of the law or contradictions of Executive Branch policy or of policy established in DoD issuances. The GC, DoD, or his or her representative shall identify legal objections as critical comments.
  - Unnecessary risks to safety, life, limb, or DoD materiel; waste or abuse of DoD appropriations; or imposition of an unreasonable burden on a Component's resources.
- (S) **SUBSTANTIVE:** Substantive comments are made when a section in the issuance appears to be or is potentially unnecessary, incorrect, misleading, confusing, or inconsistent with other sections, or when a Component disagrees with the proposed responsibilities, requirements, and/or procedures. A substantive comment is usually not sufficient justification for a Component to nonconcur on an issuance. Several substantive comments when taken together may be grounds for a nonconcurrence.

**COLUMN 7 – COORDINATING COMPONENT:** Enter the comment in the area provided. Enter your justification for the comment and your requested or recommended changes in the area provided. You must provide convincing support for critical comments in the justification.

– **ORIGINATING COMPONENT:** Enter your justification for disposition of the comment in the area provided. Include any related communications with the coordinating Component. You must provide convincing support for rejecting critical comments.

**COLUMN 8** – For use by the originating DoD Component. Enter whether you accepted (A), rejected (R), or partially accepted (P) the comment. Your justification for disposition of the comment in column 6 must be consistent with this entry.

**Pages 59-78 have been withheld in their  
entirety pursuant to  
5 U.S.C. § 552 (b)(5), (b)(6)**

**(Draft Command Arrangement  
Agreement)**

**It is unreasonable to segregate any  
portions within this withholding for  
release.**

## ASSIGNMENT OF INTELLECTUAL PROPERTY

**THIS ASSIGNMENT OF INTELLECTUAL PROPERTY** is effective as of September 20, 2013.

**WHEREAS, VRB Corp.**, a corporation duly organized and validly existing under the laws of Michigan, United States of America ("Assignor") is the owner of the intellectual property set forth on Schedules A and B hereto (collectively referred to as the "IP");

**WHEREAS**, Assignor has agreed to transfer all of its rights in and to the IP to **UNITED AERONAUTICAL CORP.**, a corporation duly organized and validly existing under the laws of the State of California, United States of America ("Assignee"), and Assignee has agreed to accept such assignment, on the terms and conditions more particularly set forth in the Technology Transfer Agreement ("Technology Transfer Agreement") by and between the Assignor and the Assignee dated as of September 19, 2013; and

**WHEREAS**, the parties wish to herein memorialize said assignment, transfer and sale of Assignor's right, title and interest in and to the IP to Assignee.

**NOW, THEREFORE**, the parties agree as follows:

Assignor hereby sells, assigns, transfers, and coveys to Assignee, its successors and assigns, the entire right, title and interest owned by Assignor as of the date of the Technology Transfer Agreement, in and to: any and all of the following in any jurisdiction throughout the world owned by Assignor as of the date of the Technology Transfer Agreement specific to 1) Intellectual Property for the MAFFS I fire retardant tank system; 2) Intellectual Property for the MAFFS II fire retardant tank system; and 3) Intellectual Property for the RADS II fire retardant tank system including: (a) inventions (whether or not patentable or reduced to practice) and improvements; (b) Patents and Patent Applications identified in Exhibit A; (c) Trademarks identified in Exhibit B; and (d) any similar, corresponding or equivalent assignable rights related thereto owned by the Assignor as of the date of this Technology Transfer Agreement.

Assignor hereby requests the Director of the United States Patent and Trademark Office (the "Director"), as well as his or her non-US counterparts in the non-US jurisdictions which exercise authority over any of the IP to record this Assignment of Intellectual Property. Assignor hereby further requests the Director and his or her non-US counterparts to issue any and all trademark, patent and copyright registrations resulting from applications among the IP or derived therefrom to Assignee as assignee of the entire interest therein.

Assignor agrees to execute further papers and to do such other acts as may be necessary or reasonably requested by Assignee to vest full title in and to All IP in the Assignee or which may be necessary to obtain, renew, issue or enforce All IP. This Assignment of Intellectual Property shall be binding upon and shall inure to the benefit of the respective successors and permitted assigns of Assignor and Assignee.

[Remainder of Page Intentionally Left Blank]

27 H-10



IN WITNESS WHEREOF, the parties hereto have caused this Assignment of Intellectual Property to be executed as of the above-referenced day and year.

**ASSIGNOR:**

**VRB Corp.**

By: 

Name: ANDREW LEE OTTAWAY

Title: SENIOR VICE PRESIDENT

**ASSIGNEE:**

**UNITED AERONAUTICAL CORP.**

By: 

Name: BRADFORD BECK

Title: PRESIDENT, COU

[SIGNATURE PAGE TO ASSIGNMENT OF INTELLECTUAL PROPERTY]

**EXHIBIT "A"**

**PATENTS AND PATENT APPLICATIONS**

	<b>Patent No.</b>	<b>Title</b>	<b>Patent Type</b>	<b>Issue Date</b>	<b>Inventor(s)</b>
1.	7,165,627	Portable Airborne Fire Fighting and Sensing System	U.S. Patent	11/23/2007	Richard Woodland, Steve Marine and Michael Hutter
2.	3,698,480	Dual Tank Air Borne Fire Retardant Dispensing System	U.S. Patent	10/17/1972	Dale P. Newton
3.	4,936,389	Fluid Dispenser for an Aircraft	U.S. Patent	6/26/1990	Alan B. MacDonald, Lawrence J. Neuwirth

	<b>Application No.</b>	<b>Title</b>	<b>Application Type</b>	<b>Filing Date</b>	<b>Inventor(s)</b>
1.	12/684,292	Advanced Airborne Fire Fighting Systems	U.S. Nonprovisional application	1/8/2010	Donald M. Nelson
2.	12/687,085	Cargo Loading Trailer	U.S. Nonprovisional application	1/13/2010	Donald M. Nelson
3.	12/359,143	Portable Airborne Fire Fighting and Sensing System	U.S. Nonprovisional application	1/23/2009	Richard Woodland, Steve Marine and Michael Hutter
4.	61/144,378	Advanced Airborne Fire Fighting System	U.S. Provisional application	1/13/2009	Arno Tixel
5.	61/143,364	Advanced Airborne Fire Fighting System (MAFFS)	U.S. Provisional application	1/8/2009	Arno Tixel

	<b>Application No.</b>	<b>Title</b>	<b>Application Type</b>	<b>Filing Date</b>	<b>Inventor(s)</b>
6.	PCT/US10/20439	Advanced Airborne Fire Fighting System	PCT application	1/8/2010	Donald M. Nelson
7.	PCT/US10/20948	Cargo Loading Trailer	PCT application	1/13/2010	Donald M. Nelson



**EXHIBIT "B"**

**TRADEMARKS**

	<b>Mark</b>	<b>Country</b>	<b>Serial No.</b>	<b>Filing Date</b>	<b>Registration No. Reg. Date</b>
1.	AU	U.S.	85048561	05/26/2010	N/A
2.	Aero Union	U.S.	85048571	05/26/2010	N/A
3.	AU Aero Union Corporation	U.S.	85048566	05/26/2010	N/A





**From:** [Richard Montecalvo](#)  
**To:** (b) (6) [CIV USAF \(US\)](#); (b) (6) [CIV USAF \(US\)](#); (b) (6) [CIV USAF AFLCMC \(US\)](#)  
**Cc:** (b) (6) [CIV NG NGB \(US\)](#); (b) (6) [CIV USARMY RDECOM AMRDEC \(US\)](#); (b) (6) [CIV USARMY RDECOM AMRDEC \(US\)](#); (b) (6) ; (b) (6) ; (b) (6) ; (b) (6) ; (b) (6) [Lt Col USAF NGB A5 \(US\)](#)  
**Subject:** [Non-DoD Source] C-130 MODULAR AIRBORNE FIRE FIGHTING SYSTEM (MAFFS) PROCEDURES  
**Date:** Thursday, December 17, 2015 10:11:06 AM  
**Attachments:** [afi11-2c-130v3addb.pdf](#)

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ALCON,

AFI11-2C-130 Volume 3, dtd 11 JUNE 2015 (attached) identifies the flight restrictions imposed during MAFFS operations as well as other pertinent information. Page 17, para 6.2.2 states, "Cabin pressurization is limited to 10 in Hg (5 psid) or less with the MAFFS door plug installed." This identifies the action item requirement info needed from yesterday.

Thanks

Rich Montecalvo

Project Manager

Office: 256-319-4325

Cell: 256-652-2975

richard montecalvo@yms-hsv.com <richard montecalvo@yms-hsv.com >

Yulista Aviation, Inc.

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“22 CFR Part 125.4 (b) (9) applicable.”

**BY ORDER OF THE  
SECRETARY OF THE AIR FORCE**

**AIR FORCE INSTRUCTION 11-2C-130  
VOLUME 3 Addenda B**



**11 JUNE 2015**

***Flying Operations***

***C-130 MODULAR AIRBORNE FIRE  
FIGHTING SYSTEM (MAFFS)  
PROCEDURES***

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This addenda supports AFI 11-2C-130 Vol 3, *C-130 Operations Procedures*; and implements AFI 11-2, *Aircrew Operations*, AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, and AFI 11-202 Vol 3, *General Flight Rules*. It establishes policy for the MAFFS units to safely and successfully accomplish the worldwide MAFFS missions. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force. This instruction applies to Air National Guard (ANG) and Air Force Reserve (AFRC) Units. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Management System (AFRIMS). This publication requires the collection and or maintenance of information protected by the Privacy Act (PA) of 1974. The authorities to collect and or maintain the records prescribed in this publication are Title 10 *United States Code*, Chapter 857 and *E.O. 9397 (SSN)* as amended by Executive Order 13478, Amendments to Executive Order 9397 Relating to Federal Agency Use of Social Security Numbers, November 18, 2008. Forms affected by the PA have an appropriate PA statement. System of records notice F011 AF XO, *Aviation Resource Management System (ARMS)* applies. To recommend changes, conflicts, suggestions, or recommendations submit the AF Form 847, *Recommendation for Change of Publication*, to the Office of Primary Responsibility (OPR); route AF Form 847s from the field through Major Command (MAJCOM) publications/forms Managers.

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## Chapter 1

### POLICY

**1.1. Sound Judgment.** These procedures provide guidance to plan and execute Modular Airborne Fire Fighting System (MAFFS) missions. Instructions in this AFI are mandatory and intended to provide the best possible operating procedures across a wide range of circumstances, but cannot account for every possible situation a crewmember may encounter during a MAFFS mission. Planners and aircrew must use sound judgment and operational risk management to manage unique mission demands.

**1.2. General.** MAFFS consists of a palletized pressurized tank system and dispensing nozzle loaded on C-130H aircraft modified by TCTO 1C-130-2058 and TCTO 1C-130-2059. When mobilized, MAFFS equipped aircraft will be employed in support of the National Interagency Fire Center (NIFC) or a respective State agency responsible for firefighting (i.e. CalFIRE) to control forest/wildland fires.

1.2.1. The term “MAFFS” is used as a generic term which includes all operations relating to the deployment, employment and redeployment of the MAFFS system for the purposes of aerial delivery of liquid (retardant, water, or other approved liquid) from a suitably equipped C-130H aircraft in support of wildland fires.

1.2.2. Guidance for MAFFS missions includes but is not limited to: USFS MAFFS Operating Plan, AMC Phoenix Forest CONOPS, AFNORTH OPORD, and this instruction.

**1.3. Deviations and Waivers.** Do not deviate from policies in this AFI except when the situation demands immediate action to ensure safety. The Pilot in Command (PIC) is vested with ultimate mission authority and responsible for each course of action they choose to take.

1.3.1. Deviations. The PIC shall report deviations or exceptions taken without a waiver through command channels to their Chief, Major Command (MAJCOM) Stan/Eval.

1.3.2. Waivers. Unless otherwise directed, and IAW AFI 11-202V3, waiver authority for the content of this instruction is MAJCOM/A3 with mission execution authority. For USTRANSCOM/AMC operational missions under Operational Control (OPCON) of 18 Air Force, 18 AF/CC is the waiver authority. For aircrews that Change Operational Control (CHOP) to a combatant command (CCMD), the COMAFFOR is the waiver authority.

1.3.2.1. Federal MAFFS missions in response to validated NIFC request for assistance (RFA) fall under USNORTHCOM and are executed through the 1st AETF (ACC) and the 1 AF/CC as the COMAFFOR is the commander/waiver authority.

1.3.2.2. Waivers for state missions will be routed through the State JFHQ to NGB/A3.

**1.4. Improvement Recommendations.** Send comments and suggested improvements to this instruction on an AF Form 847, *Recommendation for Change of Publication*, through channels to HQ AMC/A3V, 402 Scott Drive Unit 3A1, Scott AFB IL, 62225-5302 or post to the Air Mobility Command Change of Publication sharepoint site: <https://cs.eis.af.mil/aircrewpubs/AMC%20847%20Program/default.aspx>.

## Chapter 2

### COMMAND AND CONTROL

**2.1. Air Expeditionary Group-Wildland Firefighting (AEG-WFF).** CDRAFNORTH, in coordination with ACC, will stand up the AEG-WFF and appropriate provisional EAS(P) under the 1 Air Expeditionary Task Force (AETF), to provide C2 for aviation units employed during WFF operations.

2.1.1. The designated AEG-WFF/CC will coordinate all logistical issues on behalf of the remaining three units for deployment and employment using reachback to their home unit if required for logistics support.

**2.2. Provisional Expeditionary Aerospace Squadron-Mission Commander.**

2.2.1. An EAS(P)-WFF/MC will be selected for all MAFFS activations and will report to the AEG-WFF/CC (Federal Activations) or to the appropriate OG/CC (State Activations). This Mission Commander will be a MAFFS qualified rated officer no lower than the rank of Maj/O-4.

2.2.2. The military unit responsible to provide the EAS (P)-WFF/MC will be identified in the initial MAFFS activation message. The naming convention of each EAS should follow that of the MAFFS flying squadron responsible for providing the bulk of equipment and personnel to the deployed location, unless that name is already in use at another EAS location. **Example:** If the 731 AS has been tasked to stand up an EAS, the name would be 731 EAS. The AEG-WFF/CC has the final say on what name an EAS(P) will use.

2.2.3. The EAS(P)-WFF/MC is the primary point of contact between the military and the MAFFS Liaison Officer (MLO) and is the single point of contact for all military activities, equipment, and personnel (including air technicians assigned to MAFFS duties) at the deployed location.

2.2.4. The AEG-WFF/CC (OG/CC for state activations) has final authority on all issues involving the military.

2.2.5. The MAFFS Liaison Officer (MLO) (federal or state) is single point of contact for all other (non-military) agencies.

2.2.6. The EAS(P)/MC should not act as a primary crew member on MAFFS airdrop missions. This does not preclude the EAS(P)-WFF/MC from accomplishing annual refresher training. The EAS(P)/MC or AEG-WFF/CC will not be assigned to a MAFFS hard crew, but may be utilized during periods of reduced manning or to substitute crewmembers for short durations. An acting mission commander will be declared any time the primary EAS(P)-WFF/MC is not available for duty (such as flying), and the MLO and AEG-WFF/CC will be notified. Reference [paragraph 4.2](#) for EAS(P)/MC or AEG-WFF personnel crew rest requirements.

**2.3. International Support.**

2.3.1. Every effort will be made to conduct International Support with a Leadplane pilot and Lead Aircraft. MAFFS deployment outside of NORTHCOM AOR will remain under OPCON of 18 AF or as written in the DEPORD. The typical standing DSCA order does not

apply outside of CONUS. Detailed planning with the host nation, MAFFS wings, AEG-WFF/CC, NIFC and other stakeholders will be facilitated by 18 AF and appropriate orders issued prior to movement.

2.3.2. International assignments may be accepted after a risk assessment has been completed and made available for review by the Assistant Director of Operations, Fire and Aviation Manager. Ideally, personnel requested will deploy with the aircraft tasked to support the International Assignment. The MAFFS Liaison Officer, (MLO), MAFFS Air Base Manager (MABM), MAFFS Leadplane Pilot (one per MAFFS aircraft), and EAS(P)-WFF/MC positions will be filled for international MAFFS assignments. At least one Field Support Representative (FSR) will be requested. A minimum of two FSR's is recommended. Requesting US Embassy will provide a representative and interpreter, if necessary, to assist the MLO and EAS(P)-WFF/MC.

2.3.3. When unable to fly the lead plane aircraft to the international location, international MAFFS missions will utilize a qualified MAFFS Leadplane pilot on board the MAFFS aircraft to assist the Aircraft Commander with firefighting analysis and requirements. Leadplane pilots are authorized MEP status during both training and employment missions.

2.3.4. Employment missions outside the NORTHCOM AOR require a MAFFS Instructor Pilot as the aircraft commander.

## **2.4. Flight Authorizations.**

2.4.1. Wings will generate FAs for each crew they deploy in support of MAFFS. Intent is for deploying crews to operate as a contiguous crew utilizing the same FA.



## Chapter 3

### DEPLOYMENT/REDEPLOYMENT

**3.1. Deployment.** The USFS term for “deployment” is “mobilization”. Deploy one MAFFS qualified crew per tasked MAFFS aircraft. If anticipated operational tempo dictates, additional crewmembers may be deployed at the direction of the AEG-WFF/CC with the concurrence of the MAFFS Liaison Officer (MLO). This additional crewmember must be added to the appropriate TPFDD with info e-mails sent to AFNORTH/A3X and AMC/A3O if not identified in the original employment message. Deploy USFS required support equipment using the most rapid means commensurate within the timeline specified by the requesting organization. Airlift Wings deploying in support of MAFFS should source airlift organically. Due to cost, when able limit support aircraft to one C-130 when deploying /redeploying one or two MAFFS aircraft. Support from one of the other MAFFS Airlift Wings may also be used. MAFFS ground compressors (if required) should be transported by airlift or suitably cushioned ground transportation to reduce potential damage. MLO support equipment, MAFFS unit maintenance equipment and MAFFS mechanics (as permitted by AFI 11-401, *Aviation Management*) may also be transported via airlift. Airlift requests will be made through the AEG-WFF/CC to source appropriately (ANG, AFRC, 618 AOC (TACC), etc.) if MAFFS wing organic airlift is unavailable.

3.1.1. System Functional Check. MAFFS should be functionally checked on the ground with a 1000 gallon water minimum discharge each time the system is installed on an aircraft prior to loading with retardant. This check should occur at home station prior to departure when practical.

3.1.2. If operations are anticipated to be conducted for more than two weeks, request deployment of one MAFFS trailer per employment location. MAFFS trailers are not equipped or approved for towing over civilian roads or highways. The MAFFS trailer may be transported by C-130 or via commercial flatbed semi-trailer. The EAS(P)/MC will coordinate with the MLO for the desired transportation method.

3.1.3. MAFFS units and some equipment used in support of the MAFFS mission are owned and maintained by the USFS. Deployment of the MAFFS units also includes deployment of the associated ground support equipment required to execute firefighting operations.

3.1.4. MAFFS Tool Accountability and Positioning. MAFFS tool boxes will use the Consolidated Tool Kit (CTK) program IAW AFI 21-101 AMC Sup, Aircraft and Equipment Maintenance Management, Ch 10 Tools and Equipment Management.

3.1.4.1. MAFFS tool boxes will accompany each MAFFS unit to MAFFS deployed locations. Each tool box will either be attached to or accompany the Pintle cart. Tool boxes will be downloaded and placed in a secured location at the deployed location.

3.1.4.2. MAFFS Tool Box POC will have all MAFFS tool box torque wrenches calibrated with in the PMEL (Precision Measurement Equipment Laboratory) program. Recommend using War Readiness Material (WRM) account.

**3.2. Redeployment.** The USFS term for “redeployment” is “demobilization.” MLO support equipment and MAFFS unit maintenance equipment should be kept together to facilitate rapid

follow-on deployment. Most support equipment may be transported over land when more cost effective or efficient.

## Chapter 4

### PRE-FLIGHT PROCEDURES

**4.1. Crew complement.** Normal crew ratio for MAFFS Airlift Wings is 5.0 crews per MAFFS unit. Two loadmasters are required per crew. Crew complement per wing assumes a normal fire season and two MAFFS units per wing.

4.1.1. All crewmembers will be fully certified in MAFFS operations prior to performing operational MAFFS airdrops.

4.1.2. A certified MAFFS Aircraft Commander will occupy the left pilot seat for operational MAFFS airdrops.

4.1.3. Crewmembers non-current for MAFFS will regain currency in accordance with AFI 11-2C-130V1.

4.1.4. Due to the hazardous nature of the mission, personnel other than assigned USAF aircrew members specifically required to accomplish the MAFFS mission, or receive/conduct required MAFFS training, will not fly on MAFFS employment aircraft. Exceptions: USAF Combat Camera staff and other Mission Essential Personnel (MEPs) may fly on missions when accompanied by an MEP approval letter signed by the AEG-WFF/CC. The EAS(P)/MC will advise the MLO when approved personnel other than assigned aircrews are on board.

4.1.4.1. Aircraft needing in-flight maintenance evaluation or live drops for system troubleshooting will not be flown over an actual fire.

4.1.4.2. Familiarization flights of U.S. Government employees (i.e., Lead plane pilots) on MAFFS aircraft during yearly certification training are approved providing the host wing conducts the requisite oversight and documentation IAW AFI 11-401.

4.1.4.3. DV flights will be IAW AFI 11-401.

4.1.4.3.1. Federal mission (Training or Operation) approval authority resides with AEG/CC.

4.1.4.3.2. State mission (Training or Operational) approval request made through state JFHQ (IAW 11-401 ANG SUP 1).

4.1.4.3.3. OCONUS approval request will be IAW AFI 11-401.

**4.2. Crew Duty and Crew Rest Limitations.** Maximum flight duty period (FDP) for MAFFS missions is 16 hours. MAFFS airdrop is a tactical event. Complete all MAFFS drops during the first 12 hours of the FDP. The AEG-WFF/CC may extend the 12-hour drop limit a maximum of 2 hours with concurrence of the Aircraft Commander.

4.2.1. MAFFS airdrops will not be planned to occur beyond 8 cumulative flight hours in any single day. Aircraft will not be launched if it is determined the airdrop portion will occur after the 8th cumulative flight hour. This does not apply to the return portion of flights after all airdrops have been completed. Due to the possibility of unplanned in-flight delays, any sortie that is launched legally may complete the mission as long as daylight restrictions are met.

4.2.2. MAFFS duty includes flight time, ground duty of any kind, and standby or alert status at any location. Deployment/redeployment is not considered MAFFS duty and will not be included in consecutive day totals in [paragraph 4.2.3](#) below unless tasked for airdrops on the same day as arrival to or departure from the deployed location. In all cases, a crew's flight duty period begins upon earliest show time at home station.

4.2.3. Consecutive Duty Day Limitations. During any 14 consecutive days, crewmembers will be off duty for 2 full calendar days. Days off need not be consecutive. This limitation does not include AEG-WFF duties, but does include EAS(P)-WFF/MC duties. For example: A crewmember performs 7 days of MC duties then rolls in to a crew. That person requires 2 days off in 14 days inclusive of their MC duties.

4.2.4. Once the morning briefing is complete, EAS-WFF/MC's may release crews to hotel standby at any time during the day with the concurrence of the MLO. Hotel standby is considered part of the Flight Duty Period.

4.2.5. Safety will not be compromised at any time. The Aircraft Commander may terminate flying activities whenever crew fatigue or any other factor such as heat or visibility (shadows, smoke, thunderstorms etc.) is deemed unsafe to continue.

**4.3. Hours of Operations.** MAFFS will be dispatched to conduct operations over a fire not earlier than 30 minutes before official sunrise and not later than 30 minutes after official sunset. MAFFS airdrops will only be conducted during daylight hours. This does not apply to emergency jettison of retardant, which can be accomplished at any time. Take-offs and recoveries may be accomplished outside of daylight hours. All air tanker bases have official Sunrise/Sunset tables for their local areas.

**4.4. Interfly Agreement.** For federal activations, aircrew interfly between Wings with similar model aircraft is authorized. Additional approval required by AFI 11-2C-130V3 and AFI 11-401 is not required. State activations will follow normal approval levels. All existing aircraft qualifications and MAFFS training and currency requirements apply. EAS(P)-WFF/MC will coordinate with the AEG-WFF and home units to verify individual Go/No-Go criteria is met. Flight authorizations shall accurately reflect each crew composition at all times. Any flight authorization write-in changes will be coordinated with the AEG-WFF and EAS C2 personnel before any mission can depart.

**4.5. Communications.** USFS MAFFS FM radios will be installed in MAFFS aircraft.

4.5.1. FM radio operating manuals are available from the MLO.

4.5.2. If the USFS MAFFS FM radio is inoperative, mission execution may continue, when authorized by the MLO, if a suitable alternate method of communications and flight following is employed.

**4.6. Flight Planning.** For employment missions flown strictly under VFR, flight following procedures listed in [paragraph 6.3](#) satisfy AFI 11-202V3 flight plan filing and search and rescue procedures.

**4.7. Aviation Operational Risk Management (ORM).** ORM does not replace sound judgment nor replace "safety of flight" decisions by the aircraft commander or leadership. In situations where accomplishing the provisions of this Addenda B ORM guidance is impractical, final



mission acceptance authority remains with the aircraft commander. In unique situations, process (not worksheet) variations are authorized as long as the intent of this instruction is followed.

4.7.1. MAFFS ORM Worksheet. The MAFFS ORM Worksheet is the standardized MAFFS ORM tool for risk evaluation, identification, scoring, and acceptance. The office responsible for the current MAFFS ORM Worksheet is HQ AMC/SEF. The most current version of the worksheet and fatigue scoring card can be found on the HQ AMC/SE website link: <https://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=s6925EC134B5F0FB5E044080020E329A9> under the AMC Aviation ORM tab at the Local Unit ORM Worksheets sub tab. MAFFS units may desire periodic adjustments to the worksheet and may submit requested changes to NGB/SEF, AFRC/SEF and AMC/SEF ORM for review, coordination, and posting.

4.7.2. Risk Assessment. Aircraft Commanders will accomplish and document Operational Risk Management (ORM) calculations for their mission prior to the first flight every day using the latest version of the MAFFS ORM Worksheet. Due to the dynamic nature of MAFFS operations, it is not possible to always predict the location of fires, nor the location to which the aircraft will be directed. For clarity, the Weather and Mission sections of the Worksheet refer to risks at the airport of departure and planned recovery. Use best judgment in assessing risk for enroute and airdrop portions of sortie(s). Prior to the start of each crew duty day every crew member will use the Health, Stress, and Fatigue scorecard on page 2 of the MAFFS ORM Worksheet to self-evaluate their current health/stress and fatigue risk level. The aircraft commander will tally the results, select the highest health/stress and fatigue score, and enter this value as the crew's "Human Factor" score.

4.7.2.1. The aircraft commander must sign and date the signature block of the Worksheet for each crew duty day. Any time the mission risk level is above LOW, enter the approval authority's last name (or initials), rank, office symbol and date of approval in the appropriate signature block at the bottom of the worksheet. All signatures and associated coordination must be accomplished before engine start. Document the ORM score in the appropriate block of the MAFFS Drop Log.

4.7.2.2. ORM scores that elevate mission approval to an authority higher than the aircraft commander will be relayed to that authority as soon as practical, but in all cases, approval for mission execution will be received before engine start. Though the MAFFS ORM Worksheet does not need to be re-accomplished for subsequent sorties during the FDP, it is imperative aircraft commanders and crew assess mission complexity, environmental factors impacting aircraft and human performance, and aircraft systems limitations to determine if mission risk is elevated. In the event the ORM mission risk level has increased above the previously accepted level, obtain EAS or AEG approval prior to mission execution. If, after exhausting all communications options, the aircraft commander is unable to contact EAS or EAG leadership, he/she will carefully consider and evaluate the risk associated to the crew, aircraft, the current environment and other factors affecting the mission before continuing.

**4.8. MAFFS Loading/Cargo Restrictions.** The MAFFS unit will be loaded, installed and unloaded under the supervision of a MAFFS qualified loadmaster IAW TO 1C-130A-9. The following restrictions apply:

4.8.1. At least two (recommend four) Emergency Landing Gear Restraint straps will be carried on aircraft loaded with the MAFFS unit.

4.8.2. Maximum cargo weight on the ramp is limited to 1,500 pounds when the MAFFS unit is installed and loaded with any amount of liquid.

4.8.3. MEP's are permitted on MAFFS aircraft during deployment, positioning, and redeployment legs only. Personnel are not permitted between Flight Station 245 and the forward edge of the MAFFS unit during takeoff and landing.

4.8.4. Due to limited availability of seating for the loadmaster, loadmasters will use a MAFFS seat, red troop seat or be seated up front on the flight deck for takeoff and landing. Instructor Loadmasters are required to be seated during takeoff and landing but can be standing during all other phases of flight. Loadmasters will not be in the paratroop door seat for takeoff and landing.

**4.9. MAFFS Tanker Basing.** MAFFS aircraft will reload/service retardant and/or compressed air at air tanker reloading bases/facilities approved IAW the MAFFS Operating Plan.

4.9.1. At the request of the USFS, additional bases/facilities may be approved by the AEG-WFF/CC when surveyed and approved by a trained and qualified MAFFS Instructor Pilot or as directed by the AEG-WFF/CC.

4.9.2. MAFFS retardant reload bases and facilities will be surveyed using an approved MAFFS Airfield Evaluation Checklist to ensure sufficient operational aerial firefighting support capabilities. The survey products will be uploaded to the Supplemental Theater Information File (STIF) section of the AMC Airfield Suitability and Restrictions Report.

4.9.3. The AEG-WFF/CC will ensure a MAFFS Site Survey has been conducted and the airfield is suitable for planned MAFFS operations before approval of any tanker base for MAFFS reload operations.

4.9.4. Waivers for weight bearing capacity or reduced crash fire rescue support will be processed through appropriate MAJCOM Airfield Operations and/or Stan/Eval office for decision by authority previously indicated under Deviations and Waivers.

4.9.5. Aircraft Rescue and Fire Fighting (ARFF) requirements. Operational MAFFS missions are authorized to reload at airfields having ARFF vehicles with at least a 1500 gallon capacity and at least 3 fire fighters. This capability represents the amount of agent needed to execute rapid intervention at one location of the aircraft that is involved in a small fire. At this level, rescue is not expected from inside the aircraft. This level of service represents increased risk/loss potential due to the lack of sufficient agent to maintain control of exterior or interior fire long enough to conduct interior rescue operations. The main MAFFS bed down base(s) will comply with AMCI 11-208 Airlift Tanker Operations requirements. All MAFFS training missions will comply with AMCI 11-208 requirements.

4.9.5.1. For federal or state missions (in NORTHCOM AOR), ARFF waivers will be processed through AMC/A3A for approval by AMC/A3.

4.9.5.2. For OCONUS missions, ARFF waivers processed through COCOM.

4.9.6. MAFFS Tanker Bases are categorized as follows:

4.9.6.1. **R = Reload** – approved for loading retardant using existing pits. Verify personnel in place.

4.9.6.2. **H = Hub** – approved for loading using existing pits. May also be used for overnight and staging of maintenance. Most advantageous for activations.

4.9.6.3. **F = Full Activation** – approved for loading using existing or portable pits provided by the region. May also be used for overnight and staging of maintenance and support. Additionally, this location may be used to set up larger operating facilities.

4.9.7. AEG-WFF/CC will conduct an annual MAFFS tanker base suitability review of airfields intended for use during the fire season. The review, as a minimum, will verify ARFF capabilities and weight bearing capacity. Results will be published in the MAFFS Operating Plan.

## Chapter 5

### GROUND OPERATIONS

**5.1. Servicing Pit Procedures.** Servicing pit assignments, engine start, takeoff sequencing, marshalling and parking instructions will be directed by the Air Tanker Base. Consideration should be given to shut down the outboard engines when ramp congestion is a factor.

5.1.1. If conditions permit, do not start outboard engines until reaching an uncongested area clear of the pit servicing area. If the outboard engines were not started before taxiing out of the pit servicing area, ensure "Starting Engines" and "Before Taxi" checklists are reviewed and fully accomplished before proceeding with the "Before Takeoff" checklist. The aircraft commander will brief taxi clearance and engine stop start duties in the crew brief. After the outboard engines are started, the flight engineer's "Taxi Checks - complete" call indicates the Starting Engines, Before Taxi, and Taxi checks have been completed for all engines.

5.1.2. Pit Operations/Tanker Base operations are IAW the Standardized MAFFS Tanker Base Concept of Operations ([Attachment 3](#)).

5.1.3. A specific individual will be designated as the servicing pit supervisor for each operating pit. The pit supervisor will be easily identifiable by wearing high visibility vest. Duties will include the following:

5.1.3.1. Marshall aircraft into the pit.

5.1.3.2. Stationed in front of the aircraft, act as a safety observer/refueling supervisor.

5.1.3.3. Communicate with aircrew via intercom cord plugged into an external intercom jack, hand signals, or radio on tanker base frequency.

5.1.4. Aircraft will be chocked while being serviced in the pit. A set of aircraft chocks will be available in each pit.

5.1.5. Fuel servicing will be under the direction of the servicing supervisor. If authorized per the MAFFS Operating Plan, concurrent servicing will be in accordance with T.O. 00-25-172.

5.1.6. Aircraft fuel or retardant servicing with engines running is not authorized. **CAUTION:** Consult T.O. 1C-130(K)H-1, Section 5 (OPERATING LIMITATIONS) for minimum fuel quantities, weight, maneuver load factor and airspeed limitations. Ensure maneuver load factors are not exceeded.

5.1.7. Pit personnel will not approach the aircraft until the propellers have stopped turning.

5.1.8. Use of external power should be coordinated with the ramp manager due to congestion and other aircraft's use of the pits. External power should be used when extended pit operations are anticipated, such as during initial load, when directed to "return and hold", or when aircraft or MAFFS unit maintenance is required or when requested by the Aircraft Commander.

5.1.9. Whenever possible after each MAFFS sortie, retardant buildup will be washed free from the empennage using high-pressure water. The aircraft empennage will be thoroughly washed after the last sortie of the day.



5.1.10. Nozzle Assembly Armed indicator. This safety feature is required for MAFFS certification by the USFS. Personnel will not travel aft of the nozzle when the armed light is on. The armed indicator light on the MAFFS nozzle provides a visual warning to personnel that are outside the aircraft.

5.1.11. Wet firing/flushing the system/emergency drops while on the ground/in the pits. Prior to accomplishing any wet fire/ground flushing, coordination will take place with the Tanker Base Manager, Ramp Supervisor, and Military Maintenance. **CAUTION:** MAFFS cabin controls will not be manipulated until an area approximately 150 ft behind the flushing aircraft is cleared of all personnel and loose objects. Another airtanker may be behind the aircraft in normal pit position but it will not have any AGE near it, connected, or operating.

## Chapter 6

### FLIGHT OPERATIONS

**6.1. MAFFS Aircraft Performance.** MAFFS airdrops are frequently performed at high density altitudes, high temperatures and at heavy gross weights. If normal VFR or IFR climb requirements cannot be met with retardant/water on, all takeoff, climb out and departure data will be computed using, as a minimum, maximum continuous power setting of 1010° C TIT. Maximum power may be required. **WARNING:** Aircraft climb performance is significantly reduced due to the high-drag configuration (nozzle drag and 100% flap airdrop configuration). Under certain density altitude conditions, three-engine climb capability may not be available.

6.1.1. Regardless of phase of flight, it is crucial to dump the retardant load either by normal or emergency drop methods anytime aircraft performance is in question. Should maximum climb performance be required, simultaneously jettison retardant, apply maximum power, and decrease drag by setting flaps to 50% or less as soon as possible.

6.1.2. Aircraft Drag Index. The external MAFFS nozzle assembly increases aircraft drag over all flight regimes. For the C-130H (Baseline), as defined in T.O. 1C-130H-1-1, MAFFS equipped aircraft will add +20 for the additional drag from the nozzle.

6.1.3. VFR Departures and Engine-Out departure planning. All-engine minimum climb gradient capability ensures obstacle avoidance along the planned departure route. Engine-out climb gradient capability ensures that in the event of engine failure, the planned departure or emergency return route provides obstacle avoidance. Even when obstacles are not a factor, a MAFFS equipped aircraft, loaded with retardant or water, must be capable of climbing at a rate of at least 200 feet-per-minute (fpm) on three engines at obstacle clearance speed. Crews will use the "TAKE-OFF GROSS WEIGHT LIMITED BY THREE ENGINE CLIMB PERFORMANCE" chart from T.O. 1C-130H-1-1 to calculate the projected climb rate. This climb rate is in lieu of the required climb gradient of 152 feet-per-nautical mile. The following restrictions will be met:

6.1.3.1. MAFFS equipment will be configured for emergency dump during takeoff.

6.1.3.2. A fully operational MAFFS hydraulic system (accumulators charged to 2500 PSI minimum) is required prior to takeoff with liquid onboard.

6.1.3.2.1. A ferry flight is permitted with liquid on board for flight to MAFFS Maintenance Base with <2500 PSI MAFFS hydraulic pressure with normal climb gradient and WFF-AEG/CC concurrence.

6.1.3.3. Aircrew will accomplish detailed engine-out departure planning to avoid high terrain and built-up areas to the maximum extent possible.

6.1.4. IFR Departures and Engine-Out departure planning. If an IFR departure is required, aircrew will comply with normal IFR departure procedures.

6.1.5. Takeoffs and landings may be conducted in IMC.

### 6.2. MAFFS Limitations:

6.2.1. MAFFS airdrops will be flown under the supervision of a MAFFS qualified Leadplane or ASM.

6.2.2. Cabin pressurization is limited to 10 in Hg (5 psid) or less with the MAFFS door plug installed.

6.2.3. Until bonding measures are accomplished, the MAFFS nozzle assembly creates a risk of electrical transfer without dissipation into the aircraft as well as an increased risk of lightning strikes. Avoid thunderstorms by at least 25 nm when any portion of the MAFFS unit extends outside the aircraft.

6.2.4. Operation of galley equipment during MAFFS compressor operations may exceed maximum generator loads.

6.2.5. Operation of the MAFFS compressors in icing conditions may exceed maximum generator loads. If icing conditions are anticipated, ensure Compressor Enable switch is in the OFF position. **WARNING:** Currently, the MAFFS nozzle assembly is not appropriately bonded to the aircraft for lightning strike dissipation. Possible electrical shock to operators could result.

### 6.3. Flight Following.

6.3.1. The goal of flight following is to have contact with all firefighting aircraft at least once every 15 minutes by either Dispatch, Air Traffic Control, Lead Plane, or Air Tactical Group Supervisor (Air-Tac).

6.3.2. Automated Flight Following. 1 AF (AFNORTH)/A3O will provide "Friendly Force Tracker" equipment for automated flight following (AFF) of all MAFFS configured aircraft. Trackers should remain on from departing until returning to home station. Batteries must be changed daily after use to ensure proper operation and signal reception.

6.3.3. Advise the departure tanker base of "rolling" (AFTO 781 takeoff time). After takeoff, contact dispatch and report location, destination fire or base, ETA, souls on board, and fuel in hours. If positive AFF, further calls are not required until departing the fire for return to base. If negative AFF, repeat with previous data every 15 minutes until in contact with Lead or Air-Tac. Terminate flight following upon return to base when in contact with tower or upon landing. Call "Stopped" (AFTO 781 land time) to the ATB radio operator. ATB personnel will relay times to AEG-WFF for GDSS input.

6.3.4. All MAFFS aircraft will enter transponder code of 1255 en-route to, within, and from the Fire Traffic Area (FTA) unless Air Traffic Control (ATC) assigns a different code.

6.3.5. Due to the fluid nature of WFF operations, MAFFS aircrew should be prepared to respond to short notice re-tasking requests through the dispatch system. Re-tasking requests may require operations at a new fire and/or air tanker base. Aircrew will perform a thorough risk assessment prior to accepting any re-tasking.

6.3.5.1. If re-tasked within the same fire complex, the aircrew may proceed without further coordination, as long as ORM remains within aircraft commander line of authority.

6.3.5.2. If re-tasked to a new fire complex and/or ATB within assigned GACC; mission may continue with concurrence of Mission Commander. Dispatch will coordinate.

6.3.5.3. If re-tasking is to fire complex and/or ATB outside of assigned GACC, AEG concurrence is required. Dispatch will coordinate.

**6.4. Fire Traffic Area.** Attachment 4 and the glossary define the Fire Traffic Area (FTA). The FTA utilizes a 5 nm radius from the incident latitude and longitude for initial attack incidents but may grow as the fire grows. Good practice is to consider the FTA boundary being at least 5 nm from the perimeter of the fire.

6.4.1. The FTA can flex vertically depending on operational requirements of participating incident aircraft or by the requirements of the incident itself.

6.4.2. Radio communication for clearance to enter the FTA should be initiated at 12 NM from the incident latitude and longitude.

6.4.2.1. The maximum airspeed in the FTA is 150 KIAS. This does not preclude momentary speeds in excess of 150 for rejoin and formation maneuvering requirements.

6.4.3. Do not penetrate 7 NM from the coordinates or approximate perimeter of the fire, whichever is greater, unless permission is granted by controlling aircraft. If radio contact is not established prior to 7 NM, hold no closer than 7 NM from the fire (normally left turns) until contact is made and permission is granted to enter the FTA.

**6.5. Lead plane procedures.**

6.5.1. The Air Tactical Group Supervisor (ATGS) (commonly referred to as Air-Tac, see glossary) normally makes right hand orbits over the fire. Air-Tac (if on-scene) or the Lead Plane will establish air traffic control over the fire using the following criteria.

6.5.1.1. Air-Tac (if on scene) should be at an altitude above air tankers.

6.5.1.2. The Leadplane Pilot or Aerial Supervision Module (ASM) (see glossary) should remain at or below the air tanker orbit.

6.5.2. The Lead Plane or ASM will:

6.5.2.1. Establish the orbit altitude and location.

6.5.2.2. The orbit point should allow air tankers to observe preceding drops.

6.5.2.3. Establish drop sequence and call for each tanker when ready.

6.5.2.4. Describe the target, drop objective, approach heading, altitude, and suggested escape route and will advise on hazards, altimeter setting, desired coverage level, quantity, and other pertinent factors.

6.5.2.5. Inform air tankers of potential airdrop hazards to include: reduced visibility from smoke, shadows from reduced light, terrain, wind/turbulence, trees/snags, other air traffic, structures such as towers, antennas, power-lines etc.

6.5.2.6. Lead/supervise/direct MAFFS aircraft throughout the approach and airdrop and, if required, give the execution command over the release point.

6.5.2.7. Critique the airdrop (on target, short, right, etc.) if time and conditions permit.

6.5.3. Separation responsibilities. When entering the FTA and joining on the lead plane, use TCAS and visual scanning to acquire lead. Normally lead will acquire the airtanker first. Lead will maintain an altitude separation for de-confliction until they have the airtanker in



sight. When the lead states they have the airtanker in sight, formation separation is lead's responsibility. Once the airtanker states they have lead in sight, separation responsibility is transferred to the airtanker. If the airtanker subsequently loses sight of lead, it is imperative to notify lead so they can either assume separation responsibilities or assign altitude separation if not in sight.

6.5.3.1. Once falling into position behind lead, select NORMAL mode on the IFF to prevent TA/RA calls but to allow lead and other aircraft to monitor the MAFFS mode 3 on their TCAS.

## **6.6. Airdrop Procedures.**

6.6.1. The "SLOWDOWN" checklist must be completed prior to descending from entry altitude. Ensure both pilots and the navigator understand the target area and escape route prior to commencing the drop approach. For multiple passes in the same drop area start with the ONE MINUTE ADVISORY and verbalize the steps as indicated in the checklist. If the system is disarmed between drops, re-accomplish all checklists starting with the AFTER TAKEOFF (LM) and PRE-SLOWDOWN (Cockpit Crew) checklists.

6.6.1.1. The MAFFS system is designed to drop any sequence or number of drops from one full tank (3000 gallons) using one full charge of high pressure air (1200 psi), and normally does not require additional air compression between drops.

6.6.2. A "show-me" run may or may not be required depending on target complexity, previous drops observed, and other factors. MAFFS aircraft loaded with retardant should remain at an altitude well above the Lead Plane performing a show-me run. This altitude should be at pattern altitude for the respective drop location, normally 1,000' AGL above drop altitude as directed by the lead plane pilot.

6.6.2.1. During a show me run configure and maneuver the aircraft so both the pilot and co-pilot can observe the target. This may require flying a different ground track than lead and banking the aircraft as lead approaches the intended target area so both pilots have visibility on the target.

6.6.3. Baseline pattern airspeeds and flap configurations for the actual drop are 140 KIAS/50% flaps on downwind, 130/70% flaps on base, and 120/100% (or 120/70% or less flaps for level drops) flaps on final. These speeds and configurations may, and will be modified as required by the aircraft commander depending on spacing from lead, offset positioning from lead, energy management, turbulence, terrain, etc.

6.6.4. Baseline spacing from lead in the drop pattern should be approximately 1500 ft +/-500 ft (5 to 10 seconds behind lead plane at typical drop pattern airspeeds) but may vary based on conditions and target acquisition. Spacing too close can lead to dangerous situations due to overruns. When able, fly above and offset from lead to maintain energy and allow the lead to keep the MAFFS aircraft in sight as much as possible.

6.6.4.1. It is important for the pilot to keep the target as well as the lead plane in their cross check to anticipate and avoid a situation leading to an overshooting final, and also to facilitate arriving at the start point in drop parameters.

6.6.5. Overrun procedures. Should the MAFFS overrun the lead plane, the MAFFS announces overrun on air to air frequency, the lead plane maneuvers down and left, and the

MAFFS maneuvers up and right to allow the MAFFS pilot to keep the lead plane in sight, regain position, and advise lead. If in a turn (or terrain is a factor), the MAFFS announces overrun, lead maneuvers down and to the inside of the turn (or towards the terrain), and the MAFFS maneuvers up and to the outside of the turn (or away from the terrain).

6.6.6. Ascending drops or escapes and daisy chain drops are prohibited.

6.6.6.1. Drops into rising terrain are acceptable if maintaining level flight at an acceptable terrain clearance altitude throughout the drop (for example with a hard deck MSL altitude given).

6.6.7. Tandem drops are allowed providing the aircraft commander concurs, is in a position to observe the preceding drop, information listed in [paragraph 6.4](#) has been received from the lead plane, and the lead plane can maneuver to observe the drop.

6.6.8. Drop Altitude. 150 ft AGL Minimum.

6.6.8.1. When terrain and conditions permit, target an altitude approximately 150 ft above the fuel. Altitudes between 150 and 200 ft AGL are generally effective but in order to achieve coverage levels 6 and 8, altitudes near 150 ft AGL are required. Above 200 ft AGL the drop pattern begins scalloping and rapidly becomes ineffective.

6.6.9. Minimum drop airspeed is 120 KIAS. Higher speeds may be needed due to turbulence, terrain, turning drops, etc. Ultimately, the aircraft commander determines what airspeed and flap setting is appropriate for each drop.

6.6.10. Terminology on final to the drop:

6.6.10.1. Stating "I have the line" to lead means the MAFFS pilot has the target start/stop points in sight, knows the desired lateral placement of the drop, and has cleared the lead to pull off the line and maneuver to observe the drop.

6.6.10.2. Stating "Hold the line" to lead means the MAFFS pilot needs lead to continue on the drop line in order to assure acquisition of the correct start/stop points or lateral line location.

6.6.11. Leadplane pilots will fly their aircraft over the desired ground track which corrects for wind drift and expect the air tanker to fly that same ground track. If desired otherwise, they will specify or they may direct last minute adjustments to the air tanker via air-to-air radio.

6.6.12. Exit/escape. Upon load clear, or completion of drop if a start/stop drop, simultaneously add power, retract flaps to 50% when able, and begin climb. Do not climb into the Air-Tac or other air tanker altitudes when exiting until clear of the FTA. To enhance traffic avoidance, select TA/RA as soon as possible once separating from lead after the drop.

6.6.13. Avoid application of retardant or foam within 300 ft of waterways (any body of water, lakes, rivers, streams, ponds, etc.).

6.6.14. MAFFS should not land fully loaded. Jettison areas must be designated by the controlling agency. A Leadplane is not needed to jettison and the airtanker should drop at 500 feet or more AGL (150 feet minimum if on an airfield). If the jettison location is designated by the controlling agency to be a fire incident, clearance from the controlling Incident Commander and the controlling aircraft prior to MAFFS entering the Fire Traffic

Area must be obtained and in no case will the drop occur below 500 feet AGL. If a dispatch is cancelled after loading of retardant, the MLO will coordinate with the MC for the offload or jettison the load within 72 hours.

6.6.15. All emergency and inadvertent retardant jettisons will be reported to the MLO. To accomplish this, report it to the EAS-WFF/MC, dispatch, or nearest air tanker base. Include location of the drop and additional pertinent information.

6.6.16. MAFFS crews will document every sortie on the MAFFS Drop Log in [Attachment 5](#). Use one log per local flying day. All takeoff and landing times are local to the actual takeoff and landing location, not the EAS or AEG-WFF locations. Takeoff and landing times and flight times should mirror the 781 times exactly (converted to local). Every block on the Drop Log is required for each sortie except Remarks. Write "UNK" or "N/A" for those blocks where data is not available or applicable. Crews will turn-in their totaled Drop Logs to EAS operations personnel at the end of each day, unless no flying occurred. If a crew is not able to return to the EAS location due to WX, MX, etc, crews should make every effort to FAX the day's completed and totaled Drop Log to the EAS before entering crew rest.

6.6.17. The Loadmaster of each MAFFS flight crew is required to enter in the MAFFS maintenance log each discrepancy experienced during the operation of the system. Each discrepancy will be reported to and corrected by the MAFFS maintenance personnel (FSR) assigned to the mission as soon as practical.

6.6.18. Due to the nature of the mission, fuel tracker information is not required to be submitted to the AMC fuel efficiency office.

6.6.19. Upon demobilization, MAFFS retardant tanks will be flushed two times with water after final retardant load. A ground flush is preferred. With MLO concurrence, an airborne flush may be performed.

TOD D. WOLTERS, Lt Gen, USAF  
Deputy Chief of Staff for Operations

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AMC Modular Airborne Fire Fighting (MAFFS) Concept of Operations, *Phoenix Forest*, Sep 2010

Interagency Agreement for the Provision of Temporary Support During Wildland Firefighting Operations

FSI 12-001, *2012 MAFFS Operating Plan*, 24 February 2012

AFNORTH WFF OPORD 2010

USFS MAFFS II Aerial Delivery Compliance Report, 12 August 2008

T.O. 00-25-172, *Ground Servicing of Aircraft and Static Grounding/Bonding*, 10 February 2011

T.O. 1C-130A-9, *Cargo Loading Manual*, 7 December 2009

T.O. 1C-130A-21, *Equipment Inventory List, C-130 Airplanes*

TO 1C-130xx-1, *C-130 Flight Manual*

AFPD 11-2, *Aircrew Operations*, 19 January 2012

AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, 19 Jan 2012

AFI 11-202, Volume 3, *General Flight Rules*, 22 October 2010

AFI 11-401, *Aviation Management*, 10 December 2010

AFI 11-2C-130V3 Addenda A, *C-130 Operations Configurations/Mission Planning*, 13 August 2009

AFI 11-2C-130V3, *C-130 Operations Procedures*, 23 April 2012

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*

AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*

***Abbreviations and Acronyms***

**AEG-WFF**—Air Expeditionary Group Wildland Fire Fighting

**AEG-WFF/CC**—AEG Wildland Fire Fighting Commander

**AFF**—Automated Flight Following

**AFI**—Air Force Instruction

**ASM**—Aerial Supervision Module

**ATGS**—Air Tactical Group Supervisor (Air-Tac)

**BLM**—Bureau of Land Management



**EAS**—Expeditionary Airlift Squadron

**EAS (P)-WFF/MC**—EAS Wildland Fire Fighting Mission Commander

**FSR**—Field Support Representative (MAFFS Mechanic)

**FTA**—Fire Traffic Area

**HLCO**—Helicopter Coordinator

**IC**—Incident Commander

**ICS**—Incident Command System

**MABM**—MAFFS Airtanker Base Manager

**MAFFS**—Modular Airborne Fire Fighting System

**MC**—Mission Commander

**MLO**—MAFFS Liaison Officer

**MAJCOM**—Major Command (for the purposes of this AFI, includes ANG)

**NIFC**—National Interagency Fire Center

**TCAS**—Traffic Collision Avoidance System

**TFR**—Temporary Flight Restriction

**USFS**—United States Forest Service

**WFF**—Wildland Fire Fighting

### ***Terms***

**Aerial Supervision Module (ASM)**— An ASM is a two person crew functioning as the Lead and ATGS from the same aircraft. The ASM crew is qualified in their respective positions and has received additional training and authorization. An ASM can be utilized as a Lead, ATGS, or both, depending on the needs of incident management personnel. An ASM consists of an Air Tactical Pilot and Air Tactical Supervisor.

**a) Air Tactical Pilot (ATP)**— The ATP is a qualified Leadplane Pilot who has received specialized training and authorization to function as an ASM crewmember. The ATP functions as the Leadplane pilot and utilizes Crew Resource Management (CRM) skills to evaluate and share the incident workload with the ATS.

**b) Air Tactical Supervisor (ATS)**— The ATS is a qualified ATGS who has received specialized training and authorization to function as an ASM crewmember. The ATS is an ATGS who also utilizes CRM to evaluate and share the incident workload with the ATP.

**Air Tactical Group Supervisor (ATGS)**— Commonly called “Air-Tac”. The ATGS manages incident airspace and controls incident air traffic. The ATGS is an airborne firefighter who coordinates, assigns, and evaluates the use of aerial resources in support of incident objectives. -  
--The ATGS is the link between ground personnel and incident aircraft. The ATGS must collaborate with ground personnel to develop and implement tactical and logistical missions on an incident. The ATGS must also work with dispatch staff to coordinate the ordering, assignment, and release of incident aircraft in accordance with the needs of fire management and

incident command personnel. ---On initial attack incidents (type 4 and 5), the ATGS will size-up, prioritize, and coordinate the response of aerial and ground resources until a qualified Incident Commander (IC) arrives. On complex incidents (type 1, 2, or 3), the ATGS will coordinate and prioritize the use of aircraft between several divisions/groups while maintaining communications with operations personnel and aircraft bases (fixed/rotor). ---In the Incident Command System (ICS), the ATGS works for the IC on initial attack and the Operations Section Chief (OSC), Air Operations Branch Director (AOBD), or operational designee on extended attack. The ATGS supervises the ATCO, Leadplane Pilot, and the HLCO positions when activated. The ATGS is qualified to function as an ATCO or HLCO.

**Air Tanker Coordinator (ATCO)**— The ATCO coordinates, directs, and evaluates airtanker operations. The ATCO works under the ATGS. This position is typically activated on complex incidents where several airtankers are assigned. An ATCO can reduce the span of control of the ATGS by managing all the airtankers over an incident. If no ATGS is present, the ATCO works for the IC. **The ATCO is not authorized for low level (below 500' AGL) operations.** (Historically, the ATCO position without the low level capability per this definition is not used. The ATGS normally fills this role. ASM or Leadplane Pilots are the standard for low level lead duties.)

**Daisy Chain Drop**— A retardant drop immediately behind another air tanker. Not allowed in MAFFS operations due to danger of flying into leading aircraft's retardant and inability of the lead aircraft to assess the first drop before the second aircraft drops.

**Fire Traffic Area (FTA)**— An airspace created by a land management agency to encompass a location where aerial firefighting aircraft are operating. The FTA is not part of the National Airspace System although a FTA may be contained within a Temporary Flight Restriction (TFR). The FTA was developed by aerial firefighting personnel to provide a standardized initial attack airspace structure to enhance air traffic separation for all aircraft over wildland fire (or other) incidents. See [Attachment 4](#).

**Helicopter Coordinator (HLCO)**— The HLCO coordinates, directs, and evaluates tactical/logistical helicopter operations. The HLCO works under the ATGS. This position is typically activated on complex incidents where several helicopters are assigned. A HLCO can reduce the span of control of the ATGS by managing all the helicopters over an incident. If no ATGS is present, the HLCO works for the IC, AOBD, or designee.

**Leadplane Pilot (Lead)**— The Leadplane position is identical to the ATCO except the pilot is qualified and authorized for low level operations. A Leadplane Pilot is not recognized in ICS and is classified as an ATCO by default. The low level capabilities of a Leadplane enhance the safety and effectiveness of airtanker operations in the often turbulent, smoky, and congested fire environment.

**MAFFS Operating Plan**— Overarching United States Forestry Service Operating Plan which varies year to year. For example, for 2012 the plan is named FSI 12-001.

**Tandem Drop**— Normally accomplished to extend the line from a previous drop. First air tanker drops behind the lead aircraft. The second air tanker is in position to observe the first drop but is far enough apart to eliminate any possibility of flying through the previous retardant and allow the lead aircraft to assess the first drop, but is also positioned close enough so the lead plane can still monitor the second drop after turning off the first drop line.

**Attachment 2**  
**MAFFS DROP CARD**

**Figure A2.1. MAFFS Drop Card.**

<b>OBST CLNC</b>		<b>FLAP SETTIN</b>	<b>BANK ANGL</b>	<b>BANK ANGLE</b>	<b>M A F F S</b>
		<b>0%</b>			
<b>OBST CLNC NO</b>		<b>50%</b>			
<b>2 ENG VMCA</b>		<b>100%</b>			
<b>GROSS WEIGHT:</b>					

**Attachment 3****STANDARDIZED MAFFS TANKER BASE CONCEPT OF OPERATIONS****MAFFS Pilot Air Tanker Base Guide (General Section: 2011)****Standardized MAFFS Tanker Base Concept of Operations**

References: Interagency Air Tanker Base Operating Guide, MAFFS Operating Plan

The following is a chronological flow for operating the C-130 MAFFS aircraft on an approved USFS, CalFire or Joint Tanker Base Ramp. It is intended to align MAFFS air tanker operations with standard civilian tanker doctrine to ensure seamless integration at select air tanker bases.

**Arrival****Airborne**

- Contact Tanker Base 10 minutes prior to arrival on published VHF Tanker Base (TB) Operations Frequency with intentions and requirements (eg: Load and Return, 3000 gal retardant, 10K fuel)

**Ground Operations**

- Contact Ramp Manager for Pit Assignment on TB Freq prior to taxiing onto TB Ramp
- Park as directed  
Do not enter the ramp pits until outboard propeller rotation has stopped (Exception: C-130J may enter pits with outboards rotating slowly in high wind conditions)

Ramp Manager (Green Vest) can communicate via VHF and may provide marshaling instructions

Parking Tenders (Orange Vest) generally provide marshalling instructions into pits, during periods of heavy tanker traffic, using standard military signals (see Figure 1)

- Call "MAFFS 'X' Stopped" to TB Operations once parking brake is set (X= MAFFS unit)  
TB personnel will relay On & Off times to AEG

Retardant Loading Crew (Blue Vests or Red Shirts) will not approach the aircraft until directed by the Loadmaster, once all propeller rotation has stopped. The loadmaster will ensure the MAFFS system is disarmed prior to clearing the load attendant to approach.

During initial loading operations, A/C will receive an orientation briefing from Air Tanker Base Manager (ATBM) or representative (See Figure 2)

**Departure****Ground Operations**

Engine Start will be primarily done by the loadmaster. If the loadmaster cannot accomplish the duty due to safety, Engine Start will be in coordination with the Parking Tender via Hand Signals:

1) PF holds up three fingers to indicate Start #3

2) Parking Tender will Point to #3 engine and signal when cleared to start

Dispatch will relay any mission changes to the aircrew via TB Operations personnel using the Standard Interagency Dispatch Form

- Call for Taxi from ATC / CTAF a/r, and taxi as directed  
Taxi lights 'on' indicates "ready for taxi" to the Parking Tender
- Call 'MAFFS X Rolling' on TB Dispatch frequency

**Airborne**

- Contact En route Dispatch or National Flight Following a/r



Figure A3.1. Airtanker Base Ramp Operations Hand Signals.



NOTES: \*Extracted from the Interagency Airtanker Operations Guide  
 (\*\*)With the exception of the Hot Brakes signal, all others are consistent with AFI 11-218

### **Tanker Base Pilot Orientation Briefing Guide**

The Tanker Base Pilot Orientation Briefing should be conducted between the MAFFS pilot and Air Tanker Base Manager (ATBM) or representative prior to conducting recurring operations at a particular air tanker base facility. This does not preclude servicing in pits on initial stop, if required.

Most ATBMs publish a local Pilot Orientation Package. As a minimum review the following with the appropriate tanker base representative:

#### **Air Tanker Base Manager**

Conduct a thorough review of local operating procedures, as required, to include the following:

- Base Operations
  - Local Fire Situation
  - Mission planning facilities / capabilities
  - Type Retardant in use
  - Loading / Pumping Equipment Capability / Limitations
  - Aircraft Parking Locations / Procedures
  - Local Hazards: ramps, runway, approach, departure
  - Airspace coordination plan
    - Class B, C, D airspace
    - Noise Abatement Procedures
    - MTRs
    - Ingress / Egress altitudes to / from fires)
    - Standard VFR departure / arrival procedures
    - Prominent Local Landmarks
    - Flight Hazards / TFRs
    - Jettison Areas
  - Pilot Duty Day and Flight Time limitations
  - Engine-run up location / procedures
  - Weather, time of day limitations, or collocated military activity
  - Flight Plans
  - ARFF requirements (minimum 3000 gallons retardant for continuous C-130 ops)
  - Air-Tac / Lead plane procedures and other operations
- Pit Operations (eg unidirectional pits, preferred pits, etc)
  - Fuel / Ground Power requirements
  - Aircraft Washing
  - Marshaling requirements (eg 10' obstruction clearance with wing walker)
- Dispatch Procedures
  - Standard Interagency Dispatch Form
  - GACC and Local Dispatch procedures
  - Flight Following (AFF, En route dispatch frequency, etc)

- C2 – ensure TB personnel pass On(Stopped) and Off(Rolling) times to AEG in Boise, ID
  - ☐ Phone - (208) 422-3422
  - ☐ Fax - (208) 422-3419
- RON requirements
  - Billeting
  - Transportation
  - Morning Brief

Time Ramp Manager / Parking

Tender

- Engine Start coordination (Hand Signals preferred during heavy tanker operations)
- Identify any obstruction hazards and coordinate wing walkers as required (10' clearance)

Load Attendant

- Discharge Nozzle (Pintle) safety issues
- Retardant loading / metering procedures
- Emergency Shutoff procedures / signals

**Figure A3.2. Standard Interagency Dispatch Form.**

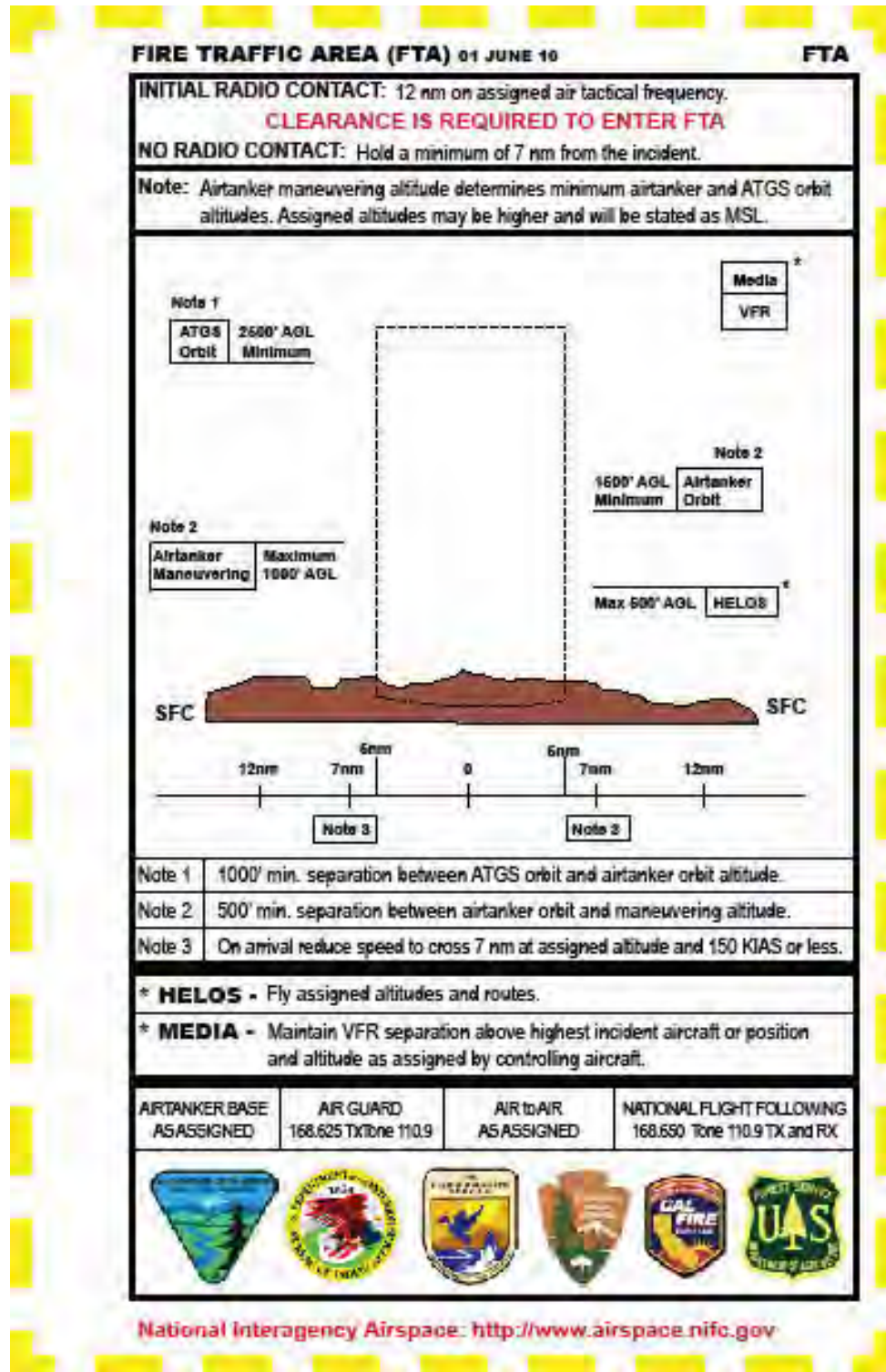
California Interagency Aircraft Dispatch-Tactical Air Operations <del>CAL FIRE</del> EC-106/U.S. Forest Service				
INCIDENT NAME			DATE	TIME
ORDER #			P #	
DESCRIPTIVE LOCATION				
RESPONSE AREA	SECTION	TOWNSHIP	RANGE	MERIDIAN
LATITUDE (Degrees, Decimal Minutes)			LONGITUDE (Degrees, Decimal Minutes)	
BEARING	DISTANCE		FROM	
AIR CONTACT IDENTIFIER			AIR TACTICS FREQ. (FMD, FIXED)	
			Freq. Name	
HELICOPTER 'VICTOR' FREQ. (AM)			AIR to GROUND FREQ.	
			Freq. Name	

<b>GROUND CONTACT IDENTIFIER</b>		<b>COMMAND/ECC FREQ.</b>
		ECC Name
<b>GROUND TACTICS FREQ. (FM)</b>		<b>RELOAD BASE</b>
Freq Name:		
<b>OTHER A/C</b>		
<b>HAZARDS</b>		
<b>REQUEST NUMBERS</b>	<b>A3</b>	<b>A</b>
<b>A1</b>	<b>A4</b>	<b>A</b>
<b>A2</b>	<b>A5</b>	<b>A</b>

## Attachment 4

### FIRE TRAFFIC AREA

Figure A4.1. Fire Traffic Area.





**Figure A5.1. MAFFS Drop Log.**

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## Comments on MAFFS Command and Control

As a practical matter, the dual-status commander operates in support of NIFC, a Federal agency, on behalf of NORTHCOM, specifically NC's air commander, COMAFNORTH, which handles the foundation for legal authority under T10, DSCA and other statutes. The legal foundation for directing the operating T32 forces comes from the agreement of governors to designate the candidates for dual-status command and delegate selection from that list to NORTHCOM. Once trained, available and selected, the dual-status commander becomes the terminus of an unbroken chain of agreements (administrative law) stemming from statute that conveys legality to direct T32 forces. It's sort of a giant EMAC. The "unbroken" chain on the Federal side runs from Section 164, Title 10 USC through DoDD 5100.01 and JP 1 to CDRNORTHCOM (statute through administrative law) to convey legality for whatever authority a commander is given; in this case, CDRNORTHCOM, a commander of a combatant command established by SecDef and promulgated in the Unified Command Plan, who exercises the authority of "Combatant Command."

## Conveying Legitimacy for Exercise of Military Authorities

If we decouple the argument from a discussion of which authority and who has it in terms of chain of command (who is the bigger dog?), and focus on where the legitimacy comes from and why, we'll be able to work command and control (command arrangements and relationships) issues more easily. It gets us out of the mire of arguing the demerits of a dual-status commander responding to two "chains of command." There is, in reality, only one chain of command, but the dual-hat receives his authority and consequent legitimacy from two sources. It will also allow us to talk intelligently about a "combined" or "integrated" staff for the dual-hat composed of active duty (T10) and NG (T32 or SAD); effectively a "classic associate" organizational arrangement already proven.

**Pages 120-129 have been withheld in their  
entirety pursuant to  
5 U.S.C. § 552 (b)(5)**

**(Draft Command Arrangement  
Agreement)**

**It is unreasonable to segregate any  
portions within this withholding for  
release.**

**From:** [H&A](#)  
**To:** (b) (6) [CIV NG NGB \(US\); \(b\) \(6\) Civ USAF ANG NGB/A5D Kruse](#)  
**Subject:** Friday  
**Date:** Wednesday, May 20, 2015 1:15:12 AM

---

(b) (6), (b) (6), do you have any time Friday afternoon to meet? Need some advice on the maffs corp issue.

Mike

Sent from my iPhone

**From:** (b) (6) -CIV NG NGB (US)  
**To:** (b) (6) -Lt Col USAF NGB A5 (US)  
**Subject:** FW: C-130J Improved MAFFS Phase I (UNCLASSIFIED)  
**Date:** Thursday, September 17, 2015 10:31:00 AM  
**Attachments:** [USFS C-130J Improved MAFFS Phase I SOW RevA \(A5 Comments\).docx](#)

---

(b) (6), DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
NIPR (b) (6) @mail mil  
SIPR (b) (6) @mail.smil mil

-----Original Message-----

**From:** (b) (6) Maj USAF ANG NGB/A5RM  
**Sent:** Friday, January 17, 2014 11:14 AM  
**To:** (b) (6) @fs.fed.us  
**Cc:** (b) (6) Civ USAF ANG NGB/A3M  
**Subject:** RE: C-130J Improved MAFFS Phase I (UNCLASSIFIED)

(b) (6),

Attached is MAFFS SOW with A5 comments.

(b) (6)

(b) (6), Maj, USAF  
MAF Requirements Officer  
NGB/A5RM  
COMM: 240-612-7803  
DSN: 612-7803  
BB: (b) (6)

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-----Original Message-----

**From:** (b) (6) Civ USAF ANG NGB/A3M  
**Sent:** Thursday, January 16, 2014 11:36 AM  
**To:** (b) (6) Maj USAF ANG NGB/A5RM  
**Subject:** Fw: C-130J Improved MAFFS Phase I (UNCLASSIFIED)



(b) (6), GS  
NBG A3 MAFFS Program Manager  
ALCF/CRG FAM  
W 240-612-9304  
BB (b) (6)  
(b) (6)@ang.af mil

----- Original Message -----

From: (b) (6) -FS [mailto:(b) (6)@fs.fed.us]  
Sent: Wednesday, January 15, 2014 04:44 PM  
To: (b) (6) (b) (6)@fs.fed.us>; (b) (6) Civ USAF ANG  
NGB/A3M; Elmy, Gilbert A -FS <gelmy@fs.fed.us>  
Subject: Fw: C-130J Improved MAFFS Phase I (UNCLASSIFIED)

All,

Please review by mid next week. If there are no big changes I'll get it over to (b) (6) and work the mod.

(b) (6)  
Airworthiness Branch Chief  
Fire and Aviation Management  
U.S. Forest Service  
Washington Office West  
208-387-5617 Office  
(b) (6) Cell  
208-387-5735 Fax

----- Original Message -----

From: (b) (6) CIV (US) [mailto:(b) (6)@mail.mil]  
Sent: Wednesday, January 15, 2014 02:22 PM  
To: (b) (6) -FS  
Cc: (b) (6) CIV (US) (b) (6)@mail.mil>  
Subject: C-130J Improved MAFFS Phase I (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

(b) (6),

Attached you will find the current SOW that will be put on contract for the C-130J Improved MAFFS Effort Phase I. The Period of Performance for Phase I will be eight (8) months. This will likely be awarded toward the end of February and extend through October. The current funding agreement (attached) expires 31 March 2013 and will need to be updated to cover the new Period of Performance. If you have any questions feel free to contact myself or Ron.

Thank you,

(b) (6)  
Electrical Engineer, GPL  
Prototype Integration Facility (PIF)  
Phone: 256.313.0337 (O) (b) (6) (C)  
Email: (b) (6)@mail.mil

Classification: UNCLASSIFIED  
Caveats: NONE

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**Statement of Work (SOW)**

**C-130J Improved Modular Airborne Fire Fighting System**

**Phase I**

**Revision A**

**19 December 2013**

**Document Revision History**

<b>Revision</b>	<b>Date</b>	<b>Description</b>
-	9 December 13	Initial Release
A	19 December 2013	Updated SOW para on DD1423s and removed SOW para reference from DSL

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## 1 SCOPE

This Statement of Work (SOW) defines the effort required to improve the existing Modular Airborne Fire Fighting System to be used on the C-130J (primary) and H (secondary) aircraft in support of the U.S. Forest Service (USFS) and the National Guard Bureau (NGBA3). The USFS and the NGB cooperate on the Modular Airborne Fire Fighting System (MAFFS) program which provides surge retardant delivering capacity for wildland firefighting. This system will replace the MAFFS 2 systems currently in use. The Next gen system will also be pressurized and should support an increased payload of 4000 gallons of retardant which can be achieved through weight reduction and will require evaluation to ensure safe operations and continued airworthiness when the NGB aircraft are used as Large Airtankers. The requirement contained herein is for the development of an improved MAFFS to be used on NGB C-130J and H (operational restrictions and transition kit may be required) aircraft.

The C-130J and H Improved MAFFS Development Effort - Phase I will include a clear definition of all retardant delivery application requirements *System Requirements Review (SRR)*, and a preliminary conceptual design of the system to be developed (PDR). Phase II portion includes a Government identified PDR exit criteria resolution, a Critical Design Review (CDR), procurement, manufacturing, test and Interagency Airtanker Board (IAB) Certification of one prototype, one validation, and one verification system, a Level III Technical Data Package (TDP) and tech data development. Phase II portion also includes the development of Take-off and Landing Data (TOLD) Application.

Commented [WPH1]: PDR is missing the PDR exit criteria?

## 2 APPLICABLE DOCUMENTS

Applicable top level documents are contained in Appendix A, Document Summary List (DSL), by number, title and date. The document versions specified on the DSL take precedence over the generic references (without revision letters) cited in the SOW.

## 3 REQUIREMENTS

### Detailed Tasks

#### 3.1 Structural Analysis

The Contractor shall perform a strength loads analysis to determine the impact of any system modification IAW DI-GDRQ-80198 to the Baseline C-130J and H to include the MAFFS improvements. For example, the current MAFFS 2 system has the retardant exiting through the left paratroop door. The Contractor shall identify current (unmodified aircraft) and new Principle Structural Elements (PSE) created as a result of the modification if any. The Contractor shall design the C-130J and H MAFFS to meet a minimum 10,000 Ground-Air-Ground (GAG) cycle service life, with structural inspections to coincide with aircraft scheduled inspections, based on the Airtanker Loads Spectrum. A minimum analytical damage tolerance life of 20,000 GAG cycle shall be demonstrated.

#### 3.2 Stress Analysis

The Contractor shall perform a Stress Analysis for all PSE's and correlate OEM stress analysis to the firefighting role. The Stress Analysis shall demonstrate a positive margin of safety for the design. The Contractor shall provide the results of the Stress Analysis to the Government IAW DI-MISC-80508.

### 3.3 Weight and Balance

The Contractor shall prepare a delta weight and balance analysis depicting the impacts to the Baseline C-130J and H to include the MAFFS improvements/modification IAW DI-MGMT-81501.

### 3.4 Electrical Loads Analysis (ELA)

The Contractor shall develop and deliver a delta ELA depicting impacts to the Baseline C-130J and H to include the MAFFS improvements/modification to validate adequate circuit breaker protection and adequate wire sizing IAW DI-MISC-80508.

### 3.5 Interagency Airtanker Board (IAB) Certification Plan

The Contractor shall develop an IAB Certification Plan for the airworthiness certification of the modified C-130J and H MAFFS. The Contractor shall prepare an IAB Certification Plan. An overall test plan shall be developed IAW DI-SESS-81704 to show how the requirements of the IAB will be demonstrated and documented. This test plan shall cover all of the MIL-STD, MIL-SPEC and IAB requirements.

### 3.6 Software Development and Certification Plan

The Contractor shall develop a Software Development and Certification Plan IAW DI-IPSC-81427 that includes a software requirement specification analysis for the design of a software interface that will control and operate the delivery system in accordance with the IAB Charter that can be found at <http://www.fs.fed.us/t-d/pubs/pdf/98571803.pdf>.

### 3.7 Design Reviews

#### 3.7.1 Systems Requirements Review (SRR)

The Contractor shall conduct a Systems Requirements Review (SRR). The Contractor shall perform systems engineering to assess requirements and demonstrate a solution is achievable within cost, schedule and performance parameters. Any issues that could impede performance of this effort with associated resolution paths shall also be identified. The Contractor shall provide a copy of their briefing materials per DI-ADMN-81373 and deliver a record of meeting IAW DI-ADMN-81505.

#### SRR Entrance Requirements:

The Contractor shall assess and refine system requirements specified in Table 1 and Table 2 for completeness in the evaluation of the improved MAFFS design concept.

Modular Airborne Fire Fighting System (MAFFS) – a self-contained unit which can be loaded onto the C-130J and H aircraft for deployment of fire retardant and firefighting. A MAFFS typically consists of a series of pressurized fire retardant tanks with specified a total capacity,

TABLE 1: Improved MAFFS Requirements

Evaluation Criteria	Pass / Fail	Target (with units)	Relative Importance(%)
IAB (1200 GPS Flow rates, 2 second door response, divide the load equally into 25% increments, etc)	Yes		15 00%
Maintaining multimission capability and airworthiness certification	Yes		15 00%
Payload	Yes	1600 min	15 00%
Payload (Weighted)(Could this be a ratio that will express the extra payload above the 1600 vs the impact of any fixed provisions?)	No	> 1800	15 00%
Autonomous operation when installed (No ground compressor required)	Yes		8 00%
System complexity of design (proven concept, airframe impact and system integration)	No		8 00%
System complexity and maintainability (system component interchangeability (jigged not handcrafted) , COTS components where possible)	No		8 00%
RDS Removal and Installation Time	No	<12 MAFFS, <24 IGFS & EC	8 00%
Material/Development cost	Yes		8 00%

TABLE 2: Secondary Requirements

Draft Criteria
Meet IAB
Meets Minimum deliverable Payload
Maximized Payload (4000 lbs)
Deconfigurable (system is removable) within 8 hours
Controller compensates for ground speed
Minimal impact on structural life
Minimize invasiveness on aircraft structure
Ease of tank system maintenance
Ease of deconfiguration (in man hours)
Use of COTS components
Estimated cost of production of the designs
Ease of production (composite vs. metal)
Type of tank (composite vs. metal)
Technological integration / adaptation (can it become smarter)
Ground support equipment for the tank system or modified aircraft
System able to be tested independent of aircraft or on the ground
Ease of integration into aircraft systems (hydraulic, pneumatic, electrical)
Leak sensing and low point drains
Additional data collection for the Airtanker mission
EMI survey
Maximizes trade-off of airspeed while loaded for a higher zero fuel weight

#### SRR Exit Requirements:

The Contractor shall have researched and evaluated the findings in Table 1 (Improved MAFFS Requirements) and Table 2 (Secondary Requirements), and shall develop a final weighted system matrix for the evaluation of the final design concept IAW DI-MISC-80508.

The Contractor shall provide a report that based on trade off requirements points to the most rational approach to optimum payload and ground delivery while maintaining system certification. DI-MISC-80508

#### 3.7.2 Preliminary Design Review (PDR)

The Contractor shall host a Preliminary Design Review (PDR). The Contractor shall provide a copy of their PDR presentation materials per DI-ADMN-81373 and deliver a record of meeting. DI-ADMN-81505

#### PDR Entrance Requirements:

All requirements and documents listed below shall be provided by the contractor prior to entrance into PDR.

- Conceptual Design Models
- IAB Certification Plan – IAW DI-SESS-81704
- Software Development and Certification Plan – IAW DI-IPSC-81427
- Delivery of PDR Presentation Materials – IAW DI-ADMN-81373
- Weight and Balance – IAW DI-MGMT-81501
- Electrical Load Analysis (ELA) – IAW DI-MISC-80508
- Structural Analysis – DI-GDRQ-80198
- Stress Analysis – IAW DI-MISC-80508

#### PDR Presentation Materials:

The Contractor shall cover the topics below during the PDR briefing:

- a. Proposed design iterations and trade-offs required for maximizing performance while facilitating ease of integration and production.
- b. An overview of the MAFFS: design, operation, software, and proposed system modifications.
- c. Review of material allowable and material content for each configuration item.
- d. Review of the IMS with identification of critical path tasks
- e. Status of Risk Management including risks identified, mitigation plans and method of tracking/reporting risks.
- f. Proposed IAB Certification Plan
- h. Presentation of conceptual models and design theory for the C-130H/J.
- i. Review of internal and external interface requirements.



~~3.7 The PDR shall result in agreed upon direction for the design and c~~Comprehensive list of action items that must be resolved prior ~~based on PDR that need to be closed during Phase II prior~~ to entering CDR.

### 3.8 Program Management

#### 3.8.1 Kick-Off Meeting

The Contractor shall conduct a kick-off meeting at a location local to the Huntsville, Alabama facility. Prior to the kick-off meeting, the Contractor shall provide a copy of their Kick-Off presentation materials with the Prototype Integration Facility (PIF) Contracting Officer Representative (COR) IAW DI-ADMN-81373. The Contractor shall identify its project lead for this requirement at the kick-off meeting. All Contractor personnel responsible for aspects of this task shall be present to discuss their approach to successful completion of this task. The Contractor shall prepare Kickoff Meeting minutes IAW DI-ADMN-81505.

#### 3.8.2 Integrated Master Schedule (IMS)

The Contractor shall develop, maintain, and execute to an IMS that includes an estimated schedule for RDS development, as well as, all program meetings and other milestones. The schedule shall include necessary elements, durations, start and finish dates to successfully complete the effort IAW DI-MGMT-81861.

#### 3.8.3 Risk Management

The Contractor shall implement and execute a risk management program to identify and mitigate program risks in the areas of cost, schedule, performance and supportability to include definition of risk measurements and objectives, identification, classification, and reporting for all cost, schedule, and technical performance risks. Risk management shall be implemented at all program and system levels. The Contractor shall make available risk assessments and risk mitigation status through the Integrated Product Team (IPT) process, reviews, presentation material, and meetings.

#### 3.8.4 Contractor Work Breakdown Structure (CWBS)

The Contractor shall develop and deliver a detailed CWBS IAW DI-MGMT-81334.

#### 3.8.5 Integrated Product Teams (IPTs)

The Contractor shall conduct IPTs to discuss cost, schedule, and technical performance at the Contractor's facility unless otherwise arranged in advance with the PIF COR. The IPTs shall consist of the Prime Contractor, relevant Subcontractor(s), USFS representatives, NGB representatives and the PIF Government Product Lead (GPL) with ad hoc participation by functional area representatives as required by the IPT. The Contractor shall prepare a record of all meeting minutes IAW DI-ADMN-81505.

### 3.8.6 Performance and Cost Reports.

The Contractor shall utilize effective cost control processes to establish and meet cost targets for this effort. The Contractor shall prepare a contract cost status report (CCSR) providing current status and projected requirements of funds and work completion IAW DI-FNCL-80912. The Contractor shall collect and report the cost data (budgeted cost and actual cost) for the current month as well as cumulatively, provide a BAC and an initial Estimate at Completion/ Latest Revised Estimate (EAC/LRE) at the WBS level. The Contractor shall update LRE ensure end of project cost status is reflected. The CCSR will also contain percent spent cumulative to date. The cost variance thresholds of +/- 10% will be applied to Current, Cumulative to Date and At Completion variances and shall contain a written justification when a variance outside of the threshold has been identified.

### 3.9 General Requirements

### 3.10 Configuration Management

The Contractor shall maintain Configuration Management control IAW the Contractor's established CM procedures. The Contractor shall impose and enforce these CM requirements on all Subcontractors and vendors.

### 3.11 Contractor Manpower Reporting.

The Contractor shall comply with Contractor Manpower Reporting requirements as set forth in the IDIQ Contract Statement of Work, paragraph 8.0

### 3.12 Wide Area Workflow

The Contractor shall notify the PIF COR prior to shipping any and all hardware deliverables and for inspection and acceptance purposes and shall provide Government Quality Assurance access to the product. The Contractor shall submit receiving reports using Wide Area Work Flow (WAWF) in one of the electronic formats that WAWF accepts. A "receiving report" is the data required by the clause at DFARS 252.246-7000, entitled "Material Inspection and Receiving Report."

## **4 GOVERNMENT FURNISHED EQUIPMENT/PROPERTY/INFORMATION**

The Government will provide the following:

- a) One (1) each MAFFS for engineering surveys
- b) One (1) each Level II TDP drawing package and any models/CAD/Soildworks files of current MAFFS and any material data
- c) Available analysis and data as required to assist with qualification by similarity
- d) Access to C-130 J and H aircraft for engineering site surveys as required
- e) Defined specifications of improved systems

- f) Comprehensive explanation of problems and shortfalls of current MAFFS
- g) Transition Kit and all technical data (drawings, models, manuals, etc..)
- h) Ground support equipment for the MAFFS II
- i) Trailer technical data for the MAFFS II – drawings, models, manuals, etc...)
- j) airtanker load spectrum data
- k) Software code and manual

**APPENDIX A DOCUMENT SUMMARY LIST (DSL)**

<b>Document</b>	<b>Title</b>	<b>Date/Category</b>
DI-ADMN-81373 Data Item No. A005	Presentation Material SRR	10/1/1993 Category 1
DI-ADMN-81373 Data Item No. A005	Presentation Material PDR	10/1/1993 Category 1
DI-ADMN-81373 Data Item No. A005	Presentation Material Kick Off Meeting	10/1/1993 Category 1
DI-ADMN-81505 Data Item No. A006	Report, Record of Meeting/Minutes Kick-Off Meeting	11/20/1995 Category 1
DI-ADMN-81505 Data Item No. A006	Report, Record of Meeting/Minutes SRR	11/20/1995 Category 1
DI-ADMN-81505 Data Item No. A006	Report, Record of Meeting/Minutes PDR	11/20/1995 Category 1
DI-ADMN-81505 Data Item No. A006	Report, Record of Meeting/Minutes IPT	11/20/1995 Category 1
DI-FNCL-80912/T Omit 10.2.1 Data Item No. A032	Performance and Cost Report	10/6/1989 Category 1
DI-GDRQ-80198A Data Item No. A033	Internal Loads and Static Strength Analysis Report	7/31/1995 Category 1
DI-IPSC-81427A Data Item No. A042	Software Development Plan (SDP)	1/10/2000 Category 1
DI-MGMT-81334D Data Item No. A074	Contract Work Breakdown Structure	5/18/2011 Category 1
DI-MGMT-81501A Data Item No. A079	Weight and Balance Report for Aircraft	9/27/2007 Category 1
DI-MISC-80508B Data Item No. A085	Technical Report - Study/Services Stress Analysis	11/14/2006 Category 1
DI-MISC-80508B Data Item No. A085	Technical Report - Study/Services Electrical Loads Analysis (ELA)	11/14/2006 Category 1

DI-MISC-80508B Data Item No. A085	Technical Report - Study/Services System Requirements Matrix	11/14/2006 Category 1
DI-SESS-81704 Data Item No. A164	Test Plans/Test Procedures IAB Certification Plan	11/22/06 Category 1
DI-MGMT-81861/T See DD 1423 for Tailoring Information  Data Item No. A166	Integrated Program Management Report (IPMR)/Integrated Master Schedule (IMS)	6/20/2012  Category I
<a href="http://www.fs.fed.us/t-d/pubs/pdf/98571803.pdf">http://www.fs.fed.us/t- d/pubs/pdf/98571803.pdf</a>	IAB Charter, Criteria, and Forms	



APPENDIX B CONTRACT DATA REQUIREMENTS LIST (CDRLs)

CONTRACT DATA REQUIREMENTS LIST (1 DATA ITEM)				FORM APPROVED OMB NO. 0704-0188	
<small>Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for Contract/PR No. listed in Block E.</small>					
A. CONTRACT LINE ITEM NO.		B. EXHIBIT	C. CATEGORY:		
		A	TDP TM OTHER ADMN		
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS	
1. DATA ITEM NO.	2. TITLE OF DATA ITEM		3. SUBTITLE		
A005	Presentation Material		SRR		
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE	
DI-ADMIN-81373		SOW Para- 3.7.1		RDMR-SEN	
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT	B	ONE	SEE BLOCK 16	b. COPIES	
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	Draft Final
N/A	N/A	N/A	N/A	RDMR-SEN	0 1 0
16. REMARKS:					
<p>Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.</p> <p>Block 12: 5 days prior to event.</p> <p>Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.</p>					
				15. TOTAL	
				0 1 0	
G. PREPARED BY		H. DATE	I. APPROVED BY		J. DATE
(b) (6)		12/9/13	(b) (6)		12/9/13

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE
NSP

CONTRACT DATA REQUIREMENTS LIST				FORM APPROVED OMB NO. 0704-0188	
(1 DATA ITEM)					
Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202 4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for Contract/PR No. listed in Block E.					
A. CONTRACT LINE ITEM NO.		B. EXHIBIT	C. CATEGORY:		
		A	TDP    TM    OTHER <b>ADMN</b>		
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS	
1. DATA ITEM NO.	2. TITLE OF DATA ITEM		3. SUBTITLE		
A005	Presentation Material		PDR		
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE	
DI-ADMIN-81373		SOW Para- 3.7.2		RDMR-SEN	
7. DO 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT	B	ONE	SEE BLOCK 16	b. COPIES	
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	Draft    Final
N/A		N/A	N/A		Reg    Repro
16. REMARKS:				15. TOTAL	
<p>Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.</p> <p>Block 12: 5 days prior to event.</p> <p>Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.</p>				<p>RDMR-SEN    0    1    0</p> <p>0    1    0</p>	
G. PREPARED BY		H. DATE	I. APPROVED BY		J. DATE
(b) (6)		12/9/13	(b) (6)		12/9/13

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE
NSP

CONTRACT DATA REQUIREMENTS LIST				FORM APPROVED OMB NO. 0704-0188	
(1 DATA ITEM)					
Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for Contract/PR No. listed in Block E.					
A. CONTRACT LINE ITEM NO.		B. EXHIBIT	C. CATEGORY:		
		A	TDP    TM    OTHER    ADMN		
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS	
1. DATA ITEM NO.	2. TITLE OF DATA ITEM		3. SUBTITLE		
A005	Presentation Material		Kick-Off Meeting		
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE	
DI-ADMIN-81373		SOW Para- 3.8.1		RDMR-SEN	
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT		ONE	SEE BLOCK 16		
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES
N/A	B	N/A	N/A		Draft    Final
16. REMARKS:					Reg    Repro
<p>Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.</p> <p>Block 12: 2 days prior to event.</p> <p>Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.</p>				RDMR-SEN	0    1    0
15. TOTAL				0	1    0
G. PREPARED BY		H. DATE	I. APPROVED BY		J. DATE
(b) (6)		12/9/13	(b) (6)		12/9/13

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A. CONTRACT LINE ITEM NO.		B. EXHIBIT	C. CATEGORY:		
		A	TDP    TM    OTHER <b>ADMN</b>		
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
<b>C-130H/J RDS DEVELOPMENT</b>		<b>W58RGZ-12-D-0089</b>		<b>RDS</b>	
1. DATA ITEM NO.	2. TITLE OF DATA ITEM			3. SUBTITLE	
A006	Report, Record of Meetings			Kick-Off Meeting	
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE	
DI-ADMIN-81505		SOW Para- 3.8.1		RDMR-SEN	
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT	B	ONE	SEE BLOCK 16	b. COPIES	
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	
N/A		N/A	N/A		
16. REMARKS:					
<p>Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.</p> <p>Block 12: 10 working days after event.</p> <p>Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.</p>					
				15. TOTAL	
				0	1
				0	0
G. PREPARED BY		H. DATE	I. APPROVED BY		J. DATE
(b) (6)		12/9/13	(b) (6)		12/9/13

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A. CONTRACT LINE ITEM NO.		B. EXHIBIT		C. CATEGORY:	
		A		TDP    TM    OTHER    ADMN	
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS	
1. DATA ITEM NO.	2. TITLE OF DATA ITEM			3. SUBTITLE	
A006	Report, Record of Meetings			SRR	
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE	
DI-ADMIN-81505		SOW Para- 3.7.1		RDMR-SEN	
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT		ONE/R	SEE BLOCK 16		
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES
A	B	N/A	N/A		
16. REMARKS:					
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15. TOTAL				0	1
G. PREPARED BY		H. DATE		J. DATE	
(b) (6)		12/9/13		12/9/13	

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A. CONTRACT LINE ITEM NO.		B. EXHIBIT		C. CATEGORY:											
		A		TDP    TM    OTHER    ADMN											
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR											
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS											
1. DATA ITEM NO.	2. TITLE OF DATA ITEM			3. SUBTITLE											
A006	Report, Record of Meetings			PDR											
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE											
DI-ADMIN-81505		SOW Para- 3.7.2		RDMR-SEN											
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION											
LT	B	ONE	SEE BLOCK 16	b. COPIES											
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION												
N/A		N/A	N/A	a. ADDRESSEE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="width: 10%;">Draft</td> <td style="width: 10%;">Final</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Reg</td> <td>Repro</td> </tr> </table>		Draft	Final						Reg	Repro
	Draft	Final													
			Reg	Repro											
16. REMARKS:  Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.  Block 12: 10 working days after event.  Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.				RDMR-SEN	0    1    0										
				15. <span style="float: right;">TOTAL</span>											
G. PREPARED BY		H. DATE	I. APPROVED BY	J. DATE											
(b) (6)		12/9/13	(b) (6)	12/9/13											

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE
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CONTRACT DATA REQUIREMENTS LIST				FORM APPROVED OMB NO. 0704-0188	
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A. CONTRACT LINE ITEM NO.		B. EXHIBIT		C. CATEGORY:	
		A		TDP    TM    OTHER    ADMN	
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS	
1. DATA ITEM NO. A006		2. TITLE OF DATA ITEM Report, Record of Meetings		3. SUBTITLE IPT	
4. AUTHORITY (Data Acquisition Document No.) DI-ADMIN-81505		5. CONTRACT REFERENCE SOW Para- 3.8.5		6. REQUIRING OFFICE RDMR-SEN	
7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED B	10. FREQUENCY SEE BLOCK 16	12. DATE OF FIRST SUBMISSION SEE BLOCK 16	14. DISTRIBUTION	
8. APP CODE N/A		11. AS OF DATE N/A	13. DATE OF SUBSEQUENT SUBMISSION SEE BLOCK 16	a. ADDRESSEE	b. COPIES
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15. TOTAL				0	1
G. PREPARED BY (b) (6)		H. DATE 12/9/13		I. APPROVED BY (b) (6)	
				J. DATE 12/9/13	

17. PRICE GROUP
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A. CONTRACT LINE ITEM NO.		B. EXHIBIT	C. CATEGORY:		
		A	TDP    TM    OTHER    FNCL		
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS	
1. DATA ITEM NO.	2. TITLE OF DATA ITEM			3. SUBTITLE	
A032	Performance and Cost Report				
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE	
DI-FNCL-80912/T		SOW Para- 3 8.6		RDMR-SEN	
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT		MTHLY	SEE ITEM 16		
8. APP CODE	B	11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES
N/A		0	15 DARP		
16. REMARKS:  OMIT requirement 10 2.1  Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.  Block 12: First submission is due 15 days after the end of the first full month.  Block 14: One copy shall be submitted via email in Excel format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.					
15. TOTAL				0	1    0
G. PREPARED BY		H. DATE	I. APPROVED BY		J. DATE
(b) (6)		12/9/13	(b) (6)		12/9/13

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A. CONTRACT LINE ITEM NO.		B. EXHIBIT		C. CATEGORY:	
		A		TDP    TM    OTHER <b>GDRQ</b>	
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS	
1. DATA ITEM NO.	2. TITLE OF DATA ITEM			3. SUBTITLE	
A033	Internal Loads and Static Strength Analysis Report				
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE	
DI-GDRQ-80198A		SOW Para- 3.1, 3.7.2		RDMR-SEN	
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT	B	ONE	SEE ITEM 16		
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	
A		N/A	N/A		
16. REMARKS:  Block 8: Government will approve/disapprove within 30 days after receipt. If disapproved, the Contractor shall correct and re-submit within 20 days after notification.  Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.  Block 12: In accordance with approved IMS.  Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.				RDMR-SEN	
				b. COPIES	
				Draft	Final
				Reg	Repro
				0	1    0
				15. TOTAL	
				0	1    0
G. PREPARED BY		H. DATE	I. APPROVED BY		J. DATE
(b) (6)		12/9/13	(b) (6)		12/9/13

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CONTRACT DATA REQUIREMENTS LIST (1 Data Item)				Form Approved OMB No. 0704-0188	
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A. CONTRACT LINE ITEM NO.		B. EXHIBIT	C. CATEGORY		
		A	TDP TM OTHER <b>IPSC</b>		
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR	
		W58RGZ-12-D-0089		RDS	
1. DATA ITEM NO.	2. TITLE OF DATA ITEM		3. SUBTITLE		
A042	SOFTWARE DEVELOPMENT PLAN (SDP)		Software/Certification Plan and Software Requirements Specifications (SRS)		
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		8. REQUIRING OFFICE	
DI-IPSC-81427A		SOW Para- 3.6, 3.7.2		RDMR-SEN	
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION	
LT		ONE/R	SEE ITEM 16		
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES
A	B	N/A	SEE ITEM 16		Draft Final
<b>16. REMARKS:</b> <b>Block 8:</b> Government will approve/disapprove within 30 days after receipt. If disapproved, the Contractor shall correct and re-submit within 20 days after notification.  <b>Block 9:</b> Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.  <b>Blocks 10, 12 and 13:</b> Submissions shall be delivered in IAW with Government approved Integrated Master Schedule.  <b>Block 14:</b> One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.					
15 TOTAL →				1	0 0
G. PREPARED BY		H. DATE	I. APPROVED BY		J. DATE
(b) (6)		12/9/13	(b) (6)		12/9/13

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A. CONTRACT LINE ITEM NO.		B. EXHIBIT <b>A</b>	C. CATEGORY TDP TM OTHER <b>MGMT</b>			
D. SYSTEM/ITEM <b>C-130H/J RDS DEVELOPMENT</b>		E. CONTRACT/PR NO. <b>W58RGZ-12-D-0089</b>		F. CONTRACTOR <b>RDS</b>		
1. DATA ITEM NO. <b>A074</b>	2. TITLE OF DATA ITEM <b>CONTRACT WORK BREAKDOWN STRUCTURE (CWBS)</b>		3. SUBTITLE			
4. AUTHORITY (Data Acquisition Document No.) <b>DI-MGMT-81334D</b>		5. CONTRACT REFERENCE <b>SOW Para- 3.8.4</b>		6. REQUIRING OFFICE <b>RDMR-SEN</b>		
7. DD 250 REQ <b>LT</b>	9. DIST STATEMENT REQUIRED <b>B</b>	10. FREQUENCY <b>ONE</b>	12. DATE OF FIRST SUBMISSION <b>20 DADO</b>	14. DISTRIBUTION		
8. APP CODE <b>N/A</b>		11. AS OF DATE <b>NA</b>	13. DATE OF SUBSEQUENT SUBMISSION <b>N/A</b>	b. COPIES		
				a. ADDRESSEE	Draft	Final
					Reg	Repro
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					0	0
15 TOTAL →				0	1	0
G. PREPARED BY <b>(b) (6)</b>		H. DATE <b>12/9/13</b>	I. APPROVED BY <b>(b) (6)</b>		J. DATE <b>12/9/13</b>	

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A. CONTRACT LINE ITEM NO.		B. EXHIBIT		C. CATEGORY		
		<b>A</b>		TDP TM OTHER <b>MGMT</b>		
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR		
<b>C-130H/J RDS DEVELOPMENT</b>		<b>W58RGZ-12-D-0089</b>		<b>RDS</b>		
1. DATA ITEM NO.	2. TITLE OF DATA ITEM			3. SUBTITLE		
<b>A079</b>	<b>WEIGHT AND BALANCE REPORT FOR AIRCRAFT</b>					
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE		
<b>DI-MGMT-81501A</b>		<b>SOW Para- 3.3, 3.7.2</b>		<b>RDMR-SEN</b>		
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION		
<b>LT</b>		<b>ONE</b>	<b>SEE ITEM 16</b>			
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES	
<b>A</b>	<b>B</b>	<b>NA</b>	<b>NA</b>		Final	
					Draft	
					Reg	Repro
16. REMARKS:				<b>RDMR-SEN</b>		
<p><b>Block 8: Government will approve/disapprove within 30 days after receipt. If disapproved, the Contractor shall correct and re-submit within 20 days after notification.</b></p> <p><b>Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.</b></p> <p><b>Block 12: In accordance with approved IMS.</b></p> <p><b>Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.</b></p>				<div style="display: flex; justify-content: space-between;"> <span>15 TOTAL</span> <div style="border: 1px solid black; padding: 2px;"> <div style="display: flex; justify-content: space-between;"> <span>1</span> <span>0</span> <span>0</span> </div> </div> </div>		
G. PREPARED BY		H. DATE		I. APPROVED BY		J. DATE
(b) (6)		12/9/13		(b) (6)		12/9/13

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE
NSP





CONTRACT DATA REQUIREMENTS LIST (1 Data Item)					Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA, 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for Contract/PR No. listed in Block E.						
A. CONTRACT LINE ITEM NO.		B. EXHIBIT <b>A</b>	C. CATEGORY TDP   TM   OTHER <b>MISC</b>			
D. SYSTEM/ITEM <b>C-130H/J RDS DEVELOPMENT</b>		E. CONTRACT/PR NO. <b>W58RGZ-12-D-0089</b>		F. CONTRACTOR <b>RDS</b>		
1. DATA ITEM NO. <b>A085</b>	2. TITLE OF DATA ITEM <b>TECHNICAL REPORT STUDY/SERVICES</b>		3. SUBTITLE <b>Electrical Loads Analysis (ELA)</b>			
4. AUTHORITY (Data Acquisition Document No.) <b>DI-MISC-80508B</b>		5. CONTRACT REFERENCE <b>SOW Para- 3.4, 3.7.2</b>		6. REQUIRING OFFICE <b>RDMR-SEN</b>		
7. DD 250 REQ <b>LT</b>	9. DIST STATEMENT REQUIRED <b>B</b>	10. FREQUENCY <b>ONE</b>	12. DATE OF FIRST SUBMISSION <b>SEE ITEM 16</b>	14. DISTRIBUTION		
8. APP CODE <b>A</b>		11. AS OF DATE <b>N/A</b>	13. DATE OF SUBSEQUENT SUBMISSION <b>N/A</b>	a. ADDRESSEE	b. COPIES	
					Draft	Final
					Reg	Repro
16. REMARKS:  <b>Block 8: Government will approve/disapprove within 30 days after receipt. If disapproved, the Contractor shall correct and re-submit within 20 days after notification.</b>  <b>Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.</b>  <b>Block 12: In accordance with approved IMS.</b>  <b>Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.</b>				<b>RDMR-SEN</b>	<b>1</b>	<b>0</b>
15 TOTAL →				<b>1</b>	<b>0</b>	<b>0</b>
G. PREPARED BY <b>(b) (6)</b>		H. DATE <b>12/9/13</b>	I. APPROVED BY <b>(b) (6)</b>		J. DATE <b>12/9/13</b>	

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE <b>NSP</b>





CONTRACT DATA REQUIREMENTS LIST				FORM APPROVED OMB NO. 0704-0188						
(1 DATA ITEM)										
<small>Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for Contract/PR No. listed in Block E.</small>										
A. CONTRACT LINE ITEM NO.		B. EXHIBIT		C. CATEGORY:						
		A		TDP    TM    OTHER    SESS						
D. SYSTEM/ITEM		E. CONTRACT/PR NO.		F. CONTRACTOR						
C-130H/J RDS DEVELOPMENT		W58RGZ-12-D-0089		RDS						
1. DATA ITEM NO.	2. TITLE OF DATA ITEM			3. SUBTITLE						
A164	Test Plans/Test Procedures			IAB Certification Plan						
4. AUTHORITY (Data Acquisition Document No.)		5. CONTRACT REFERENCE		6. REQUIRING OFFICE						
DI-SESS-81704		SOW Para- 3.7.2, 3.5		RDMR-SEN						
7. DD 250 REQ	9. DIST STATEMENT REQUIRED	10. FREQUENCY	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION						
LT		ONE	SEE BLOCK 16							
8. APP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES					
A	B	N/A	N/A							
16. REMARKS:										
<p>Block 8: Government will approve/disapprove within 30 days after receipt. If disapproved, the Contractor shall correct and re-submit within 20 days after notification.</p> <p>Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.</p> <p>Block 12: In accordance with approved IMS.</p> <p>Block 14: One copy shall be submitted via email in PDF format to the Government provided address. Once the CITIS is operational, per BASE IDIQ SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.</p>				RDMR-SEN	0	1	0			
				15. TOTAL				0	1	0
G. PREPARED BY		H. DATE	I. APPROVED BY		J. DATE					
(b) (6)		12/9/13	(b) (6)		12/9/13					

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE
NSP

CONTRACT DATA REQUIREMENTS LIST (1 Data Item)				Form Approved OMB No. 0704-0188													
<small>Public reporting burden for this collection of information is estimated to average 110 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA, 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for Contract/PR No. listed in Block E.</small>																	
A. CONTRACT LINE ITEM NO.		B. EXHIBIT <b>A</b>	C. CATEGORY TDP    TM    OTHER <b>MGMT</b>														
D. SYSTEM/ITEM <b>C-130H/J RDS DEVELOPMENT</b>		E. CONTRACT/PR NO. <b>W58RGZ-12-D-0089</b>		F. CONTRACTOR <b>RDS</b>													
1. DATA ITEM NO. <b>A166</b>	2. TITLE OF DATA ITEM <b>Integrated Program Management Report (IPMR)</b>		3. SUBTITLE <b>Format 6, IMS</b>														
4. AUTHORITY (Data Acquisition Document No.) <b>DI-MGMT-81861/T</b>		5. CONTRACT REFERENCE <b>SOW Para- 3.8.2</b>		6. REQUIRING OFFICE <b>RDMR-SEN</b>													
7. DD 250 REQ <b>LT</b>	9. DIST STATEMENT REQUIRED <b>B</b>	10. FREQUENCY <b>MTHLY</b>	12. DATE OF FIRST SUBMISSION <b>30 DADO</b>	14. DISTRIBUTION													
8. APP CODE <b>N/A</b>	11. AS OF DATE <b>0</b>	13. DATE OF SUBSEQUENT SUBMISSION <b>15 DARP</b>		a. ADDRESSEE	b. COPIES												
16. REMARKS:  <b>Block 4: Omit 2.1.1; 3.7.1.3.6; 3.7.1.3.7.3 (3); 3.7.1.3.7.3 (4); 3.7.2; Exception to 2.5.1- as specified in Block 10; 2.1.1.2 and 2.2.5- as specified in Block 16, Block 14 reference; 2.6.1, 3.7.1.4- as specified in Block 13</b>  <b>Block 9: Distribution Statement B: Distribution authorized to U.S. Government agencies only (Administrative or Operational Use) (12 Feb 2013). Other requests for this document shall be referred to the Project Manager Office, US Army Research, Development and Engineering Command, ATTN: RDMR-SEN, Redstone Arsenal, AL 35898.</b>  <b>Block 14: One copy shall be submitted via email in Gov't accessible "MPP" format to the Government provided address. Once the CITIS is operational, per SOW para 5.2.5, all CDRLs shall be submitted and stored electronically.</b>				<table border="1"> <tr> <td colspan="2">Draft</td> <td colspan="2">Final</td> </tr> <tr> <td></td> <td></td> <td>Reg</td> <td>Repro</td> </tr> <tr> <td colspan="2">0</td> <td>1</td> <td>0</td> </tr> </table>		Draft		Final				Reg	Repro	0		1	0
				Draft		Final											
						Reg	Repro										
0		1	0														
15 TOTAL →		0    1    0															
G. PREPARED BY <b>(b) (6)</b>		H. DATE <b>12/9/13</b>	I. APPROVED BY <b>(b) (6)</b>		J. DATE <b>12/9/13</b>												

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE <b>NSP</b>

**From:** (b) (6) .CIV NG NGB (US)  
**To:** (b) (6) Col USAF NGB A5 (US)  
**Subject:** FW: FOIA  
**Date:** Friday, February 10, 2017 6:29:19 AM

---

FYI Sir

(b) (6), DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6)  
NIPR (b) (6) @mail mil  
SIPR (b) (6) @mail.smil mil  
SHAREPOINT:  
<https://gkportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Home.aspx>

-----Original Message-----

**From:** (b) (6) Col USAF NGB A2/3/6 (US)  
**Sent:** Thursday, February 09, 2017 4:08 PM  
**To:** (b) (6) MSgt USAF NGB CCY (US) (b) (6) .mil@mail mil>  
**Cc:** (b) (6) CIV USAF NGB A3 (US)  
(b) (6) .civ@mail mil>; (b) (6) Lt Col USAF  
NGB A2/3/6 (US) <(b) (6) mil@mail mil>; (b) (6) CIV NG NGB  
(US) (b) (6) .civ@mail.mil>  
**Subject:** RE: FOIA

Thank you

-----Original Message-----

**From:** (b) (6) USAF NGB CCY (US)  
**Sent:** Thursday, February 09, 2017 4:07 PM  
**To:** (b) (6) Col USAF NGB A2/3/6 (US)  
(b) (6) mil@mail.mil>  
**Cc:** (b) (6) CIV USAF NGB A3 (US)  
(b) (6) @mail mil>; (b) (6) Lt Col USAF  
NGB A2/3/6 (US) (b) (6) @mail mil>; (b) (6) CIV NG NGB  
(US) (b) (6) @mail.mil>  
**Subject:** RE: FOIA

Sir,

FOIA request came down from NGB but I rejected it. There is no request of documents from the NGB, the attached letter is requesting records from the USFS. I rejected FOIA request back to NGB FOIA Office and stated that we cannot provide any documentation unless we get specifically get request of records from the NGB.

I am standing by until I hear back from the NGB FOIA Office, so you do not need to do anything with the attached request. If you need further info or clarification, please let me know.

Thank you,

(b) (6), MSgt, USAF  
Knowledge Management  
DSN: 612-9231  
Commercial: 240-612-9231  
Email: (b) (6)@mail.mil  
Organizational Email: usaf.jbanafw.ngb-ccy.mbx.ccyk-kom@mail.mil  
Organizational Phone: DSN 612-7093 Comm 240-612-7093

-----Original Message-----

From: (b) (6) Col USAF NGB A2/3/6 (US)  
Sent: Thursday, February 09, 2017 2:43 PM  
To: (b) (6) MSgt USAF NGB CCY (US) (b) (6)@mail.mil>  
Cc: (b) (6) CIV USAF NGB A3 (US)  
(b) (6)@mail.mil>; (b) (6) Lt Col USAF  
NGB A2/3/6 (US) (b) (6)@mail.mil>; (b) (6) CIV NG NGB  
(US) (b) (6)@mail.mil>  
Subject: FW: FOIA

MSgt (b) (6),

(b) (6) pointed me in your direction for this FOIA request. It was forwarded to us from the Forest Service so I don't know if the requestor is also making a request through NGB.

(b) (6)

-----Original Message-----

From: (b) (6) CIV NG NGB (US)  
Sent: Thursday, February 09, 2017 1:25 PM  
To: (b) (6) CIV USAF NGB A3 (US)  
(b) (6)@mail.mil>; (b) (6) Col USAF NGB A2/3/6  
(US) (b) (6)@mail.mil>; (b) (6) Lt Col USAF  
NGB A2/3/6 (US) <(b) (6)@mail.mil>  
Subject: FW: resend

Sirs,

As you can see, I received this from the US Forest Service. I have not seen anything from NGB yet.

How do I proceed on this?

(b) (6)

(b) (6) DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6)  
NIPR (b) (6) @mail mil  
SIPR (b) (6) @mail.smil mil  
SHAREPOINT:  
<https://gkoportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Home.aspx>

-----Original Message-----

From: (b) (6) CIV NG NGB (US)  
Sent: Thursday, February 09, 2017 1:14 PM  
To: (b) (6) l@mail mil>  
Subject: FW: resend

So what does this mean to me? This the company that bought the MAFFS data rights?

(b) (6), DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6)  
NIPR (b) (6) @mail mil  
SIPR (b) (6) @mail.smil mil  
SHAREPOINT:  
<https://gkoportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Home.aspx>

-----Original Message-----

From: (b) (6) -FS [[mailto:\(b\)\(6\)@fs.fed.us](mailto:(b)(6)@fs.fed.us)]  
Sent: Thursday, February 09, 2017 9:33 AM  
To: (b) (6) CIV NG NGB (US) <(b) (6) @mail.mil>  
Subject: resend

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**From:** (b) (6) Civ USAF ANG NGB/A5D  
**To:** (b) (6) MAJ USARMY NG NGB (US)  
**Subject:** FW: Ownership of Intellectual Property Associated With MAFFS II  
**Date:** Thursday, January 15, 2015 4:26:00 PM  
**Attachments:** [RE Letter for Transfer of Data Disk \(143 KB\).msg](#)  
[Executed Data Agreement - FS.PDF](#)  
[Summary of MAFFS II IP Facts.docx](#)  
[MAFFS II PSA Final 02.17.2010.pdf](#)  
[ASD498C, SOW C-130 AFFS \(Metallic\).doc](#)  
[Mod 24.pdf](#)  
[Mod 1.pdf](#)  
[Bill of Sale - Intellectual Property.pdf](#)

---

Email 2 same subject. Thanks again for all of your support.

V/r

(b) (6)

(b) (6), GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525  
Cell: (b) (6)  
BB: (b) (6)

PRIVACY ACT STATEMENT: This electronic transmission may contain FOR OFFICIAL

USE ONLY (FOUO) information that must be protected under the Privacy Act of 1974 (see AFI 33-332). Do not release outside of DoD channels without the consent of the originator's office. If you received this message in error, please notify the sender by reply e-mail and delete all copies of message.

-----Original Message-----

**From:** (b) (6) Col USAF ANG NGB/A5P  
**Sent:** Thursday, January 15, 2015 4:18 PM  
**To:** (b) (6) LTC USARMY NG NGB (US)  
**Cc:** (b) (6) CIV NG NGB (US); (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** FW: Ownership of Intellectual Property Associated With MAFFS II

LTC (b) (6)

To go along with the other email I just sent to you, I am forwarding this email from the vendor who asserts exclusive rights to the data that would be used to produce the MAFFs prototype.

Thanks

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6) @ang.af mil

-----Original Message-----

From: Steve Benz [<mailto:sbenz@blue-aero.com>]  
Sent: Wednesday, January 14, 2015 8:52 AM  
To: (b) (6) Col USAF ANG NGB/A5P  
Cc: mike@pcg-usa.net; (b) (6) @unitedaero.com  
Subject: Ownership of Intellectual Property Associated With MAFFS II

Dear COL (b) (6),

My name is Steve Benz, I am the Director of Maffs Corp. and I write to you here today to follow up on previous discussions you have had with Mike Hillestad of Patriot Consulting Group concerning Maffs Corp.'s legal rights to the ownership of data associated with the MAFFS II aerial firefighting system (often referenced in the attached documents as AFFS.) We were provided your point of contact by Mike who indicated you were the cognizant authority for this matter regarding the National Guard Bureau.

Let me begin by stating outright: Maffs Corp. is the exclusive owner of the technical data associated with the MAFFS II. That fact is most clearly recognized by the US Forest Service in the e-mail found here as the first of several attachments: Scott Fisher's e-mail input to me from last June. Maffs Corp. provided the requested consolidated technical data only after receiving the Forest Service's direct confirmation of this fact. The countersigned, fully executed agreement for the use of the data is the second attachment.

The third through seventh attachments deal with the erroneous assertion that in one of its contract modifications Aero Union Corp. transferred system data rights to the USFS. As you can see from the provided documents, summarized in the third attachment, any transfer of technical know-how was limited in terms of scope and timeframe. Thus, at this point, no entity, including USFS, other than Maffs Corp. has the right to apply MAFFS II technical data in any manner other system maintenance - as specifically recognized by the USFS in its letter to Maffs Corp. last year.

Finally, the eighth attachment is the Bill of Sale from Comerica Bank (dba VRB Corp.) to United Aeronautical (UAC), a partner in Maffs Corp. Within this document it is clear that ownership of the intellectual property formerly associated with Aero Union Corp. is transferred to UAC (Maffs Corp.)

Col (b) (6), I know that Mike has already pointed out the following input to you previously, but it bears repeating here: we do not assert our legal data rights in order to delay or diminish USFS / ANG efforts to redesign, reconfigure, and/or acquire new systems. Quite the opposite. We do so only in an effort to ensure our rightful and highly positive participation in any such effort. We've put together a great team of knowledgeable and capable technical and manufacturing experts and we're ready to modify and/or build

MAFFS systems right now. Mike said it best: we do this not to be a part of the problem, but instead to be part of the solution.

We look forward to a robust and positive dialogue with both the ANG and USFS on this matter and can visit with you, your staff, and that of the USFS at your request at any point to achieve a fair and win-win outcome.

Steve Benz

Director, Maffs Corp.

6501B Nob Hill Rd., Tamarac, FL 33321

tel: 954-718-4404

cell: 954-608-9665

email: sbenz@blueaero.com <<mailto:sbenz@blueaero.com>>

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**AGREEMENT  
For  
RELEASE AND DELIVERY**

THIS AGREEMENT FOR RELEASE AND DELIVERY ("Agreement") is entered into as of this 30<sup>th</sup> day of May 2014 by and between United Aeronautical Corporation ("UAC") and the U.S. Forest Service ("USFS").

**WITNESSETH:**

**WHEREAS**, USFS and Aero Union Corporation ("Aero") entered into that certain Contract No. 54-024B-1-2159, issued April 10, 2000, pursuant to which Aero was, among other things, to design, develop, and fabricate a new prototype airborne firefighting system (the "System"); and

**WHEREAS**, Aero developed the System and subsequently ceased conducting business, at which time Aero's secured lender exercised its rights arising from its security interests in Aero's assets, including the System, and subsequently sold certain of such assets, including the System, to UAC; and

**WHEREAS**, among the properties delivered to UAC by Aero's secured lender is a portable hard-drive more fully described in Exhibit A hereto (the "Drive"); and

**WHEREAS**, USFS believes that the Drive is the property of USFS and desires for UAC to deliver the Drive to USFS and UAC is willing to do so on the terms set forth below.

**NOW, WHEREFORE**, in consideration of the agreements contained herein and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged by USFS and UAC, the parties hereto agree as follows.

**AGREEMENT:**

1. Recitals. The recitals herein above are true and correct and incorporated into this Agreement.
2. Delivery; "As-Is, Where-Is". UAC shall ship the Drive (via FedEx) for delivery, on a strictly "as-is, where-is" basis, with all defects, to USFS within ten (10) days of receipt from USFS of written notice of the address to where such delivery is to be made.
3. No Representations or Warranties; Release. USFS HEREBY ACKNOWLEDGES AND AGREES THAT NEITHER UAC NOR ANY OF UAC'S AFFILIATES OR JOINT VENTURE PARTNERS, INCLUDING, BLUE AEROSPACE LLC (THE "UAC RELEASEES"), MAKE ANY REPRESENTATION OR WARRANTY WHATSOEVER, AND EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES, REGARDING THE DATA AND INFORMATION STORED ON AND OTHER CONTENTS OF THE DRIVE, THE ACCURACY OR COMPLETENESS OF THE SAME, THE CONDITION OR FUNCTIONALITY OF THE DRIVE, AND THE OWNERSHIP OF ANY OF THE DATA, INFORMATION, CONTENTS, AND THE DRIVE. USFS HEREBY RELEASES THE UAC RELEASEES FROM ANY AND ALL CLAIMS ARISING FROM OR RELATED TO THE DRIVE.
4. Notices. All notices made in connection with this Agreement shall be made by hand or overnight delivery or by certified mail, return receipt requested, to the address(es) set forth below the signature block of each party. Notice shall be deemed effective, as the case may be, upon hand or overnight delivery or the date of receipt.



5. Acknowledgment and Agreement. Notwithstanding the agreement herein of UAC to ship the Drive to USFS or anything contained on the Drive or elsewhere, USFS and UAC each acknowledges and agrees that, as set forth in Contract No. 54-024B-1-2159, issued April 10, 2000, the technical data produced or specifically used or related to the Airborne Fire Fighting System ("AFFS") developed pursuant to such contract shall remain the property of UAC (as the purchaser of assets of Aero from its secured creditor, including the System) and USFS shall have unlimited rights to view and use the data required for the continued operation and maintenance of the AFFS product.
6. Severability. If any provision of this Agreement is deemed invalid by a court of competent jurisdiction the remaining provisions shall remain in full force and effect.
7. Counterparts. This Agreement may be executed in counterparts, each of which shall be an original, but which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first set forth above.

United States Forest Service

By: 

Print name: Scott Fisher

Title: Aviation Mgmt Specialist

Address:

NIACC

3833 S. Development

Boise, ID 83705

United Aeronautical Corporation

By: 

Print name: Bradford Beck

Title: President

Address:

United Aeronautical Corporation

7360 Laurel Canyon Blvd., Cage: 0EUD7

North Hollywood, CA 91605

Attention: Bradford Beck, President

with copy to:

Blue Aerospace, LLC

6501B Nob Hill Rd.

Tamarac, FL 33321

Attention: Steve Benz

EXHIBIT A

Part Number: WDBBEP0010BBK-01

Serial Number: WXN132MESYY

↑  
E



**From:** (b) (6) LTC USARMY NG NGB (US)  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Subject:** FW: Response Letter to United Aero's Attorney (UNCLASSIFIED)  
**Date:** Thursday, April 09, 2015 2:37:23 PM  
**Attachments:** [Letter to Tsircou.docx](#)

---

Classification: UNCLASSIFIED

Caveats: NONE

Sir -- FYSA.

LTC (b) (6)

-----Original Message-----

**From:** (b) (6) LTC USARMY NG NGB (US)  
**Sent:** Thursday, April 09, 2015 2:35 PM  
**To:** (b) (6) - OGC'  
**Subject:** Response Letter to United Aero's Attorney (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

(b) (6) -- (b) (5)  
[Redacted]

[Redacted]

[Redacted]

Thanks,

(b) (6)

(b) (6)  
LTC, JA  
Chief, Contract and Fiscal Law Division  
Office of the Chief Counsel  
National Guard Bureau  
(703) 607-2755

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**Pages 191-194 have been withheld in their  
entirety pursuant to  
5 U.S.C. § 552 (b)(5)**

**(Draft Response Letter to Opposing  
Counsel)**

**It is unreasonable to segregate any  
portions within this withholding for  
release.**

**From:** (b) (6) Col USAF ANG NGB/A5P  
**To:** (b) (6) LTC USARMY NG NGB (US); (b) (6) @ogc.usda.gov  
**Cc:** (b) (6) Civ USAF ANG NGB/A5D; (b) (6) Civ USAF ANG NGB/A3M  
**Subject:** FW: Technical and Intellectual Property Rights to MAFFS II  
**Date:** Thursday, March 05, 2015 3:47:39 PM  
**Attachments:** [image001.png](#)  
[2015-03-05 - Letter to Col \(b\)\(6\) USAF - MAFFS.pdf](#)

---

LTC (b) (6) and Ms (b) (6)

The attached letter just came to me from United Aero's lawyer. I replied that he is likely to hear from a government lawyer with follow up questions.

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6) @ang.af mil

-----Original Message-----

**From:** Kyri Tsircou [<mailto:kyri@tsircoulaw.com>]  
**Sent:** Thursday, March 05, 2015 2:23 PM  
**To:** Bryan, Ian B Col USAF ANG NGB/A5P  
**Subject:** Technical and Intellectual Property Rights to MAFFS II

Col. (b)(6),

Please see attached letter concerning IP rights to the AFFS units owned by United Aeronautical Corp. Please let me know if you have any questions.

Best regards,

Kyri Tsircou

test - 4 <<http://www.tsircoulaw.com/>>

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**TSIRCOU**

INTELLECTUAL  
PROPERTY LAW

515 S. Flower Street, 36th Floor

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Los Angeles, CA 90071

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[WWW.TSIRCOW.COM](http://WWW.TSIRCOW.COM)

**EMAIL** [kyn@tsircoulaw.com](mailto:kyn@tsircoulaw.com)

Page 179 of 367 Release #1

March 5, 2015

UAC-00597

Via Email: ian.bryan@ang.af.mil

Ian Bryan, Col, USAF  
Chief, Programs Division (NGB/A5P)  
Air National Guard Readiness Center  
Andrews AFB, MD 20762

Re: Technical and Intellectual Property Rights to MAFFS II

Col. (b)(6):

We represent United Aeronautical Corp. (herein, "United Aero"), owner of the MAFFS family of products ("MAFFS"), in intellectual property matters. United Aero and the company from which United Aero acquired MAFFS have spent considerable time and effort building the intellectual property portfolio and the consumer goodwill in its systems.

The intellectual property rights for MAFFS transferred several times, with the final transfer to United Aero on September 20, 2013. United Aero is now the owner of all the IP related to the MAFFS I and MAFFS II fire retardant tank systems "systems", including: inventions; patents and patent applications; trademarks; data right; and all other relevant IP relating to the systems (individually and collectively, the "MAFFS IP").

It has recently come to our attention that there is confusion regarding the federal government's interest in the MAFFS IP, particularly as it relates to prior agreement between the USDA Forest Service ("USFS") and Aero Union Corp (AUC).

More particularly, we were informed that through correspondence with Col. (b)(6), Chief of the Programs Division for USAF ANG that there is a question regarding the rights the federal government has to the technical data associated with MAFFS.

For the reasons set forth below, it is our position that federal government's interest, via USFS, is limited only to using the relevant data for the continued operation and maintenance of the MAFFS product, only. This excludes any right to use MAFFS IP for any subsequent manufacturing, development or related activities without approval from United Aero.

By way of background, on April 10, 2000, AUC and USFS entered into an agreement (Contract 54-024B-1-2159; "Agreement"), for the purpose of designing,

developing, fabricating, and verifying a new prototype Airborne Fire Fighting System (“AFFS”). A series of 63 modifications were made to this Agreement, the first of which was on November 27, 2000, and the last of which was on December 17, 2009.

This Agreement, modifications, Statement of Work, and Agreement for Release and Delivery all provide that USFS is allowed access to the technical data contained in the data drive for the limited purpose of system maintenance and operation. USFS had more controlled access to the data drive during the period of the “Turn Key Deployment Program,” which expired on December 31, 2013.

Section 12.0 of the Agreement established the “Turn Key Deployment Program” (“Program”). The Turn Key Deployment Program was to provide maintenance and support of (9) AUC produced and delivered MAFFS II systems, and (14) trailers which began on January 1, 2009 and continued throughout a five-year period of performance which ended on December 31, 2013.

The Program also incorporated provisions from the Statement of Work ASD 498C, stating: Drawing and Data Package. “Aero Union will provide drawings and a data package adequate to allow the USFS to build an AFFS unit or hire another vendor to build an AFFS unit.” However, access to these drawings only applied to the time specified by the Turn Key Deployment Program. That time ended in December 30, 2013, along with the end of the warranty period for the Turn Key Deployment Program. There is no other reference in any supporting documentation, including the Statement of Work or any of its modifications, which would indicate that USFS has any other rights to the technical data or drawings owned by USFS for the purpose of the Program.

Moreover, on May 3, 2014, United Aero and USFS entered into an agreement (“The Agreement for Release and Delivery between United Aero and USFS”), in which United Aero provided to USFS a drive containing data relating to MAFFS. This agreement made included certain statement of clarification relating to United Aero ownership of the IP and USFS allowed scope of use, namely, for operation and maintenance purposes. In the relevant section, the agreement provides:

“USFS and UAC each acknowledges and agrees that, as set forth in Contract No. 54-024B-1-2159, issued April 10, 2000, the technical data produced or specifically used or related to the [AFFS] developed pursuant to such contract **shall remain the property of UAC** (as the purchaser of assets of Aero from its secured creditor, including the System) and USFS shall have unlimited rights to view



and use the data **required for the continued operation and maintenance of the AFFS product.**" (Emphasis added.)

Note that the USFS's rights are limited in scope—they are only allowed access for the continued operation and maintenance of the AFFS products, which are those that USFS currently possesses, only. As such, the any rights USFS might have had to the data are limited to viewing and using the data for operation and maintenance purposes only.

Any data used beyond the rights detailed above are unauthorized. Any damages by this unauthorized use would harm our client, including, but not limited to, damages in lost profits and lost commercial value. Any use or maintenance of United Aero's intellectual property that may result in infringement can also result in damages. If USFS wants to use United Aero's IP going forward for the development of future systems, they will have to do it through United Aero.

If you dispute our conclusions, please provide a written statement setting forth the factual bases, contract sections, and related analysis for our consideration.

This letter is sent without prejudice as to the rights and remedies available to our client, including without limitation, an accounting for damages and profits if legal action is necessary.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kyriacos Tsircou", with a stylized flourish at the end.

Kyriacos Tsircou, Esq.

**From:** [hillestadandassociates@comcast.net](mailto:hillestadandassociates@comcast.net)  
**To:** (b) (6) Civ; (b) (6) CTR  
**Subject:** Fwd: Hotels and Itinerary  
**Date:** Thursday, May 07, 2015 10:58:40 AM  
**Attachments:** [image002.png](#)

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MAFFS Corps was invited down (invite initiated by (b) (6) at the PIF) on the 13th because you guys are there.

Leigh Ann Ackermann from MAFFS Corps (and possibly Ficko) will be there.

RDS is sending a Sub Contractor agreement to (b) (6) as a start.

Can we arrange a beer or dinner the night of the 12th so you can meet Leigh Ann?

Thanks,

Mike

From: "Kristin Lauer" <Kristin.Lauer@yms-hsv.com>  
To: lackermann@unitedaero.com  
Cc: "hillestadandassociates" <hillestadandassociates@comcast.net>, sbenz@blueaero.com, "Richard Montecalvo" <Richard.Montecalvo@yms-hsv.com>  
Sent: Thursday, May 7, 2015 9:30:34 AM  
Subject: Hotels and Itinerary

Good Morning Leigh Ann,

I have listed some hotels in the area. Also if you use the address in my signature and use google maps you will also find some others as well.

Huntsville Marriott

5 Tranquility Base

Huntsville, AL 35805

(256) 830-2222

The Westin Huntsville

6800 Governors West Rd NW

Huntsville, AL 35806



(256) 428-2000

Courtyard Huntsville

4804 University Dr NW

Huntsville, AL 35816

(256) 837-1400

Hampton Inn Huntsville

4815 University Dr NW

Huntsville, AL 35816

(256) 830-9400

We were thinking that you could meet us or we could pick you up for lunch around 1100 on Wednesday 13 May. After lunch you would do a brief on your capabilities. Then we would all drive to our Hanger facility to do a tour out there.

Proposed Agenda:

\*\*1100 – 1230 Lunch - (TBD)

\*\*12300-1330 MAFFS Corp/Blue Aero Brief at Research Drive

\*\*1330 – 1400 Travel to Meridianville (MDQ) - Yulista Hanger facility

\*\*1400 – 1500 Tour Yulista Hanger facility

If you need anything else just let me know.

Regards,

Kristin Lauer

4906 Research Drive

Huntsville, AL 35806

Aviation Project Lead

(w) 256.319.4323 ext 4122

(c) 256.924.9409

kristin.lauer@yms-hsv.com <<https://web.mail.comcast.net/zimbra/kristin.carbaugh@yms-hsv.com>>

(b) (6) ctr@mail mil <[mailto:\(b\) \(6\) .ctr@mail mil](mailto:(b) (6) .ctr@mail mil)>

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“22 CFR Part 125.4 (b) (9) applicable.”

**From:** [Mike](#)  
**To:** (b) (6) [Civ USAF ANG NGB/A5D](#)  
**Cc:** (b) (6) [CTR USAF ANG NGB/A5RM](#)  
**Subject:** Fwd: Quick Summary  
**Date:** Thursday, December 18, 2014 6:21:46 PM

---

(b) (6), please read the abbreviated timeline provided by MAFFS corp. For the purpose of this united aeronautical and MAFFS corp are one in the same.

More to follow.

Thanks

Mike Hillestad

Sent from my iPhone

Begin forwarded message:

From: Leigh-Ann Ackermann <lackermann@unitedaero.com <<mailto:lackermann@unitedaero.com>> >  
Date: December 18, 2014 at 5:09:45 PM CST  
To: "mike@pcg-usa.net <<mailto:mike@pcg-usa.net>> " <mike@pcg-usa.net <<mailto:mike@pcg-usa.net>> >  
Cc: Steve Benz <sbenz@blue-aero.com <<mailto:sbenz@blue-aero.com>> >  
Subject: Quick Summary

Good Afternoon Mike,

Per our conversation this afternoon, below is a summary of what transpired between AUC and the USFS in regards to the MAFFS II contract. Please note, I am currently reviewing the 63 mods in the original contract and will be able to provide further detail by Tuesday COB. I will keep you updated with my findings.

\* Feb 2004 – Mod 19 was initiated as AUC was in the process of manufacturing the first couple MAFFS II systems. The USFS required confirmation that AUC would deliver 9 systems, if for some unknown reason, AUC was not able to complete the manufacturing process, the USFS would be allowed ownership of the data rights to complete the manufacturing process.

\* April 2006 – Mod 24 was initiated as AUC did not budget enough money to complete the manufacturing process therefore, both the USFS and AUC agreed that the USFS would increase the amount of the contract. At the time of the final delivery a PSA agreement would be initiated stating AUC would be responsible for maintaining all nine systems for five years after delivery. The PSA agreement also stated the USFS would be allowed to have the technical data only to be used for maintaining their current systems.

- \* Late 2009 – The final system was delivered to the USFS.
  
- \* Feb 2010 – The PSA was initiated to maintain and service all nine systems. AUC continued to service and maintain all nine systems until 2011.
  
- \* July 2011 – AUC lost their primary contract with the P-3's and could not continue with the PSA.
  
- \* Late 2011 – Comerica Bank foreclosed on all AUC assets.
  
- \* Early 2012 - The USFS requested the technical data from Comerica Bank.
  
- \* March 2012 –The USFS terminated the PSA contract with AUC demanding the technical data.
  
- \* Mid 2012 - Comerica Bank allowed the USFS to be on site and download the data they were requesting. However, the bank held on to the data drive until the USFS could provide Comerica's legal department with documentation showing the USFS had authority to receive this data.
  
- \* 2012 2013 – Comerica Bank retained the data drive as the USFS never provided the bank with confirmation they had rights to the data.
  
- \* Sept. 2013 – Comerica Bank handed over the data drive to United Aeronautical when they purchased the AUC assets.
  
- \* June 2014 – United Aeronautical and Blue Aerospace delivered the drive to Mr. Scott Fisher with a legal document stating the data was being transferred to the USFS for the purpose of maintaining their current systems only. Mr. Scott Fisher signed the release.

Thank you and please let me know if you have any further questions.

Leigh-Ann

**From:** [Sara Roe](#)  
**To:** [\(b\) \(6\) @ang.af.mil](#); [Bob Onsgard \(usfs789@gmail.com\)](#); [bob.allman@stratag-inc.com](#); [\(b\) \(6\) CIV USARMY RDECOM AMRDEC \(US\)](#); [Chris Palmiter \(chris.palmiter@stratag-inc.com\)](#); [\(b\) \(6\) CIV USAF \(US\)](#); [Christopher Reeves \(chris.reeves@stratag-inc.com\)](#); [\(b\) \(6\) CIV USAF \(US\)](#); [Curt Lawson](#); [\(b\) \(6\) Lt Col USAF NGB A5 \(US\)](#); [Jeff Bullington \(jeffery.bullington@stratag-inc.com\)](#); [Jeremiah Schock](#); [\(b\) \(6\) CIV NG NGB \(US\)](#); [Jim Maples](#); [kachristensen@fs.fed.us](#); [\(b\) \(6\) CIV USAF AFLCMC MOB \(US\)](#); [\(b\) \(6\) CTR USARMY RDECOM AMRDEC \(US\)](#); [Kristin Lauer](#); [Larry Roseke](#); [\(b\) \(6\) CIV USARMY RDECOM AMRDEC \(US\)](#); [\(b\) \(6\) CTR \(US\)](#); [Mandy Johnson](#); [Mark Reed](#); [\(b\) \(6\) CIV USAF \(US\)](#); [\(b\) \(6\) CTR \(US\)](#); [\(b\) \(6\) CIV USAF \(US\)](#); [Richard Montecalvo](#); [Ron Craft \(rcraft@craftdesigns.net\)](#); [Ryan Becker](#); [Sara Roe](#); [Spencer, Elvyn P Jr](#); [CTR \(US\)](#); [Wayne Craft \(r.wayne.craft@craftdesigns.net\)](#)  
**Subject:** IMAFFS IPT#9 Meeting Minutes 10\_21\_15  
**Date:** Friday, October 23, 2015 4:17:51 PM  
**Attachments:** [image001.png](#)  
[MAFFS IPT 9 Meeting Minutes 21OCT2015.doc](#)

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---

All,

The meeting minutes from IPT# 9 10/21/2015 are attached. Please let me know if you have any questions.

Thanks,

Sara Roe

Aviation Project Assistant

Office: 256-704-3163 ext. 4049

sara.roe@yms-hsv.com <Caution-<mailto:sara.roe@yms-hsv.com>>

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“22 CFR Part 125.4 (b) (9) applicable.”

**From:** (b) (6) LTC USARMY NG NGB (US)  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Cc:** (b) (6) Col USAF ANG ANGRC/JA  
**Subject:** Letter to UAC's Attorney (UNCLASSIFIED)  
**Date:** Monday, April 20, 2015 1:15:21 PM  
**Attachments:** [Letter to Tsircou 20 Apr 15 - FINAL.docx](#)

---

Classification: UNCLASSIFIED  
Caveats: NONE

Sir (b) (5)

Thank you.

LTC (b) (6)

(b) (6)  
LTC, JA  
Chief, Contract and Fiscal Law Division  
Office of the Chief Counsel  
National Guard Bureau  
(703) 607-2755

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Classification: UNCLASSIFIED  
Caveats: NONE

**Pages 191-194 have been withheld in their  
entirety pursuant to  
5 U.S.C. § 552 (b)(5)**

**(Draft Response Letter to Opposing  
Counsel)**

**It is unreasonable to segregate any  
portions within this withholding for  
release.**

**Pages 195-214 have been withheld in their  
entirety pursuant to  
5 U.S.C. § 552 (b)(5), (b)(6)**

**(Draft Command Arrangement  
Agreement)**

**It is unreasonable to segregate any  
portions within this withholding for  
release.**

**From:** (b) (6) W Col USAF NGB A5 (US)  
**To:** (b) (6) Col USAF NGB A5 (US); (b) (6) CIV USAF NGB A5 (US)  
**Cc:** (b)(5), (b)(6) CIV USAF NGB A5 (US)  
**Subject:** MAFFS intellectual property issue  
**Date:** Thursday, April 23, 2015 2:28:03 PM  
**Attachments:** [IB Letter to Tsircou 20 Apr 15 - FINAL \(2\).docx](#)  
[2015-03-05 - Letter to Col \(b\)\(6\) USAF - MAFFS.PDF](#)

---

(b) (6) and (b) (6),

I want to give you a heads up that Monday I plan to send the attached response letter from me United Aero Corp. setting out our position regarding United's claim to intellectual property that would limit our options to have MAFFS units produced. I have also attached the letter from United's attorney that I am responding to.

As we have discussed before, United Aero Corp. has asserted ownership of intellectual property that if true would prevent us from moving forward with our plan to have Redstone Arsenal build two MAFFS units to expend money appropriated for that purpose. The money expires this year. In late February and early March I began working with LTC (b)(6) the chief of the contract and fiscal law division in the NGB chief counsel's office, to determine how the company's claim should affect our actions. LTC (b)(6) brought in an Air Force patent attorney to assist. That analysis is complete.

LTC (b) (6)'s opinion is (b) (5)

(b) (6) LTC (b) (6) drafted the attached letter as a response to the letter from United's attorney to me. The letter lays out the government's position with regard to the rights United asserted in the letter to me.

I have instructed (b) (6) to proceed with the plan to MIPR funds to Redstone and we forwarded that funding request to you yesterday.

I plan to send a signed PDF version of the attached letter to United's attorney explaining our position. I will cc United's president, who has also contacted me, and (b) (6), who is working for United and has also discussed this with me.

Do you have any concerns with my plan?

Thanks

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)



March 5, 2015

UAC-00597

*Via Email:* (b) (6) @ang.af.mil

(b) (6) Col, USAF  
Chief, Programs Division (NGB/A5P)  
Air National Guard Readiness Center  
Andrews AFB, MD 20762

Re: Technical and Intellectual Property Rights to MAFFS II

Col. (b) (6):

We represent United Aeronautical Corp. (herein, "United Aero"), owner of the MAFFS family of products ("MAFFS"), in intellectual property matters. United Aero and the company from which United Aero acquired MAFFS have spent considerable time and effort building the intellectual property portfolio and the consumer goodwill in its systems.

The intellectual property rights for MAFFS transferred several times, with the final transfer to United Aero on September 20, 2013. United Aero is now the owner of all the IP related to the MAFFS I and MAFFS II fire retardant tank systems "systems", including: inventions; patents and patent applications; trademarks; data right; and all other relevant IP relating to the systems (individually and collectively, the "MAFFS IP").

It has recently come to our attention that there is confusion regarding the federal government's interest in the MAFFS IP, particularly as it relates to prior agreement between the USDA Forest Service ("USFS") and Aero Union Corp (AUC).

More particularly, we were informed that through correspondence with Col. (b) (6), Chief of the Programs Division for USAF ANG that there is a question regarding the rights the federal government has to the technical data associated with MAFFS.

For the reasons set forth below, it is our position that federal government's interest, via USFS, is limited only to using the relevant data for the continued operation and maintenance of the MAFFS product, only. This excludes any right to use MAFFS IP for any subsequent manufacturing, development or related activities without approval from United Aero.

By way of background, on April 10, 2000, AUC and USFS entered into an agreement (Contract 54-024B-1-2159; "Agreement"), for the purpose of designing,

developing, fabricating, and verifying a new prototype Airborne Fire Fighting System (“AFFS”). A series of 63 modifications were made to this Agreement, the first of which was on November 27, 2000, and the last of which was on December 17, 2009.

This Agreement, modifications, Statement of Work, and Agreement for Release and Delivery all provide that USFS is allowed access to the technical data contained in the data drive for the limited purpose of system maintenance and operation. USFS had more controlled access to the data drive during the period of the “Turn Key Deployment Program,” which expired on December 31, 2013.

Section 12.0 of the Agreement established the “Turn Key Deployment Program” (“Program”). The Turn Key Deployment Program was to provide maintenance and support of (9) AUC produced and delivered MAFFS II systems, and (14) trailers which began on January 1, 2009 and continued throughout a five-year period of performance which ended on December 31, 2013.

The Program also incorporated provisions from the Statement of Work ASD 498C, stating: Drawing and Data Package. “Aero Union will provide drawings and a data package adequate to allow the USFS to build an AFFS unit or hire another vendor to build an AFFS unit.” However, access to these drawings only applied to the time specified by the Turn Key Deployment Program. That time ended in December 30, 2013, along with the end of the warranty period for the Turn Key Deployment Program. There is no other reference in any supporting documentation, including the Statement of Work or any of its modifications, which would indicate that USFS has any other rights to the technical data or drawings owned by USFS for the purpose of the Program.

Moreover, on May 3, 2014, United Aero and USFS entered into an agreement (“The Agreement for Release and Delivery between United Aero and USFS”), in which United Aero provided to USFS a drive containing data relating to MAFFS. This agreement made included certain statement of clarification relating to United Aero ownership of the IP and USFS allowed scope of use, namely, for operation and maintenance purposes. In the relevant section, the agreement provides:

“USFS and UAC each acknowledges and agrees that, as set forth in Contract No. 54-024B-1-2159, issued April 10, 2000, the technical data produced or specifically used or related to the [AFFS] developed pursuant to such contract **shall remain the property of UAC** (as the purchaser of assets of Aero from its secured creditor, including the System) and USFS shall have unlimited rights to view



and use the data **required for the continued operation and maintenance of the AFFS product.**" (Emphasis added.)

Note that the USFS's rights are limited in scope—they are only allowed access for the continued operation and maintenance of the AFFS products, which are those that USFS currently possesses, only. As such, the any rights USFS might have had to the data are limited to viewing and using the data for operation and maintenance purposes only.

Any data used beyond the rights detailed above are unauthorized. Any damages by this unauthorized use would harm our client, including, but not limited to, damages in lost profits and lost commercial value. Any use or maintenance of United Aero's intellectual property that may result in infringement can also result in damages. If USFS wants to use United Aero's IP going forward for the development of future systems, they will have to do it through United Aero.

If you dispute our conclusions, please provide a written statement setting forth the factual bases, contract sections, and related analysis for our consideration.

This letter is sent without prejudice as to the rights and remedies available to our client, including without limitation, an accounting for damages and profits if legal action is necessary.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kyriacos Tsircou", with a stylized flourish at the end.

Kyriacos Tsircou, Esq.

April 22, 2015

NGB/A5P

Tsircou Law  
ATTN: Mr. Kyriacos Tsircou, Esq.  
515 S. Flowers Street, 36<sup>th</sup> Floor  
Los Angeles, CA 90071

Dear Mr. Tsircou:

I am in receipt of your March 5, 2015 letter regarding technical and intellectual property rights to the Modular Airborne Firefighting Systems (MAFFS) stemming from Contract Number 54-024B-1-2159 (hereinafter "the MAFFS contract") which was awarded by the US Forest Service (USFS) on November 2, 2000.<sup>1</sup> I have coordinated this response with legal counsel from the USDA, the Air Force and the National Guard Bureau.

After reviewing your letter and the relevant documents, the Government disagrees with United Aero's position that the Government's rights to the technical data from the MAFFS contract are limited in the manner described in your letter. Rather, the Government asserts that it has "shared" (government purpose) rights in the MAFFS technical data. As such, the Government has unlimited in-house rights and the Government is allowed to release or disclose the technical data outside the Government and authorize third parties to use, modify, release, perform, display or disclose the technical data *for government purposes*. See Defense FAR Supplement Clause 252.227-7013(a)(11) and 7013(a)(12) (Nov 1995).

The MAFFS Contract, as awarded, included the following language regarding data rights:

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See Page 55 of the MAFFS Contract.

There were 67 modifications to the MAFFS contract. Of those 67 modifications, the following were relevant to the Government's technical data rights: Modifications 1, 19, 24 and 67. They stated, in relevant part, as follows:

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It is the government position that a plain reading of the relevant contract language demonstrates that the Government has "shared" ownership rights in the technical data produced through the MAFFS contract. Modification 19 expressly altered the language set out in Modification 1 in a manner that was unequivocal -- Aero Union agreed to the "shared ownership" of "all" manufacturing data rights. Further, as reflected in Modification 19, Aero Union agreed to transfer to the government all related manufacturing data sufficient to build and maintain the Airborne Fire Fighting System in the event Aero Union defaulted on its obligations under this contract. Aero Union was



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The subsequent release agreement did not alter the status of the parties' respective rights in the technical data. Accordingly, the Government is allowed to use the technical data for government purposes – including the right to use the technical data for the development and manufacture of future MAFFS without the consent of United Aero.

Sincerely,

(b) (6)

Colonel, USAF  
Chief, Programs Division (NGB/A5P)

**From:** [Sara Roe](#)  
**To:** [\(b\) \(6\) @ang.af.mil](#); [Bob Onsgard \(usfs789@gmail.com\)](#); [bob.allman@stratag-inc.com](#); [\(b\) \(6\) CIV USARMY RDECOM AMRDEC \(US\)](#); [Chris Palmiter \(chris.palmiter@stratag-inc.com\)](#); [\(b\) \(6\) CIV USAF \(US\)](#); [Christopher Reeves \(chris.reeves@stratag-inc.com\)](#); [\(b\) \(6\) CIV USAF \(US\)](#); [Curt Lawson](#); [\(b\) \(6\) Lt Col USAF NGB A5 \(US\)](#); [Jeff Bullington \(jeffery.bullington@stratag-inc.com\)](#); [\(b\) \(6\) CIV NG NGB \(US\)](#); [Jim Maples](#); [\(b\) \(6\) CIV USAF AFLCMC MOB \(US\)](#); [\(b\) \(6\) CTR USARMY RDECOM AMRDEC \(US\)](#); [Kristin Lauer](#); [Larry Roseke](#); [\(b\) \(6\) CIV USARMY RDECOM AMRDEC \(US\)](#); [Mandy Johnson](#); [Mark Reed](#); [\(b\) \(6\) CIV USAF \(US\)](#); [Cobb, Patrick W CIV USAF \(US\)](#); [Richard Montecalvo](#); [Ron Craft \(rcraft@craftdesigns.net\)](#); [Ryan Becker](#); [Sara Roe](#); [Wayne Craft \(r.wayne.craft@craftdesigns.net\)](#)  
**Subject:** MAFFS IPT# 5 Meeting Minutes 9\_23\_15  
**Date:** Monday, September 28, 2015 12:21:46 PM  
**Attachments:** [image003.png](#)  
[MAFFS IPT 5 Meeting Minutes 23SEPT2015.doc](#)

---

All,

Please see the attached Meeting Minutes from IPT# 5 Sept 23, 2015.

Next IPT Meeting:  
Wednesday Sept 30, 2015 0900CT

Thanks,

Sara Roe  
Aviation Project Assistant  
Office: 256-704-3163 ext. 4049  
[sara.roe@yms-hsv.com](mailto:sara.roe@yms-hsv.com)<<mailto:sara.roe@yms-hsv.com>>  
[cid:image003.png@01D0F9DF.B46E5FE0]

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"22 CFR Part 125.4 (b) (9) applicable."

J-17-0019  
rd Bureau  
release #1

YULISTA  
AVIATION, INC.  
INTERNATIONAL

## Meeting Minutes

Meeting: **IPT # 5 for Modular Airborne Fire Fighting System (MAFFS) Phase II**

Date of Meeting: 23 September 2015

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during the MAFFS Phase II IPT #5.

- (b) (6) is going to provide (b) (6) with data showing what the numbers look like with the foam tanks removed with the existing system.
- (b) (6) stated that if the compressor pallet was removed we would have to move the controls to the center pallet.
- The Systems Requirement Document is 70% complete.
- Facility planning was discussed. RDS should be building the MAFFS units at the new hangar that is to be built (estimated completion July 2016) in Meridianville, AL.
- (b) (6) stated his concern of moving the center pallet and that it should stay. (b) (6) agreed with his statement.
- (b) (6) is going to send RDS the installation instructions that were just validated for the MAFFS II Unit
- (b) (6) is going to send RDS the conversion factors for the static data.
- Discussed the Onboard Vent Weldment. (b) (6) stated that he did not see a problem with welding the flange on the piping.
- (b) (6) stated that (b) (6) is going to confirm that compressors will remain on board as fixed part of the unit.

### **Action Items Added:**

1. (b) (6) to supply the recently validated MAFFS II installation instructions.

### **Action Items Closed:**



NEXT IPT MEETING:

Hosted by: RDS, Research Dr. / Phone Bridge

Date: September 30, 2015 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9111 / CODE: 117#

**Attendees List**

Name	Organization	Phone #	E-Mail Address	Check Box
Bob Onsgard	MAFFS Ops and Plans Coordinator, Contractor	(805) 217-6368	<a href="mailto:usfs789@gmail.com">usfs789@gmail.com</a>	PH
(b) (6)	Mechanical Eng	960-599-1267 x260	(b) (6)@fs.fed.us	PH
(b) (6)	Deputy Director of Operations, NIFC, US Forest Service	208-387-5949	(b) (6)@fs.fed.us	
(b) (6)	NGB MAFFS PM A/3	(240) 612-9304 BB (301)675 3125	(b) (6)@ang.af.mil	
(b) (6)	PIF	256-313-0337	(b) (6)civ@mail.mil	X
(b) (6)	PIF	256-842-8053	(b) (6)@us.army.mil	X
Richard Montecalvo	RDS	256-319-4325	<a href="mailto:Richard.montecalvo@yms-hsv.com">Richard.montecalvo@yms-hsv.com</a>	X
Mark Reed	RDS	256-799-1622	<a href="mailto:Mark.Reed@yms-hsv.com">Mark.Reed@yms-hsv.com</a>	X
Sara Roe	RDS	256-704-3163	<a href="mailto:Sara.roe@yms-hsv.com">Sara.roe@yms-hsv.com</a>	X
Mandy Johnson	RDS	256-319-4339	<a href="mailto:Mandy.johnson@yms-hsv.com">Mandy.johnson@yms-hsv.com</a>	X
Jim Maples	RDS	(256) 799-4913	<a href="mailto:Jim.maples@yms-hsv.com">Jim.maples@yms-hsv.com</a>	PH
Roger Smith	RDS	256-704-4187	<a href="mailto:roger.Smith@yms-hsv.com">roger.Smith@yms-hsv.com</a>	X
Michael Adams	RDS	256-704-4163	<a href="mailto:michael.adams@yms-hsv.com">michael.adams@yms-hsv.com</a>	
Kristin Lauer	RDS	256-319-4323	<a href="mailto:kristin.lauer@yms-hsv.com">kristin.lauer@yms-hsv.com</a>	X
Larry Roseke	RDS	256-799-1026 ext.1204	<a href="mailto:Larry.Roseke@yms-hsv.com">Larry.Roseke@yms-hsv.com</a>	X

(b) (6)	PIF Logistics	256-313-3667	(b) (6)@mail.mil	X
Chris Palmiter	Strata-G	256-705-8123	<a href="mailto:chris.palmiter@stratag.inc.com">chris.palmiter@stratag.inc.com</a>	X
Jeff Bullington	Strata-G	256-652-3151	<a href="mailto:Jeff.bullington@stratag.inc.com">Jeff.bullington@stratag.inc.com</a>	
Christopher Reeves	Strata-G	256-704-8542	<a href="mailto:chris.reeves@stratag.inc.com">chris.reeves@stratag.inc.com</a>	X
Glenn Cook	Strata-G	256-763-6576	<a href="mailto:Glenn.cook@stratg.inc.com">Glenn.cook@stratg.inc.com</a>	
Ray Currier	Strata-G	256-704-1187	<a href="mailto:ray.currier@stratag-inc.com">ray.currier@stratag-inc.com</a>	X
Bob Allman	Strata-G		<a href="mailto:bob.allman@stratag-inc.com">bob.allman@stratag-inc.com</a>	X
Wayne Craft	CDI	256-508-3197	<a href="mailto:r.wayne.craft@craftdesigns.net">r.wayne.craft@craftdesigns.net</a>	X
Ron Craft	CDI	256-650-0536	<a href="mailto:rcraft@craftdesigns.net">rcraft@craftdesigns.net</a>	
Mike Griffin	CDI	256-705-8768	<a href="mailto:mike.giffin@craftdesigns.net">mike.giffin@craftdesigns.net</a>	X
Curt Lawson	CDI		<a href="mailto:curt.Lawson@craftdesigns.net">curt.Lawson@craftdesigns.net</a>	X
(b) (6)	USAF SPO	478-926-3058	(b) (6)@us.af.mil	
(b) (6)	USAF SPO	478-222-8347	(b) (6)@us.af.mil	
(b) (6)	USAF SPO		(b) (6)@us.af.mil	
(b) (6)	USAF SPO	478-327-5672	(b) (6)@us.af.mil	
(b) (6)	USAF SPO	478-926-7376	(b) (6)@us.af.mil	

**From:** [Sara Roe](#)  
**To:** [Adam Collins](#); (b) (6) @ang.af.mil; [Bob Onsgard](#) (usfs789@gmail.com); [bob.allman@stratag-inc.com](#); (b) (6) [CIV USARMY RDECOM AMRDEC \(US\)](#); [Chris Palmiter](#) (chris.palmiter@stratag-inc.com); (b) (6) [CIV USAF \(US\)](#); [Christopher Reeves](#) (chris.reeves@stratag-inc.com); (b) (6) [CIV USAF \(US\)](#); (b) (6) [Lt Col USAF NGB A5 \(US\)](#); [Jeff Bullington](#) (jeffery.bullington@stratag-inc.com); (b) (6) [Jim Maples](#); (b) (6) [CIV USAF AFLCMC MOB \(US\)](#); (b) (6) [E CTR USARMY RDECOM AMRDEC \(US\)](#); [Kristin Lauer](#); [Larry Roseke](#); (b) (6) [CIV USARMY RDECOM AMRDEC \(US\)](#); [Mandy Johnson](#); [Mark Reed](#); (b) (6) [CIV USAF \(US\)](#); (b) (6) [CIV USAF \(US\)](#); [Richard Montecalvo](#); [Ron Craft](#) (rcraft@craftdesigns.net); [Ryan Becker](#); [Sara Roe](#); [Wayne Craft](#) (r.wayne.craft@craftdesigns.net)  
**Subject:** MAFFS IPT\_3\_09SEPTEMBER2015  
**Date:** Tuesday, September 08, 2015 1:37:17 PM  
**Attachments:** [image001.jpg](#)  
[MAFFS\\_PHII IPT\\_3\\_09SEPTEMBER2015.pptx](#)

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Good Afternoon,

Please see the attached slides for IPT#3. We will not be meeting on 9/9/15 but wanted to keep everyone up to date.

Thanks,

Sara Roe

Aviation Project Assistant

Office: 256-704-3163 Ext: 4049

Sara.Roe@yms-hsv.com <<mailto:Sara.Roe@yms-hsv.com>>

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“22 CFR Part 125.4 (b) (9) applicable.”





# C-130 I-MAFFS Phase II IPT # 3

9 September 2015





- Current Activities
- Schedule Milestones
- New Business/Action Items
- Action Item Log
- No call in for this IPT



- Electrical schematic diagrams of current MAFFS system ~95% complete
- Electrical schematics started:
  - IMAFFS wiring diagram – 25% complete
  - Current MAFFS high level diagram – 30% complete
  - IMAFFS high level diagram – 20% complete
- Researching electrical parts (valves, motors, solenoids, etc.)
- Preliminary design and analysis for new truss design
- Structural analysis of current main tank underway
- Working with various vendors (tanks, hardware options for controls & operator interface)
- Weight and balance table to determine effects of removable compressor pallet



- Mechanical schematics for MAFFS air/water/foam systems complete – currently working on the electrical schematics
- Drawings of unaffected system design in progress
- System requirement document ~20% complete





## Schedule Milestones

- |                        |                  |
|------------------------|------------------|
| ✓ Contract Award       | 29 July 2015     |
| ✓ Kick-off Meeting     | 19 August 2015   |
| • Draft SRD for Review | 23 October 2015  |
| • SRR                  | 16 December 2015 |



# New Business or Action Items





- Seat Requirements – new C-130 seat
  - BAE systems seat, part number 127900-1, drawing 201112663



- Action Item Log Review
- Next IPT: 16 September 2015  
0900 CT

**From:** (b) (6) <[REDACTED]@CIV USAF NGB A5 (US)>  
**To:** (b) (6) <[REDACTED]@W Col USAF NGB A5 (US)>  
**Cc:** (b) (6) <[REDACTED]@CTR USAF ANG NGB/A5E>  
**Subject:** MAFFS Legal Opinion  
**Date:** Thursday, May 21, 2015 3:54:42 PM  
**Attachments:** [image2015-05-21-154153.pdf](#)  
**Importance:** High

---

Sir,

I have saved the file to the ERM inbox. (b) (6) said she will move it into the appropriate folder. If you want the document restricted, then we will have to figure out a folder to create for this and future documents.

V/r

(b) (6)

(b) (6), GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525  
Cell: (b) (6)  
BB (b) (6)

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-----Original Message-----

From: andrew.kruse.1@us.af.mil [mailto:(b) (6)@us.af.mil]  
Sent: Thursday, May 21, 2015 3:42 PM  
To: (b) (6) CIV USAF NGB A5 (US); (b) (6) CIV USAF NGB A5 (US)  
Subject:



REPLY TO  
ATTENTION OF

## NATIONAL GUARD BUREAU

3500 FETCHET AVENUE  
ANDREWS AFB MD 20762-5157

April 24, 2015

NGB/A5P

Tsircou Law  
ATTN: Mr. Kyriacos Tsircou, Esq.  
515 S. Flowers Street, 36<sup>th</sup> Floor  
Los Angeles, CA 90071

Dear Mr. Tsircou:

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- 4 -

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Sincerely,

(b) (6)

Colonel, USAF  
Chief, Programs Division (NGB/A5P)

**Pages 243-261 have been withheld in their  
entirety pursuant to  
5 U.S.C. § 552 (b)(5)**

**(Draft Command Arrangement  
Agreement)**

**It is unreasonable to segregate any  
portions within this withholding for  
release.**

**From:** (b) (6)  
**To:** Bob Onsgard (usfs789@gmail.com); bob.allman@stratag-inc.com; (b) (6) CIV USARMY RDECOM AMRDEC (US); Chris Palmiter (chris.palmiter@stratag-inc.com); (b) (6) CIV USAF (US); Christopher Reeves (chris.reeves@stratag-inc.com); (b) (6) CIV USAF (US); Curt Lawson; Sakamoto, (b) (6) Lt Col USAF NGB A5 (US); Jeff Bullington (jeffery.bullington@stratag-inc.com); (b) (6) CIV NG NGB (US); Jim Maples; (b) (6) @fs.fed.us; (b) (6) CIV USAF AFLCMC MOB (US); (b) (6) (b) (6) CTR USARMY RDECOM AMRDEC (US); Kristin Lauer; Larry Roseke; (b) (6) CIV USARMY RDECOM AMRDEC (US); (b) (6) CTR (US); Mandy Johnson; Mark Reed; (b) (6) CIV USAF (US); (b) (6) CTR (US); (b) (6) CIV USAF (US); Richard Montecalvo; Ron Craft (rcraft@craftdesigns.net); Ryan Becker; Sara Roe; (b) (6) CTR (US); Wayne Craft (r.wayne.craft@craftdesigns.net)  
**Subject:** MAFFS Phase II // IPT Slides and AI Log  
**Date:** Tuesday, October 06, 2015 9:13:49 AM  
**Attachments:** [image003.png](#)  
[MAFFS PHII IPT 7 07OCTOBER2015.pptx](#)  
[MAFFS PHII Action Item Log 07OCTOBER2015.xlsx](#)

---

ALCON,

Here are the slides and AI Log for tomorrow's IPT at 0900 CST.

Dial 256-885-9111

Enter 3 digit Passcode: 117#

(DSN prefix 312-747)

Regards,

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"22 CFR Part 125.4 (b) (9) applicable."



# C-130 I-MAFFS Phase II IPT # 7

07 October 2015





- Current Activities
- Schedule Milestones
- Discussion/Questions
- New Business/Action Items
- Action Item Log Review

Call in: (256)-885-9111 /Passcode: 117#

(DSN préfix 312-747)



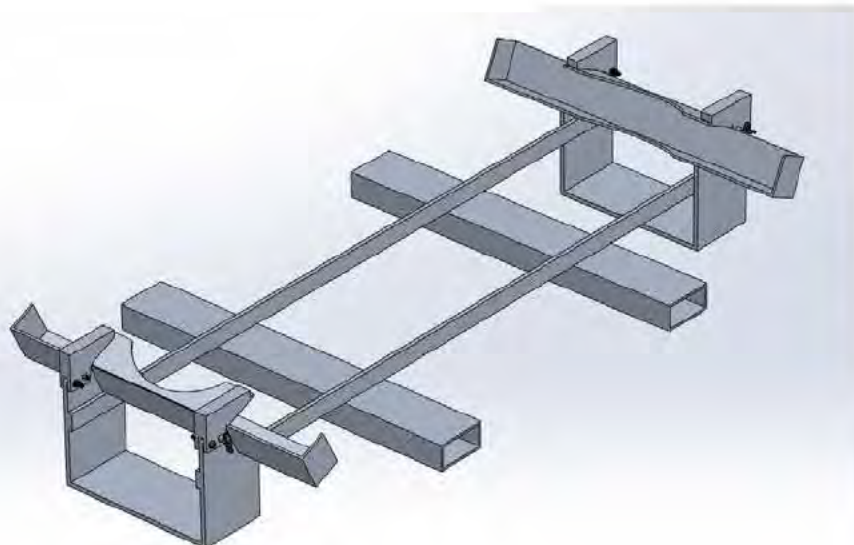
- System Requirement Document – 80% complete
  - Second internal review in progress
  - Discussed internally at the Technical IPT on 10/1
- Working on the Software Development Plan (SDP) – 10%
- Working on the Software Test Plan (STP) – 10%
- Overall wiring diagram for existing electrical system – 95%
- New system high level diagram – 95% (Air, Water/Foam, Hydraulic)
  - Added sensors to monitor pressure for the Hydraulic Accumulators (6 total)
- New system wiring diagram – 25%



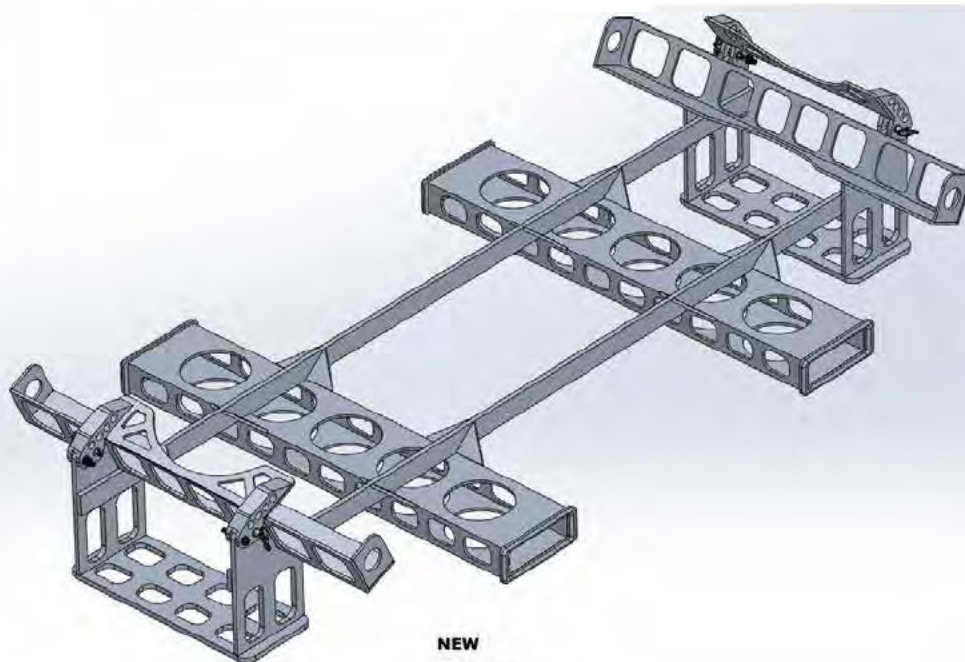


- Working on some Electrical drawings for early review/comments:
  - Started a drawing for the Power cable from the Breakout box to the power distribution – 90%
    - Started a drawing for the compressor interface – 40%
    - Planning to change size of compressor cables from 1/0 to 1 AWG to better fit the connectors
  - Working VICD drawing for Cable markers – 90%
  - Working VICD drawing for the power cable connector – 90%
- Sample drawings for mechanical will also be provided for early comments (door plug, pintle cart)
  - Working door plug drawings – 5%
  - Working on door plug cradle design for weight reduction and use of 6" wide forks w/fork guards
  - Design work on Overboard Vent Pipe. Approximately 58 lb weight reduction. May switch to aluminum material if source for 1/4" thick 6061-T6 aluminum elbows can be found.

## Door Plug Cradle



**OLD**  
109 Pounds



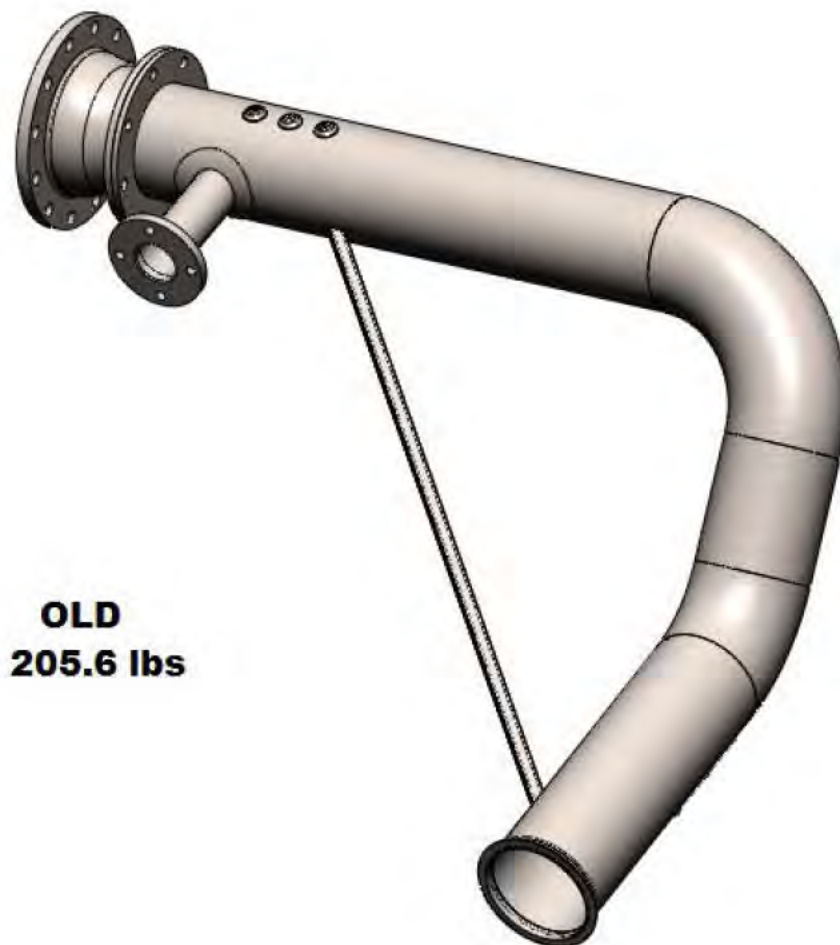
**NEW**  
84 Pounds

Weight reduction would lessen the 2-person lift burden by about 25 lbs.

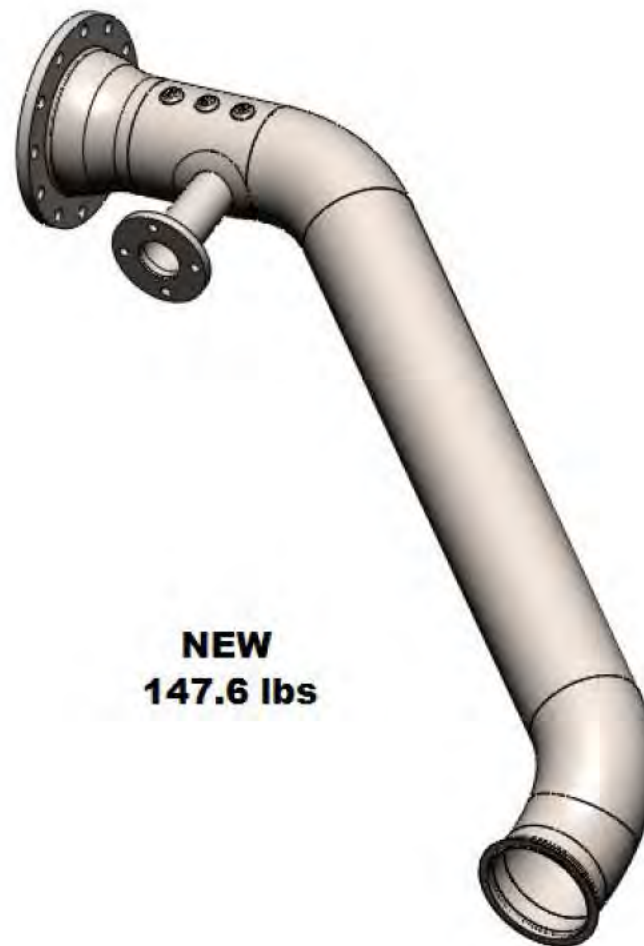




## OBVP Design Comparison



**OLD**  
**205.6 lbs**



**NEW**  
**147.6 lbs**





## Schedule Milestones

- ✓ Contract Award 29 July 2015
- ✓ Kick-off Meeting 19 August 2015
- Draft SRD delivered to SPO for Review 23 October 2015
- Comments back from SPO 23 November 2015
- Submit SRR Brief 9 December 2015
- SRR/0900 CT/1000 ET 16 December 2015
- SRR Action Items complete ~29 January 2016
- USG approval to close SRR ~30 January 2016



# New Business or Action Items?



Action Item Number	Date	Description	Responsible Person(s)	ECD	Status
16	23-Sep-15	(b)(6) to supply the recently validated MAFFS II installation instructions	(b)(6) USFS	30-Sep-15	Open
20	1-Oct-15	Strata-G to review the attachment of the bellow to the door plug	(b)(6)	28-Oct-15	Open
21	1-Oct-15	(b)(6) to send pictures of the hydraulic line crack and area where bellow meets the door plug	(b)(6)	7-Oct-15	Closed
22	1-Oct-15	SPO to check to see if there are requirements for flash-rate/color requirements for the exterior warning strobe light.	(b)(6) SPO	7-Oct-15	Open
23	1-Oct-15	(b)(6) will look into establishing a Logistics POC at Robins AFB.	(b)(6)	7-Oct-15	Open
24	1-Oct-15	(b)(6) to talk with his POC to make sure the BAE is fully qualified	(b)(6)	7-Oct-15	Open





Next IPT: 14 October 2015  
0900 CT/1000 ET

C-130H/J MAFFS PHASE II

updated by K. L. 10/07/2015

Action Item Number	Origin	Date	Description	Comments/Action	Responsible Person(s)	Date Assigned	Estimated Completion Date	Closed Date	Open, Closed, or Level of Effort(LOE)	Archived Comments
16	IPT 5	23-Sep-15	(b)(6) to supply the recently validated MAFFS II installation instructions		(b)(6)	23-Sep-15	7-Oct-15		Open	
20	IPT 6	1-Oct-15	Strata-G to review the attachment of the bellow to the door plug	A ¼ inch moveable room between the plug and piping would be ideal. - per (b)(6)	(b)(6)	1-Oct-15	28-Oct-15		Open	
21	IPT 6	1-Oct-15	(b)(6) to send pictures of the hydraulic line crack and area where bellow meets		(b)(6)	1-Oct-15	7-Oct-15		Closed	
22	IPT 6	1-Oct-15	SPO to check to see if there are requirements for flash-rate/color requirements for the exterior warning strobe light.		(b)(6) SPO	1-Oct-15	7-Oct-15		Open	
23	IPT 6	1-Oct-15	(b)(6) will look into establishing a Logistics POC at Robins AFB.		(b)(6)	1-Oct-15	7-Oct-15		Open	
24	IPT 6	1-Oct-15	(b)(6) to talk with his POC to make sure the BAE is fully qualified		(b)(6)	1-Oct-15	7-Oct-15		Open	
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**From:** (b)(6)  
**To:** Michael Adams; (b)(6) @ang.af.mil; Bob Osengard (usfs789@gmail.com); "chris.palmiter@stratag-inc.com"; (b)(6) CIV USAF (US); Jeff Bullington; (b)(6); Jim Maples; (b)(6) USAF AFLCMC MOB (US); Kristin Lauer; (b)(6) CIV USARMY RDECOM AMRDEC (US); Mandy Johnson; Mark Reed; Richard Montecalvo; (b)(6) CIV USARMY RDECOM AMRDEC (US); (b)(6) CIV USAF (US); Ray Currier; Ron Craft (rcraft@craftdesigns.net) (rcraft@craftdesigns.net); Ryan Becker; Sara Roe; Wayne Craft; (b)(6) CIV NG NGB (US); Chris Reeves; (b)(6) CIV USAF (US); (b)(6) -FS; bob.allman@stratag-inc.com; Larry Roseke; Valerie Davis; Cynthia Hamrick; Roger Smith; (b)(6) CIV USAF (US); (b)(6) CTR USARMY RDECOM AMRDEC (US); mike.giffin@craftdesigns.net; (b)(6) Lt Col USAF NGB A5 (US)  
**Subject:** MAFFS Phase II IPT slides and AI Log  
**Date:** Tuesday, September 15, 2015 3:29:34 PM  
**Attachments:** image003.png  
MAFFS PHII IPT 4 16SEPTEMBER2015.pptx  
MAFFS PHII Action Item Log 16SEPTEMBER2015.xlsx

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ALCON,

Please see the attached MAFFS Phase II IPT slides and AI Log for Wednesday 16 September 2015 IPT. Please forward to anyone that I have left off.

Dial 256-885-9111

Enter 3 digit Passcode: 117#

(DSN prefix 312-747)

Regards,

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(b)(6) .ctr@mail mil<mailto:(b)(6) ctr@mail mil>

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"22 CFR Part 125.4 (b) (9) applicable."



rd #J-17-0019

Guard Bureau

67 Release #1

## C-130H/J MAFFS PHASE II

updated by K. L. 9/15/2015

Action Item Number	Origin	Date	Description	Comments/Action	Responsible Person(s)	Date Assigned	Estimated Completion Date	Closed Date	Open, Closed, or Level of Effort(LOE)	Archived Comments
2	Kick-off Meeting	19-Aug-15	Review Drawings for formatting and standards for upload to JEDMICS	Asked SPO/Tech Data(?) to relook at the drawings that we had sent over from a formatting and standards stand point and to make comments back on additional information or changes	(b)(6), SPO	19-Aug-15	9-Sep-15		Open	
11	IPT 1	26-Aug-15	Logistics POC to start working TO requirements for the system		(b)(6), ANG	26-Aug-15	9-Sep-15		Open	
12	IPT 1	26-Aug-15	Static Data on the pintle nozzle	(b)(6) to mail the data to (b)(6) at the PIF	(b)(6) USFS	26-Aug-15	9-Sep-15		Open	
15	IPT 2	2-Sep-15	Removable Compressors - RDS to preform analysis to dterine the feasibility of this option and brief stakeholders with more details.		RDS	2-Sep-15	16-Sep-15		Open	
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# C-130 I-MAFFS Phase II IPT # 4

15 September 2015



- Current Activities
- Removable Compressor Pallet
- Schedule Milestones
- New Business/Action Items
- Action Item Log
- Call in: (256)-885-9111 /Passcode: 117#  
(DSN préfix 312-747)





- Drawing an overall wiring diagram for Existing Electrical System – 95% drawn.
- Started New System wiring Diagram – 25%
- Started New system high level diagram – 90% (contains HP Air, Water/Foam, Hydraulic)
- Started Existing system high level diagram – 20%
- Researching electrical parts (valves, motors, solenoids, etc.)
- Preliminary design and analysis for new truss design



- System requirement document ~20% complete
- Working with various vendors (tanks, hardware options for controls & operator interface)
- Refill pipe redesign
- Shell model of main tank nearly complete.
- Investigating if on screen display colors are different between Army / USAF





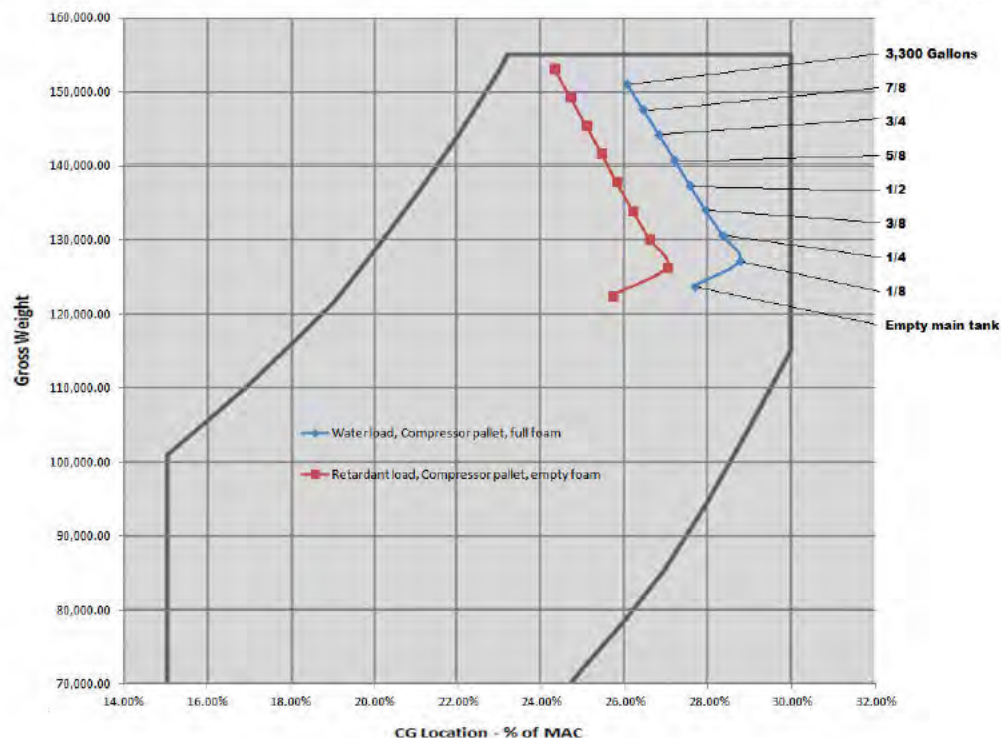
## Weight / CG Effects – Compressor Pallet Installed (C-130H Envelope)

MAFFS 2.5

Compressor pallet installed

\* Full air  
\* MAFFS crew = 400 lbs  
\* Assumed weight reduction ~2000 lbs

- With the compressor pallet installed, the cg limits are well within the aircraft envelope for both water and retardant payloads, as well as throughout the entire tank volumetric range (0 to 3,300 gal).
- Assumptions:
  - Full air
  - Crew weight = 400 lbs
  - I-MAFFS weight reduction = 2,000 lbs
  - Level flight
- Blue line: Water and full foam tank
- Orange line: Retardant and empty foam tank





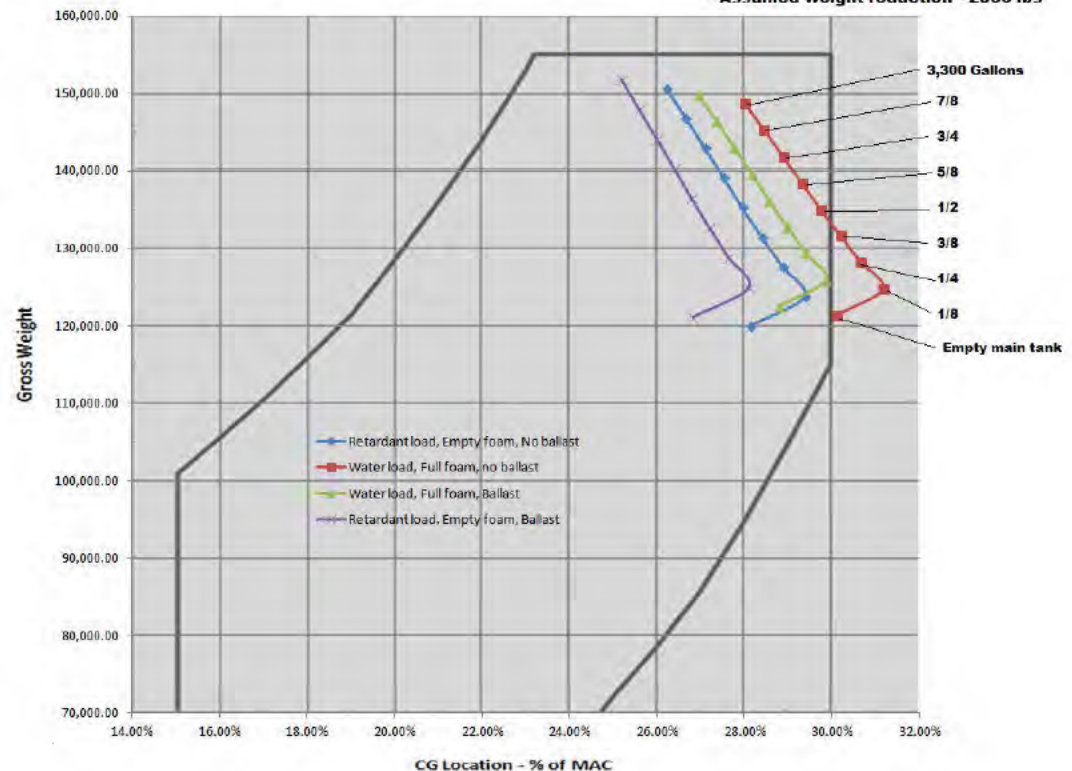
## Weight / CG Effects – Compressor Pallet Removed (C-130H Envelope)

- With the compressor pallet removed, the I-MAFFS cg falls outside the envelope for water and close to the limits for retardant even with 1,200 lbs of ballast located at the forward pallet cg. If flight maneuvers and sloshing are considered, all configurations will most likely fall outside aircraft limits without significant design changes.
- Assumptions:
  - Full air
  - Ballast = 1,200 lbs at FWD pallet cg
  - Crew weight = 400 lbs
  - I-MAFFS weight reduction = 2,000 lbs
  - Level flight
- See chart legend for additional assumptions specific to each line color.

MAFFS 2.5

No compressor pallet installed

- \* Full air
- \* Ballast = 1200 lbs
- \* MAFFS crew = 400 lbs
- \* Assumed weight reduction ~2000 lbs







## Additional Considerations

### Electrical

- Power Distribution will need to move to the center pallet. This moves weight aft.
- Harness routing for the High Pressure Sensors will cause the Main Controller to move to the center pallet. Weight moves aft.
- To reduce the number/size of harnesses, the High Pressure Sensor data will need to be sent to the Compressor Controller via Ethernet. Additional harnesses for dual configuration are still required.
- The power contactors, controller, and Soft Start for the compressors will have to remain on the forward pallet. This separates these features from a central location as they are in the MAFFS II configuration.

### Mechanical

- Will have to provide additional disconnects with tethered caps and additional mounting provisions to accommodate the dual configurations. Weight will be added primarily aft.
- In order to overcome the overall shift in cg aft, ballast will need to be added or the connections to the door plug (S-duct, vent tube, etc) will have to be modified with a removable section to move the entire unit forward when the compressors are removed.

### Logistics

- Either a separate trailer for the forward pallet will need to be used or provisions to remove and install it with a frontend loader to the existing trailer will need to be made.





## Recommendation

RDS recommends that the compressors remain as a permanent part of the I-MAFFS configuration for the following reasons:

- If the compressor pallet is removed, there is a negative effect on cg for the aircraft.
  - Requires ballast or modification of the ducting (S-duct, vent tube, etc) in order to keep the unit cg within limits for flight maneuvers. Ducting modification would be a significant design effort.
- The need for ballast (assumed minimum of 1,200 lbs – half of compressor pallet) allows the potential for only approximately 129 gallons of additional water/retardant. However, there will be additional weight due to design complexities that will reduce this amount (additional components/mounts, structural stiffening, etc).
- Additional harnesses will need to be created to accommodate both configurations. Weight will also increase due to additional components needed. This weight would also shift aft to either the center or aft pallets.
- Additional support equipment and/or processes for installing with and without the compressor pallet adds to the overall cost of operations. It also increases the risk of damage to equipment if the forward pallet is loaded and unloaded as needed from the trailer. When it is removed, provisions for storage would need to be made as well.



## Schedule Milestones

- |                        |                  |
|------------------------|------------------|
| ✓ Contract Award       | 29 July 2015     |
| ✓ Kick-off Meeting     | 19 August 2015   |
| • Draft SRD for Review | 23 October 2015  |
| • SRR                  | 16 December 2015 |



# New Business or Action Items



PROTOTYPE INTEGRATION FACILITY

# New Business







- Action Item Log Review
- Next IPT: 23 September 2015  
0900 CT



**From:** [H&A](#)  
**To:** (b) (6) [\\_Civ USAF ANG NGB/A5D](#); (b) (6) [\\_Civ USAF ANG NGB/A3M](#)  
**Subject:** MAFFS  
**Date:** Friday, March 06, 2015 5:12:36 PM

---

(b) (6), great seeing you today.

As discussed, and based on how the legal readings come out, MAFFS Corp can do a spiral build on the new MAFFS units.

I have also worked with ADS to get MAFFS units approved on their DLA contract.

That being said, we can help execute the expiring dollars and do it a lot cheaper than the current path.

Mike

Sent from my iPhone

**From:** [McKinley Craig R Lt Gen NGB/CF](#)  
**To:** [Carlson, Bruce Gen USAF AFMC HQ AFMC/CC](#)  
**Cc:** [Lengyel, Joseph Col ANG ANGRC/CC;](#) (b) (6) [CIV ANG ANGRC/CoS;](#) (b) (6) [Maj ANG NGB/CF](#)  
**Subject:** Modular Airborne Firefigting System(MAFFS) II  
**Date:** Monday, May 05, 2008 6:59:58 AM

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Sir,

Thank you for your continued support of the ANG and the Total Force. We could not possibly support the war and our domestic missions without the help of ASC and ESC in every major weapon system we operate.

One of the more unique, non-traditional missions we support is the United States Forest Service's (USFS) fire fighting mission, using the C-130Hs and C-130Js. After last years severe fires in California, the state is interested and concerned with the fielding of the MAFFS II system as soon as possible. As you may know, the USFS contractor's design came under close scrutiny from both the C-130H and C-130J SPOs due to design flaws, causing a delay in the employment of this system. With the 2008 fire season already underway in California, I respectfully request that you make this the highest priority for your SPOs and that testing of the MAFFS II system is expedited. This issue is receiving intense congressional level attention, and my staff has been called to the Hill multiple times in the past few months to discuss the MAFFS II delays. Your support in the matter is greatly appreciated sir. Best wishes.

V/r,

Craig

## Notes for Discussion of Command Relationships for MAFFS and DSCA

1. Command Authority – not a defined term; used to imply a military authority
  - a. SecDef does not have “command authority” over combatant commanders
    - i. Elected officials and political appointees may not exercise a military authority as such.
    - ii. Authority of SecDef is set forth in DoDD 5100.01, page 2, para. 4.a. “All functions of the Department of Defense are performed under the authority, direction and control of the Secretary of Defense.”
  - b. There are five defined “command authorities.”
    - i. Command – defined in JP 1-02. It is comprehensive and contains both full operational and administrative authorities.
    - ii. Combatant Command – defined in JP 1, page V-2, para. 2. Grounded in Title 10, USC, Section 164. Specifies the degree of operational and administrative authority a Combatant Commander has, and is less than full command. OPCON and TACON are inherent in Combatant Command. Only a Combatant Commander can delegate OPCON and TACON. If not in his chain of authority, a commander cannot be delegated these authorities, nor can his authority be referred to as OPCON or TACON.
    - iii. Operational Control (OPCON) – defined in JP 1, page V-6, para. 3
    - iv. Tactical Control (TACON) – defined in JP 1, page V-7, para. 4
    - v. Support – defined in JP 1, page V-8, para. 5
2. There are similar arrangements in the States
  - a. Governors have executive authority defined by State constitutions and statutes
    - i. Definition of “command” may be different in each State, but serves the same purposes as the term defined in JP 1-02 although it’s not the same definition.
    - ii. Governors may, under State law, direct field commanders through their respective TAGs to respond to the operational direction of a Dual-Status Commander (DSC). The order has the force of law under State statutes.
      1. Because governors have agreed to this command relationship, the DSC’s authority is legitimate.
      2. Because governors have agreed to this command relationship, and the DSC is the commander designated by a Combatant Commander of an organization created by and under the authority of a Combatant Commander, the DSC may have TACON of forces in Title 10 status as well as operational authority over forces in Title 32 status.
      3. This “control” arrangement legitimizes the DSC’s actions and decisions because of the agreement among the governors, DoD,

and Combatant Commanders. EMACs also define “control” arrangements.

4. Dual-status commanders either have the agreed authorities under the agreed command arrangements (organization) or they don't. Multiple deputies are not required to handle the command relationship for each State's National Guard. If the DSC doesn't have the authority, then the necessary relationship with each deputy doesn't exist anyway.
5. A governor's administrative authority, exercised through his TAG, is retained by TAG except during full mobilization. The administrative authority of a governor is akin to, but not the same as ADCON, and serves the same purposes.
3. In order to support an Incident Commander, i.e. provide defense support to civil authorities, a Combatant Commander executes OPLANS agreed with the States under agreed EXORDs. This includes standing up the requisite organizations (JFACC, AETF, AEG, etc.) and designates a dual-status commander in accordance with agreements with the States for each expeditionary organization. He then steps back and operates in support of the Incident Commander through the designated field organizations and commanders. An Incident Commander's organization is analogous to a JTF, and there can be several supported with air assets from a single AOC under the JFACC (see AFDD 1). The States attach forces in Title 32 status and the Combatant Commander attaches forces in Title 10 status to the expeditionary organizations for operations. Unity of command is maintained because both the Combatant Commander and TAGs act through and in support of Incident Commanders who are responsible for unity of effort, not through the commanders of the expeditionary organizations designated to directly support the Incident Commanders. The AETF/AEG/CCs essentially function as the Air Commander for a given Incident Commander. Again, think about the Incident Commander as commander of a JTF and apply the principles from AFDD 1 for engaging and supporting multiple JTFs from a single AOC. Because the JFACC is CDR AFNORTH, who has other responsibilities (such as ACA) he has an AETF designated to handle operations supporting civil authorities. The Combatant Commander should maintain liaison with the affected governors, TAGs, and NGB to anticipate additional requirements, maintain situational awareness from a gubernatorial perspective, gauge political aspects of ongoing operations, and keep them informed about ongoing operations from the perspective of the Combatant Command.
4. There are limitations to using “Coordinating Authority” as the term for defining the command relationship between a dual-status commander and State forces in Title 32 even with a handshake or understanding. The definition of the term clearly intends for it to apply to planning and not operations. A more descriptive term is needed to describe the operational authority of a dual-status commander over forces in Title 32 status. The term

used to describe the relationship between a host unit commander and associated personnel in a different legal status under Total Force Initiatives is “operational direction” and is set forth in AFI 90-1001. Although explicitly limited to classic associate units, the operational environment has evolved since 9/11 with regard to civil support, whether provided under DSCA or by forces in State Active Duty under control of their respective governors. Use of the term “operational direction” as described, not “defined” in AFI 90-1001 would improve the climate and perception of command relationships when forces in two different legal statuses are operating under the authority of a dual-status commander. It would provide a term analogous to TACON, which a dual-status commander is delegated to exercise over forces in Title 10, implying similar operational authority. Agreement to use this term for the special management situation found when forces in two legal statuses are supporting civil authorities under a common commander is all that is needed to make its use legitimate.



## Notes on Combatant Commander's Authorities for DSCA

1. CDR USNORTHCOM wants to "clarify" command relationships with National Guard commanders for operations under DSCA.
  - a. CDRUSNORTHCOM's desired objective appears to be Unity of Command via a continuous chain of command within the operational branch from the Secretary of Defense to all military forces in the field.
  - b. Options other than placing all forces in Title 10 status and attaching these forces with specification of OPCON to CDRUSNORTHCOM do not achieve this objective.
  - c. DSCA is a Federal response to requests for support for civil authorities, which demands a Federal force.
  - d. Assumes "Federal" equals a force in Title 10, USC status.
  - e. Wants to exercise "command" based on the current definition of "Command" in JP 1-02: "The authority that a commander in the armed forces lawfully exercises over subordinates by virtue of rank or assignment."
  - f. Presumption that such authority derives from the definition of "command relationships:" "The interrelated responsibilities between commanders, as well as the operational authority exercised by commanders in the chain of command; defined further as combatant command (command authority), operational control, tactical control or support."
  - g. The authorities included within COCOM are only applicable for those forces that are assigned to a combatant commander in the Forces For. Forces to be employed by CDRUSNORTH for DSCA operations are not assigned but may be attached with specification of OPCON or established in Support. Either action requires SECDEF approval. The perspective taken by ASD(HD) addresses only the "command authorities" of combatant command and the two inherent in combatant command which can be delegated – operational control and tactical control.
  - h. The command authority of a combatant commander is established in 10 USC, section 162 and 164. JP 1 further describes this as combatant command (command authority) [COCOM] and the included operational control (OPCON) and tactical control (TACON). These terms and authorities do not apply to forces operating outside of Title 10 status (e.g., in Title 32 or State control).
2. Defense Support to Civil Authorities (DSCA) implies a supporting/supported relationship between CDR USNORTHCOM and designated civil authorities.
  - a. Consistent with the Constitution and militia construct.
    - i. The people gave enumerated powers to the new central government through their elected, representatives to the Constitutional Convention, and reserved all others to the States.

- ii. The militia is built from personnel on commercial contract to the States to provide a trained, military force to resist encroachment by the central government if the need arises.
  - iii. Title 32, USC is the bridge which allows the militia of the States to be trained and equipped to Federal standards in return for service as a reserve force under agreed rules for the Departments of the Army and Air Force.
  - iv. Title 32, USC conveys Federal status.
  - v. Section 502(f), Title 32, USC allows limited usage of the militia for “operations” funded by the Federal government once approved by the President or SecDef.
- b. Presumes Title 32, USC, Section 502(f) conveys Federal status and provides the portal for CDR USNORTHCOM and subordinate commanders to exercise the command authority called Support in accordance with JP 1 and the requisite command arrangement agreements (CAA) defined pursuant to JP 3-27 and JP 3-28.
- c. CDR USNORTHCOM shall exercise the command authority of Support in accordance with JP 1 to fulfill his responsibilities under the DSCA construct, which are:
  - i. Standup the requisite military organizations to support operations by civil authorities.
  - ii. Designate commanders of those organizations after consultations with governors and Adjutants General of the States involved.
  - iii. In coordination with and agreement of governors and SecDef, define the nature and extent of control to be exercised by CDR USNORTHCOM pursuant to the command authority, Support, and the nature and extent of control to be delegated to subordinate commanders.
  - iv. Specify the nature and extent of control to be exercised by civil authorities over military formations attached for support.
  - v. Request forces from Federal and State sources.
  - vi. Pursuant to his authority of Support (command authority), assume control of forces assigned or attached by Federal authorities, and made available by State authorities.
  - vii. Allocate and support reallocation of forces after consultation with civil authorities.
  - viii. Represent military equities to civil authorities and venues.
  - ix. Negotiate contingency plans, operations plans, execution orders, tactics, techniques, and procedures with the States for providing defense support to civil authorities in accordance with his responsibilities noted above.
- 3. The construct introduces previously existing concepts, but not necessarily accommodated in terms of “conventional wisdom,”

- a. Title 32, not just Title 10, USC, conveys Federal status;
- b. Although Title 10 status provides the CDR more direct authority over the attached forces, it also brings into play Posse Comitatus under Title 18, section 1385 and has the consequence of limiting the use of Guard forces for law enforcement. Guard forces remaining under State control may be used for law enforcement.
- c. Support as a “command authority” is accommodated in the definition of “command relationships,” therefore is accommodated in the definition of “command;”
- d. The command authority of Support requires application of the principles by which command arrangements and command relationships are defined when full command is not appropriate (such as in the Unified Command System) or the presence of multiple sovereign executive authorities, i.e. Nations States, or State governors and Federal President;
- e. The command authorities defined and labeled as combatant command, operational control, and tactical control cannot be used in a context outside of the U.S. joint operational structure and Title 10, USC legal status because pursuant to Section 164, Title 10, USC; and administrative law in DoDD 5100.01 and JP 1, operational control and tactical control are inherent in combatant command, and combatant command is restricted to the commanders of combatant commands. In other words, forces must be in Title 10, USC legal status to be assigned or attached to a combatant commander before operational control or tactical control can be delegated to subordinate commanders.
- f. The command authority called Support is not restricted to commanders of combatant commands of the U.S. Unified Command System.
- g. The imperatives for defining the nature and extent of supporting and supported commanders contained in Support, are amplified in its application to developing command arrangement agreements under JP 3-16, Multi-National Operations; JP 3-27, Homeland Defense; and JP 3-28, Defense Support to Civil Authorities (DSCA). Integrating DSCA operations with civil support being rendered by the National Guard under control of State governors and TAGs is covered in ATTP 3-28.1(FM 3-28.1) and AFTTP 3-2.67, DSCA Integrating with National Guard Civil Support.
- h. The construct establishes a formal command relationship between CDR USNORTHCOM and forces in Title 32, USC status, and can be expanded to include other government agencies for ensuring Unity of Effort.
- i. The construct recognizes the possibility of transferring operational authority of some form, tantamount to tactical control, to civil authorities. The nature and extent of such “control” must be addressed and agreed beforehand in plans and

EXORDs, then in detailed execution and implementation processes and procedures.

- j. The authorities and command arrangements are made legitimate through agreements by cognizant authorities developed for each interface requiring definition of a command relationship.

**Pages 298-301 have been withheld in their  
entirety pursuant to  
5 U.S.C. § 552 (b)(5)**

**(Draft Notes on Combatant Commander  
Authorities for DSCA)**

**It is unreasonable to segregate any  
portions within this withholding for  
release.**



## Notes on Combatant Commander's Authorities for DSCA

1. CDR USNORTHCOM wants to "clarify" command relationships with National Guard commanders for operations under DSCA.
  - a. DSCA is a Federal response to requests for support for civil authorities, which demands a Federal force.
  - b. Assumes "Federal" equals a force in Title 10, USC status.
  - c. Wants to exercise "command" based on the current definition of "Command" in JP 1-02: "The authority that a commander in the armed forces lawfully exercises over subordinates by virtue of rank or assignment."
  - d. Presumption that such authority derives from the definition of "command relationships:" "The interrelated responsibilities between commanders, as well as the operational authority exercised by commanders in the chain of command; defined further as combatant command (command authority), operational control, tactical control or support."
  - e. Because certain functions or aspects, particularly judicial and logistics, are Service responsibilities, the definition of combatant command and its derivative authorities, operational control and tactical control, are less than full command. (Section 164, Title 10, USC; DoDD 5100.01; and JP 1).
  - f. Authority less than full command is defined in JP 1-02 as "control." therefore; the "command authorities" of combatant command, operational control, tactical control, and support are statements of the nature and extent of the degree of control exercised by a commander with such authority.
  - g. The perspective taken by ASD(HD) addresses only the "command authorities" of combatant command and the two inherent in combatant command which can be delegated – operational control and tactical control.
2. Defense Support to Civil Authorities (DSCA) implies a supporting/supported relationship between CDR USNORTHCOM and designated civil authorities.
  - a. Consistent with the Constitution and militia construct.
    - i. The people gave enumerated powers to the new central government through their elected, representatives to the Constitutional Convention, and reserved all others to the States.
    - ii. The militia is built from personnel on commercial contract to the States to provide a trained, military force to resist encroachment by the central government if the need arises.
    - iii. Title 32, USC is the bridge which allows the militia of the States to be trained and equipped to Federal standards in return for service as a reserve force under agreed rules for the Departments of the Army and Air Force.
    - iv. Title 32, USC conveys Federal status.

- v. Section 502(f), Title 32, USC allows limited usage of the militia for “operations” funded by the Federal government once approved by the President or SecDef.
- b. Presumes Title 32, USC, Section 502(f) conveys Federal status and provides the portal for CDR USNORTHCOM and subordinate commanders to exercise control in accordance with JP 1 and the requisite command arrangement agreements (CAA) defined pursuant to JP 3-27 and JP 3-28.
- c. CDR USNORTHCOM shall exercise control in accordance with a command arrangements agreement to fulfill his responsibilities under the DSCA construct, which are:
  - i. Standup the requisite military organizations to support operations by civil authorities.
  - ii. Designate commanders of those organizations after consultations with governors and Adjutants General of the States involved.
  - iii. In coordination with and agreement of governors and SecDef, define the nature and extent of control to be exercised by CDR USNORTHCOM pursuant to the command authority, Support, and the nature and extent of control to be delegated to subordinate commanders.
  - iv. Specify the nature and extent of control to be exercised by civil authorities over military formations attached for support.
  - v. Request forces from Federal and State sources.
  - vi. Pursuant to his command authority defined in a command arrangements agreement, assume control of forces assigned or attached by Federal authorities, and attached by State authorities.
  - vii. Allocate and support reallocation of forces after consultation with civil authorities.
  - viii. Represent military equities to civil authorities and venues.
  - ix. Negotiate contingency plans, operations plans, execution orders, tactics, techniques, and procedures with the States for providing defense support to civil authorities in accordance with his responsibilities noted above.
- 3. The construct introduces previously existing concepts, but not necessarily accommodated in terms of “conventional wisdom,”
  - a. Title 32, not just Title 10, USC, conveys Federal status;
  - b. The command authority set forth in a CAA requires application of the principles by which command arrangements and command relationships are defined when full command is not appropriate (such as in the Unified Command System) or the presence of multiple sovereign executive authorities, i.e. Nation States, or State governors and Federal President;
  - c. The command authorities defined and labeled as combatant command, operational control, and tactical control cannot be used in a context outside of the U.S. joint

operational structure and Title 10, USC legal status because pursuant to Section 164, Title 10, USC; and administrative law in DoDD 5100.01 and JP 1, operational control and tactical control are inherent in combatant command, and combatant command is restricted to the commanders of combatant commands. In other words, forces must be in Title 10, USC legal status to be assigned or attached to a combatant commander before operational control or tactical control can be delegated to subordinate commanders.

- d. The imperatives for defining the nature, degree and extent of control are applied to developing command arrangement agreements under JP 3-16, Multi-National Operations; JP 3-27, Homeland Defense; and JP 3-28, Defense Support to Civil Authorities (DSCA). Integrating DSCA operations with civil support being rendered by the National Guard under control of State governors and TAGs is covered in ATTP 3-28.1(FM 3-28.1) and AFTTP 3-2.67, DSCA.
- e. The construct establishes a formal command relationship between CDR USNORTHCOM and forces in Title 32, USC status.
- f. The construct recognizes the possibility of transferring operational authority of some form, tantamount to tactical control, to civil authorities. The nature and extent of such “control” must be addressed and agreed beforehand in plans and EXORDs, then in detailed execution and implementation processes and procedures.
- g. Command arrangements agreements and command authority defined therein are made legitimate because the agreements are between State governors and the representative of the Federal Presidency, SecDef, and developed for each interface requiring definition of a command relationship.
- h. CAAs are promulgated as memoranda of agreement, terms of reference, doctrine, or other appropriate vehicle.

## Notes on command arrangements and relationships for MAFFS

1. If it is necessary for CDR USNORTHCOM to exercise Combatant Command in order to support MAFFS operations, then he must have all assigned or attached forces in Title 10 legal status.
2. For CDR USNORTHCOM to support MAFFS operations, he must have all forces assigned or attached to him in Title 10 legal status because his command authority is Combatant Command, and that authority applies only to forces in Title 10 status.
  - a. Combatant command, as is Operational Control, is well-understood as an authority.
    - i. It is more than a description of a relationship between commanders. NOT!
    - ii. It requires assignment or attachment to the organization, in this case a Combatant Command, before the designated commander of the organization can exercise “control” pursuant to his authority.
    - iii. Before forces can be assigned to a Combatant Command on Federal orders, they must be in a Federal status other than Title 32 (N.B. Title 32 is a Federal status whereby NG forces are trained, and, under certain conditions, utilized for other operations, such as MAFFS) because they cannot be assigned to a Combatant Command in Title 32 status.
    - iv. Federal orders are required to ensure the chain of command is legitimate and disobedience can be punished under the UCMJ.
  - b. Guardsmen must be under the “control” of the Combatant Commander to preclude argument, dissension, etc. and the only authority or command relationship that is sufficient to yield the required “control” is the authority that accrues to a Combatant Commander, Combatant Command, or Operational Control, if you like.

**From:** [H&A](#)  
**To:** (b) (6) [Civ USAF ANG NGB/A5D Kruse](#)  
**Subject:** PIF  
**Date:** Monday, April 27, 2015 4:50:05 PM

---

(b) (6), thanks for taking my call today.

Although MAFFS Corp is not happy about the way the legal opinion came out, they understand the need to get on with fielding MAFFS to the users.

To that end, I would be happy to accept your offer to be part of a phone call to the PIF to see if MAFFS corp can get involved with the prototypes.

Would wed morning work for you?

Mike

Sent from my iPhone



From: [H&A](#)  
To: (b) (6) [Civ USAF ANG NGB/A5D](#)  
Cc: (b) (6) [Civ USAF ANG NGB/A3M](#)  
Subject: Re: 26 March  
Date: Tuesday, March 17, 2015 8:29:40 AM

---

I am going to have him book a ticket.

(b) (6) will set a meeting up with you

(b) (6), once you get back to work just let me know

Ads is also in town that week and unwanted him to meet them and come to an agreement on the DLA IDIQ

Thanks

Mike

Sent from my iPhone

On Mar 17, 2015, at 7:53 AM, (b) (6) [Civ USAF ANG NGB/A5D](#) (b) (6) [@ang.af mil](#)  
<[mailto:\(b\) \(6\) @ang.af mil](mailto:(b) (6) @ang.af mil)> wrote:

I am out sick  
(b) (6)

Sent with Good (www.good.com <<http://www.good.com>> )

-----Original Message-----

From: (b) (6) (b) (6) [@comcast.net](#) <[mailto:\(b\) \(6\) @comcast.net](mailto:(b) (6) @comcast.net)> ]  
Sent: Tuesday, March 17, 2015 07:52 AM Eastern Standard Time  
To: (b) (6) [Civ USAF ANG NGB/A3M](#)  
Cc: (b) (6) [Civ USAF ANG NGB/A5D](#)  
Subject: Re: 26 March

Thanks (b) (6) (b) (6) are you in ?

Sent from my iPhone

> On Mar 17, 2015, at 7:26 AM, (b) (6) [Civ USAF ANG NGB/A3M](#) (b) (6) [@ang.af mil](#)  
<[mailto:\(b\) \(6\) @ang.af mil](mailto:(b) (6) @ang.af mil)> wrote:  
>  
> I am.  
>  
>  
> (b) (6), NGB/A3  
> NGB Modular Airborne Fire Fighting System Program Manager  
> NGB CRG/ALCF FAM

> 3500 Fetchet Ave  
> Joint Base Andrews, MD 20762-5157  
> 240.612.9304  
> DSN 612-9304  
> BB (b) (6)  
> EMAIL: (b) (6) @ang.af mil <[mailto:\(b\) \(6\)@ang.af mil](mailto:(b) (6)@ang.af mil)>  
> SIPR (b) (6) @mail.smil mil <[mailto:\(b\) \(6\)@mail.smil mil](mailto:(b) (6)@mail.smil mil)>  
>  
>  
> -----Original Message-----  
> From: H&A [<mailto:hillestadandassociates@comcast net>]  
> Sent: Monday, March 16, 2015 10:23 AM  
> To: (b) (6) Civ USAF ANG NGB/A3M; (b) (6) Civ USAF ANG NGB/A5D  
> Subject: 26 March  
>  
> Would the two of you plus (b) (6) be available to meet my MAFFS Corp guy on 26 March ?  
>  
> Thanks  
>  
> Sent from my iPhone

From: [Mike](#)  
To: [\(b\) \(6\)](#) [Civ USAF ANG NGB/A5D](#)  
Cc: [\(b\) \(6\)](#) [Col USAF ANG NGB/A5P](#)  
Subject: Re: Can you call Col [\(b\) \(6\)](#) and Myself  
Date: Monday, January 12, 2015 10:52:22 AM

---

[\(b\) \(6\)](#), [\(b\) \(6\)](#)

Greetings from the land of warm beer. Rainy and cool here.

My client is calling me tomorrow morning east coast time.

I want to run a couple options by him

A: assert their data rights and provide any documentation they have to support

b: sign a letter relinquishing any claim to rights.

I thought about a third option. FS would have to agree, and I have not discussed with my client, but would involve limited data right claim. FS could develop prototype and level 3 package and provide the data to my client in compensation for using their data.

Just a thought.

More tomorrow.

Thanks

Mike

Sent from my iPhone

> On Jan 9, 2015, at 6:48 PM, [\(b\) \(6\)](#) [Civ USAF ANG NGB/A5D](#) [\(b\) \(6\)](#) @ang.af mil> wrote:

>

> Sir,

>

> Can you call in to Col [\(b\) \(6\)](#) office this afternoon regarding the MAFFS. We are looking for some assistance regarding the IP and the path we are currently on to an acquisition of MAFFS 2.5.

>

> Col [\(b\) \(6\)](#)'s number is 240-612-9367.

>

>

> V/r

> [\(b\) \(6\)](#)

>

> [\(b\) \(6\)](#), GS-13, DAF

> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

> DSN: 612-8525

> Com: (240) 612-8525

> Cell: [\(b\) \(6\)](#)

> BB: [\(b\) \(6\)](#)

>

> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR OFFICIAL

>

> USE ONLY (FOUO) information that must be protected under the Privacy Act of

> 1974 (see AFI 33-332). Do not release outside of DoD channels without the

> consent of the originator's office. If you received this message in error,  
> please notify the sender by reply e-mail and delete all copies of message.  
>  
>

**From:** (b) (6) Lt Col USAF NGB A5 (US)  
**To:** (b) (6) Maj USAF 162 WG (US); (b) (6) CIV NG NGB (US); (b) (6) CIV USARMY RDECOM AMRDEC (US); (b) (6) CIV USAF AFCLCMC MOB (US); (b) (6) Lt Col USAF AFRC A4 (US); (b) (6) CIV NG NGB (US); (b) (6) Maj USAF NG  
**Cc:** (b) (6) Lt Col USAF NGB A5 (US); (b) (6) CIV NG NGB (US); (b) (6) CIV USAF 162 FW (US); (b) (6) CTR (US); (b) (6) Col USAF NGB A5 (US)  
**Subject:** RE: Concept Review (CR) Template for IMAFFS at AATC Crosstell  
**Date:** Monday, June 05, 2017 2:53:07 PM  
**Attachments:** 2017 Jun 28 - AATC Concept Review IMAFFS NGB Draft Deck.pdf

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ALCON,

I attached a draft deck for the brief at AATC on 28 Jun to get the iMAFFS project formally added to their project lineup. It's a short brief, would you please do a quick review and provided edits/comments before I submit to AATC lead. Please keep me accurate. I would like to add a slide that highlights at the 10k level the key differences between MAFFS and iMAFFS, if someone is able to provide. Also would like to add general program stats such as total funding, and a one chart project timeline.

Sincerely,  
Jachin

(b) (6), Lt Col, USAF  
Chief, Agile Combat Support Programs Branch (NGB/A5PA)  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762  
DSN: 612-8697 COMM: 240-612-8697  
(b) (6) mil@mail.mil

Caution: This message may contain competitive or other non-public information protected by federal law from disclosure and not intended for disclosure outside official government channels. Do not disseminate this message without the approval of the originating office. If you received this message in error, please notify the sender by reply email and delete all copies of the message.

-----Original Message-----

**From:** (b) (6) Maj USAF 162 WG (US)  
**Sent:** Wednesday, May 31, 2017 5:19 PM  
**To:** (b) (6) Lt Col USAF NGB A5 (US); (b) (6) mil@mail.mil>; (b) (6) CIV NG NGB (US); (b) (6) civ@mail.mil>  
**Cc:** (b) (6) CIV USAF 162 FW (US); (b) (6) civ@mail.mil>; (b) (6) CTR (US); (b) (6) ctr@mail.mil>  
**Subject:** Concept Review (CR) Template for IMAFFS at AATC Crosstell

Lt Col (b) (6),

Sir, attached is the CR template we use for Crosstell at AATC. You only need to edit slides 1, 3, 4, 5, and 6. Slide 2 and 7 stay the same, and I will help with test inputs on slide 5. This is usually about a 15 minute brief at most. The primary objective is to inform the AATC/CC, Col (b) (6), of the system needing to be tested and the reason this system is important to the field. Keep in mind that it is a good idea to take a few moments to explain MAFFS, give pictures/videos, etc., as my boss is a CAF



guy and may have limited knowledge of this C-130 mission set.

He will usually seek the Director's inputs on their ability to support with manpower, and I will tell him we can support it. Can you please have this briefing back to me by 15 June, so I can review/edit. I've been told that C-130s will go first at Crosstell, and I'll be up there talking for a couple hours, then I will ask you to come up and brief this CR.

Does everything sound ok with this?

V/R,

(b) (6)

(b) (6)

ANG AFRC Test Center

Director, Mobility Air Forces Test

DSN: 228-0958

Comm: 520-228-0958

Cell: (b) (6)



# AATC Concept Review: Improved Modular Airborne Fire Fighting System (iMAFFS)

Lt Col (b) (6)

NGB/A5P

28 Jun 2017



# Information You Will Need



- Define the Problem
- Outline Possible Solutions
- Scope the Project
- Desired End State





# Define the Problem



- Congress allocated funding to for two additional Modular Airborne Fire Fighting Systems (MAFFS)
- Guard Bureau established an agreement with the Army Prototype Integration Facility (PIF) to manage MAFFS procurement
  - Responsible for drawing updates, manufacturing, software updates, improving the overall capability of the MAFFS and ground operational testing
- Legacy MAFFS are no longer procurable because the vendor went out-of-business
  - The government has asserted data rights over the MAFFS design, but part obsolescence prevents fabrication of an identical design
- Because an identical build was not possible the project was named Improved MAFFS (iMAFFS)
  - Based on the previous design but with replacement components for obsolescence
  - Remain a single roll-on/roll-off system (Group B components)
  - No modifications to the C-130H/J are planned (ref: AF Form 1067 #AMC 14-100)
- QT&E determination for delta between MAFFS and iMAFFS



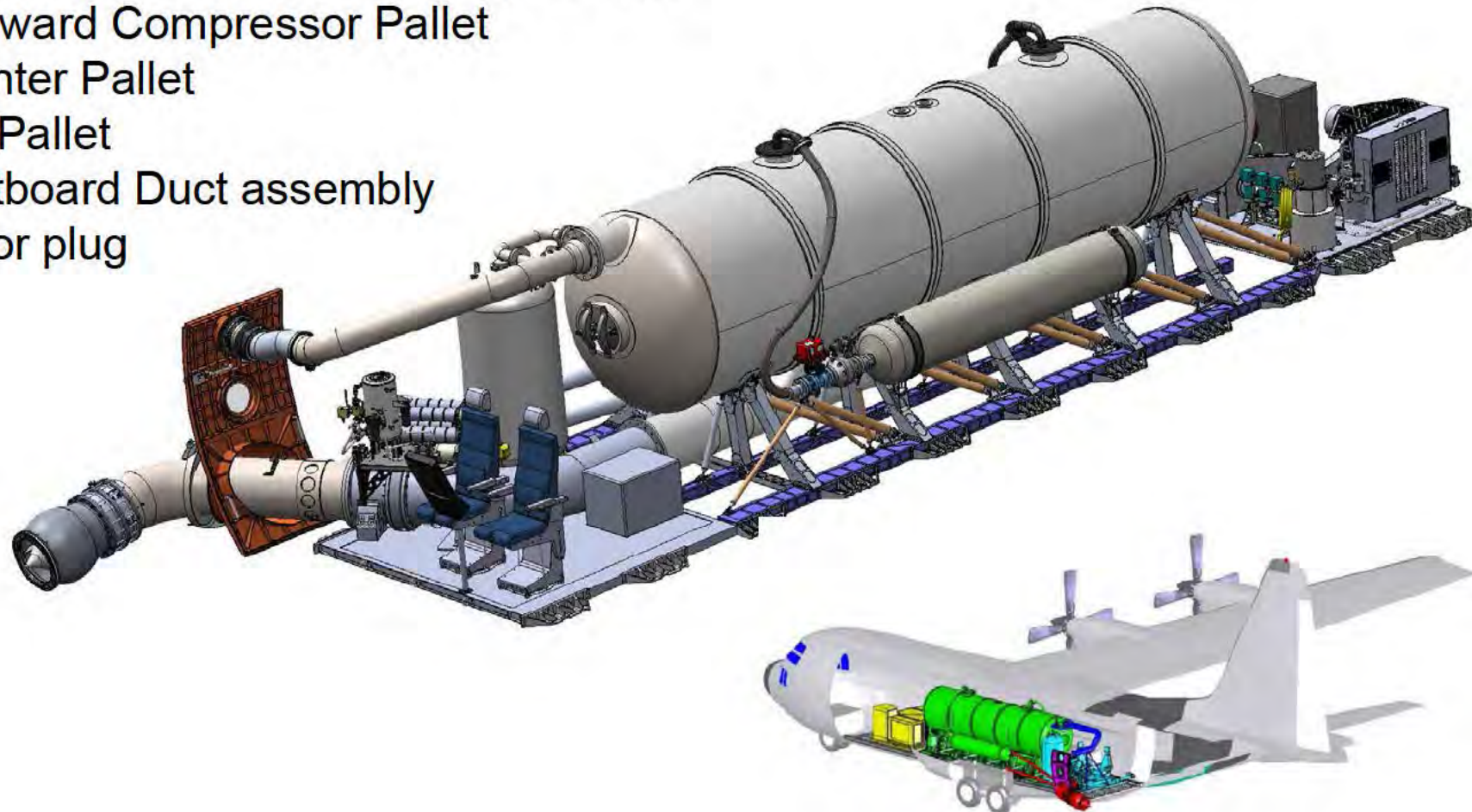


# Solution: iMAFFS



iMAFFS primary mission components:

- Forward Compressor Pallet
- Center Pallet
- Aft Pallet
- Outboard Duct assembly
- Door plug







# Scope: Key Stakeholders



- Prototype Integration Facility - Managing Program Office
  - Mr. (b) (6) PM Team Lead - (b) (6) @us.army.mil
  - Ms. (b) (6) – PM – (b) (6) @mail.mil
- AFLCMC/WLN – Aircraft SPO and LDTO
  - Mr. (b) (6) – TEMP / LDTO PM – (b) (6) @us.af.mil
  - Mr. (b) (6) – Chief of C-130 Avionics – (b) (6) @us.af.mil
- AATC – OT&E Lead
  - Maj (b) (6) – Director, Mobility Air Forces Test – (b) (6) @us.af.mil
- US Forest Service – iMAFFS End Owner/Customer
  - Mr. (b) (6) – (b) (6) @fs.fed.us
  - Mr. (b) (6) – (b) (6) @fs.fed.us
- NGB – Funding / Overall coordination
  - Mr. (b) (6) – NGB/A3 MAFFS PM - (b) (6) @mail.mil
  - Lt Col (b) (6) – NGB/A5 MAF Requirements Br - (b) (6) @mail.mil
- AFRC
  - Lt Col (b) (6) – (b) (6) @us.af.mil
- Redstone Defensive Systems – Yulista Aviation – Prime Contractor
  - Ms. (b) (6) – RDS Project Manager – (b) (6) @yms-hsv.com



# Scope: OT&E



- Limited compatibility & functionality demonstration of iMAFFS on the C-130H/J
- OT&E will follow on-aircraft QT&E
  - On-aircraft QT&E and flight testing will follow satisfactory completion of EMI/EMC ground testing by contractor (RDS), PIF, and AFLCMC
  - Will leverage legacy MAFFS T&E, including initial combined development test/operational test (DT/OT)
  - Address applicable aspects of operational suitability and effectiveness as a functional replacement
- Compatibility testing to evaluate if the newly designed soft start and load shedding method adversely effects the host aircraft in any way
  - EMI/EMC and Operation, Night Vision Imaging System (NVIS) and ICS compatibility, AGGPS interface, Group B loading/unloading, and emergency egress
- Functionality testing to evaluate system operation
  - Aerial spray loading, control, indication, application & recording during ground ops
  - No combined or follow-on operational test and evaluation is planned

# End State



- iMAFFS fielding recommendation for C-130H/J





# Leadership Direction



- [Topics to which AATC Leadership will provide direction at the conclusion of the Project Manager's Concept Review...]
- Type of Test (FDE, OUE, OA)
- EPO Required? If no, then AATC Project #
- Reps (LG, Ops)
- Shop Support (IT, Data Link, Sensor, Division)



# Questions/Discussions



**From:** [H&A](#)  
**To:** (b) (6) [CIV USAF NGB A5 \(US\)](#)  
**Cc:** (b) (6) [CIV NG NGB \(US\)](#) (b) (6) [Civ USAF ANG NGB/A5D Kruse](#)  
**Subject:** Re: Friday  
**Date:** Wednesday, May 20, 2015 9:45:33 AM

---

Okay. Will call both of you Friday. Can Conf you together if that is okay.

Sent from my iPhone

> On May 20, 2015, at 3:10 PM, (b) (6) [CIV USAF NGB A5 \(US\)](#) (b) (6) [.civ@mail.mil](#)>  
wrote:  
>  
> I'm out all day. Working on the house...Getting it ready to hit the market...You can call me at the house though.  
(b) (6) or use my cell or iPhone listed below.  
>  
> V/r  
> (b) (6)  
>  
> (b) (6), GS-13, DAF  
> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
> DSN: 612-8525  
> Com: (240) 612-8525  
> Cell: (b) (6)  
> iPhone: (b) (6)  
>  
> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR OFFICIAL  
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> USE ONLY (FOUO) information that must be protected under the Privacy Act of  
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> consent of the originator's office. If you received this message in error,  
> please notify the sender by reply e-mail and delete all copies of message.  
>  
> -----Original Message-----  
> From: H&A [<mailto:hillestadandassociates@comcast.net>]  
> Sent: Wednesday, May 20, 2015 1:15 AM  
> To: (b) (6) [CIV NG NGB \(US\)](#); (b) (6) [Civ USAF ANG NGB/A5D](#) (b) (6)  
> Subject: Friday  
>  
> (b) (6), (b) (6), do you have any time Friday afternoon to meet? Need some advice on the maffs corp issue.  
>  
> Mike  
>  
> Sent from my iPhone

**From:** (b) (6) CIV NG NGB (US)  
**To:** (b) (6) Col USAF NGB A5 (US)  
**Subject:** Re: IMAFFS  
**Date:** Monday, February 13, 2017 10:42:00 AM

---

Col,

The one from the Forest Service lawyer saying we own the data rights.

(b) (6), DAF  
NGB/A3  
MAFFS Program Manager  
CRG/ALCF FAM  
(b) (6) @mail.mil

> On Feb 13, 2017, at 10:37 AM, (b) (6) Col USAF NGB A5 (US) (b) (6) mil@mail mil> wrote:

>

> (b) (6),

>

> Which email are you talking about. The one you sent to me last week?

> Something from earlier?

>

> (b) (6)

>

> (b) (6), Col, USAF

> Chief, Programs Division (NGB/A5P)

> ANG Plans and Requirements Directorate

> National Guard Bureau

> 240-612-9367 / DSN 612-9367

> Cell (b) (6)

>

>

> -----Original Message-----

> From: (b) (6) CIV NG NGB (US)

> Sent: Friday, February 10, 2017 9:03 AM

> To: (b) (6) Col USAF NGB A5 (US) (b) (6) @mail mil>

> Subject: IMAFFS

>

> Col,

>

> Can you forward me the email from the lawyers on the MAFFS data?

>

> (b) (6), DAF

> NGB/A3

> MAFFS Program Manager

> CRG/ALCF FAM

> (b) (6) @mail.mil

**From:** (b) (6) CIV NG NGB (US)  
**To:** (b) (6) CIV USARMY RDECOM AMRDEC (US); (b) (6) Lt Col USAF NGB A5 (US)  
**Cc:** (b) (6) CIV USARMY RDECOM AMRDEC (US); (b) (6) @yms-hsv.com  
**Subject:** RE: IMAFFS Brief for Tuesday, 17 Nov (UNCLASSIFIED)  
**Date:** Monday, November 16, 2015 9:22:08 AM

---

(b) (6)

Slide #16. The new design will allow long term stability and no cracks will develop with removal of cross member?

(b) (6)

Jerry D Stoddard, DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6)  
NIPR (b) (6) .civ@mail.mil  
SIPR (b) (6) .civ@mail.smil.mil

-----Original Message-----

**From:** (b) (6) CIV (US) [mailto:(b) (6) .civ@mail.mil]  
**Sent:** Monday, November 16, 2015 8:33 AM  
**To:** (b) (6)

Richard (Rich) Montecalvo  
(richard.montecalvo@yms-hsv.com)  
**Subject:** IMAFFS Brief for Tuesday, 17 Nov (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

(b) (6), LTC (b) (6), LTC (b) (6), & (b) (6)

Attached the IMAFFS brief that we will cover tomorrow morning following our PIF Capabilities Brief/Tour. Please let me know any questions you might have. We look forward to our meeting. Thanks.

(b) (6)

p.s. (b) (6) let us know when you want us to call during our meeting and we can patch you in over the phone.

(b) (6)

Program Management Team Lead  
Prototype Integration Facility (PIF)  
Desk: 256-842-8053  
Cell: (b) (6)

Email: (b) (6).civ@mail.mil

<http://www.amrdec.army.mil/amrdec/pif/>

-----Original Message-----

From: (b) (6) CTR USAF NGB A5 (US)  
[mailto:(b) (6).ctr@mail.mil]  
Sent: Friday, November 13, 2015 1:24 PM  
To: (b) (6) CIV (US); (b) (6) CIV (US)  
Subject: FW: AFRCREDNov15.pptx

(b) (6) and (b) (6),

Attached is a briefing we will get you and your folks when we come in Tuesday...

v/r

(b) (6)

(b) (6), ANG

AATC/DL

Logistics Modernization Program Analyst

(O) 573-636-2466

(C) (b) (6) 0

(b) (6).ctr@mail.mil

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-----Original Message-----

From: (b) (6) Lt Col USAF (US)  
Sent: Friday, November 13, 2015 11:38 AM  
To: (b) (6) Lt Col USAF (US)  
Cc: (b) (6) CTR USAF NGB A5 (US)  
Subject: AFRCREDNov15.pptx

(b) (6),

Basic read ahead for next week. Some stuff may get updated as we meet with various actors next week but here are the basics.

Thanks,

CLASSIFICATION: UNCLASSIFIED

**From:** (b) (6) CIV (US)  
**To:** (b) (6) Civ USAF ANG NGB/A5D  
**Cc:** (b) (6) Civ USAF ANG NGB/A3M; (b) (6) CIV (US); "richard.montecalvo@yms-hsv.com"  
**Subject:** Re: I-MAFFS SPO Questions (UNCLASSIFIED)  
**Date:** Thursday, January 29, 2015 11:22:25 AM

---

(b) (6),

Sorry about confusion on location. But yes C-130 SPO personnel. Thanks.

(b) (6)

----- Original Message -----

**From:** (b) (6) Civ USAF ANG NGB/A5D [[mailto:\(b\) \(6\)@ang.af.mil](mailto:(b) (6)@ang.af.mil)]  
**Sent:** Thursday, January 29, 2015 10:13 AM  
**To:** (b) (6) CIV (US)  
**Cc:** (b) (6) Civ USAF ANG NGB/A3M; (b) (6)@ang.af.mil; (b) (6) CIV (US); 'Richard Montecalvo' <Richard.Montecalvo@yms-hsv.com>  
**Subject:** RE: I-MAFFS SPO Questions (UNCLASSIFIED)

(b) (6),

Actually I am going to Warner Robins, GA...The C-130 folks I will talk with. Hopefully that is who needs to respond to the questions. Let me know if there is someone else you want me to talk to.

V/r

(b) (6)

(b) (6), GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525  
Cell: (b) (6)  
BB (b) (6)

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-----Original Message-----

**From:** (b) (6) CIV (US) [[mailto:\(b\) \(6\).civ@mail.mil](mailto:(b) (6).civ@mail.mil)]  
**Sent:** Thursday, January 29, 2015 10:52 AM  
**To:** (b) (6) Civ USAF ANG NGB/A5D  
**Cc:** (b) (6) Civ USAF ANG NGB/A3M; (b) (6) CIV (US); 'Richard Montecalvo'  
**Subject:** I-MAFFS SPO Questions (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

(b) (6),



When I spoke to (b) (6) this morning regarding IMAFFS funding status he noted that you plan to visit the SPO personnel during your visit to Wright Patterson. In regard to that visit Jerry asked that I provide you a list of IMAFFS requirement questions that we need answered. Below is a list of immediate high level concerns from engineering. Obviously, this is not an all-inclusive list but will assist us in completing the draft System Requirement Document (SRD) for submission.

Also, see attached IPT charts for previous questions regarding requirement definition (if you manage to get past the list below). Thanks for your help.

(b) (6)

(b) (6)

Program Management Team Lead  
Prototype Integration Facility (PIF)  
Desk: 256-842-8053  
Cell: (b) (6)  
Email: (b) (6)@us.army.mil

[www.redstone.army.mil/amrdec/pif/](http://www.redstone.army.mil/amrdec/pif/)

---

From: Chris Palmiter [<mailto:chris.palmiter@stratag-inc.com>]  
Sent: Thursday, January 29, 2015 9:10 AM  
To: Richard Montecalvo  
Cc: Kristin Lauer; Michael Adams  
Subject: SPO Questions

Rich,

Here are the questions that I think sum up what we're trying to understand at this point in regards to airworthiness requirements for I-MAFFS (aka MAFFS 2.5). We have read through these following documents and are looking for other documents that are more specific to us understanding the exact requirements we need to design to and verify either through inspection, analysis, or test.

What are the primary standards/specifications that are used by the SPO to derive airworthiness requirements for:

1. Crash loads for the system? (We are currently assuming restraint criteria found in MIL-HDBK-516B, Section 9.7.6)
2. What are the crash loads for the operator seats? (Where is this documented? Current requirement is 9.0G in all directions.)
3. Material usage restrictions? (i.e. any prohibited or non-recommended materials/alloys?)
4. What document defines the Weight & Balance and cg limits for the C-130H and J?
5. What are the cargo weight limits for our application?
6. What is the burst pressure requirement for new composite high pressure air tanks and where is that defined? (We are currently assuming 3.0 x MEOP.)
7. What are the software requirements (if any) and where are those defined? (We are using DO-178C standards and CMMI-DEV ML3 processes in creation of the new software.)
8. What reports/analyses/testing are required from an airworthiness perspective for this system? (i.e. structural analysis, weight and balance, safety assessment, etc)

I think understanding the above will help us a lot in at least starting to define what we need to prove in Phase II.

Chris

----- Chris Palmiter, PE Principal Engineer Strata-G Solutions, Inc.

Phone: (256) 705-8123 or x4069

Classification: UNCLASSIFIED

Caveats: NONE

**From:** (b) (6) Lt Col USAF NGB A5 (US)  
**To:** (b) (6) CIV NG NGB (US)  
**Subject:** RE: I-MAFFS Systems Requirements Matrix  
**Date:** Friday, February 19, 2016 8:46:00 AM

---

Negative.

Sincerely,

(b) (6)

(b) (6), Lt Col, USAF  
Chief, Agile Combat Support Programs Branch (NGB/A5PA)  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762  
DSN: 612-8697 COMM: 240-612-8697  
(b) (6) mil@mail.mil

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-----Original Message-----

**From:** (b) (6) CIV NG NGB (US)  
**Sent:** Friday, February 19, 2016 8:10 AM  
**To:** (b) (6) Lt Col USAF NGB A5 (US)  
**Subject:** RE: I-MAFFS Systems Requirements Matrix

Are you attending?

(b) (6) DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager NGB Contingency Response Group FAM NGB  
Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6)  
NIPR (b) (6) .civ@mail.mil  
SIPR (b) (6) .civ@mail.smil.mil

-----Original Message-----

**From:** (b) (6) an CIV (US) [mailto:(b) (6) .civ@mail.mil]  
**Sent:** Thursday, February 18, 2016 4:38 PM  
**To:** (b) (6) Lt Col USAF NGB A5 (US) (b) (6) .mil@mail.mil>  
**Cc:** (b) (6) CIV NG NGB (US) (b) (6) .civ@mail.mil>  
**Subject:** FW: I-MAFFS Systems Requirements Matrix

LTC (b) (6),

I apologize I left you off the original email. You will also receive the SRM via SafeSite. Please let me know if you have any questions or concerns.

Thanks!

(b) (6)  
PIF Government Project Lead  
AMRDEC- Prototype Integration Facility  
Phone: 256.313.0337 (O) (b) (6) (C)  
Email: (b) (6) civ@mail mil

-----Original Message-----

From: (b) (6) CIV (US)  
Sent: Thursday, February 18, 2016 3:15 PM  
To: (b) (6) 1@us.af mil); (b) (6) CIV USAF (US); Chris Beasman ; (b) (6)  
(b) (6) CIV USAF (US); Ryan Becker; (b) (6) CIV NG NGB (US)  
Cc: (b) (6) CIV (US)  
Subject: I-MAFFS Systems Requirements Matrix

ALCON,

I hope you are all having a good week. You will be receiving an email via SAFESITE containing the System Requirements Matrix for your review. We will be discussing this in detail during our Engineering Conference next week. Please let me know if you have any questions or concerns at this time.  
We look forward to your visit next week.

Thanks,

(b) (6)  
PIF Government Project Lead  
AMRDEC- Prototype Integration Facility  
Phone: 256.313.0337 (O) 256.665.8857 (C)  
Email: (b) (6) civ@mail mil

**From:** [Mike](#)  
**To:** (b) (6) [Civ USAF ANG NGB/A5D](#)  
**Subject:** Re: MAFFS Contract Information  
**Date:** Friday, January 09, 2015 9:14:29 AM

---

Bank did not. MAFFS corp did. That's when they got the letter signed by FS on data rights.

Sent from my iPhone

> On Jan 9, 2015, at 9:05 AM, (b) (6) C Civ USAF ANG NGB/A5D (b) (6) @ang.af mil> wrote:

>

> From what I understand, the bank did turn over copies of the data.

>

> I am glad that MAFFS Corp will compete for this next generation of MAFFS.

>

> V/r

> (b) (6)

>

> ANDREW KRUSE, GS-13, DAF

> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

> DSN: 612-8525

> Com: (240) 612-8525

> Cell: (b) (6)

> BB: (b) (6)

>

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> please notify the sender by reply e-mail and delete all copies of message.

>

>

> -----Original Message-----

> From: Mike [<mailto:mike@pcg-usa.net>]

> Sent: Friday, January 09, 2015 9:03 AM

> To: (b) (6) Civ USAF ANG NGB/A5D

> Subject: Re: MAFFS Contract Information

>

> Btw, in my opinion the bank should have given them this information.

> MAFFS corp will be happy to compete for this when it comes out.

>

> Sent from my iPhone

>

>> On Jan 9, 2015, at 8:44 AM, (b) (6) Civ USAF ANG NGB/A5D (b) (6) @ang.af mil> wrote:

>>

>> Sir,

>>

>> FS sent a letter to the bank along with the signed contract where Aero Union was to delivery not only the drawings, but also agreed that Aero Union would provide the information necessary for the FS to build or contract to build additional MAFFS. The legal folks reviewing the contract believe the FS is within their rights to build the prototypes.

>>

>> Additionally, I have verified that the plan is to build prototypes and once proven satisfactory for the application, a contract will be awarded to industry for additional MAFFS using the new level 3 drawings developed from the



prototypes.

>>

>> V/r

>> (b) (6)

>>

>> (b) (6), GS-13, DAF

>> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

>> DSN: 612-8525

>> Com: (240) 612-8525

>> Cell (b) (6)

>> BB: (b) (6)

>>

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>> Act of

>> 1974 (see AFI 33-332). Do not release outside of DoD channels without

>> the consent of the originator's office. If you received this message

>> in error, please notify the sender by reply e-mail and delete all copies of message.

>>

>> -----Original Message-----

>> From: Mike [<mailto:mike@pcg-usa.net>]

>> Sent: Thursday, January 08, 2015 3:54 PM

>> To: Hillestadandassociates

>> Cc: (b) (6) Civ USAF ANG NGB/A5D; (b) (6) Civ USAF

>> ANG NG

**From:** [Mike](#)  
**To:** (b) (6) [Civ USAF ANG NGB/A5D](#)  
**Subject:** Re: MAFFS Contract Information  
**Date:** Friday, January 09, 2015 9:02:58 AM

---

Btw, in my opinion the bank should have given them this information.  
MAFFS corp will be happy to compete for this when it comes out.

Sent from my iPhone

> On Jan 9, 2015, at 8:44 AM, (b) (6) [Civ USAF ANG NGB/A5D](#) (b) (6) [@ang.af mil](#)> wrote:  
>  
> Sir,  
>  
> FS sent a letter to the bank along with the signed contract where Aero Union was to delivery not only the drawings, but also agreed that Aero Union would provide the information necessary for the FS to build or contract to build additional MAFFS. The legal folks reviewing the contract believe the FS is within their rights to build the prototypes.  
>  
> Additionally, I have verified that the plan is to build prototypes and once proven satisfactory for the application, a contract will be awarded to industry for additional MAFFS using the new level 3 drawings developed from the prototypes.  
>  
> V/r  
> (b) (6)  
>  
> (b) (6), GS-13, DAF  
> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
> DSN: 612-8525  
> Com: (240) 612-8525  
> Cell: (b) (6)  
> BB (b) (6)  
>  
> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR OFFICIAL  
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> consent of the originator's office. If you received this message in error,  
> please notify the sender by reply e-mail and delete all copies of message.  
>  
> -----Original Message-----  
> From: Mike [<mailto:mike@pcg-usa.net>]  
> Sent: Thursday, January 08, 2015 3:54 PM  
> To: Hillestadandassociates  
> Cc: (b) (6) [Civ USAF ANG NGB/A5D](#); (b) (6) [Civ USAF ANG NG](#)

**From:** [H&A](#)  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Cc:** (b) (6) Civ USAF ANG NGB/A5X  
**Subject:** Re: Maffs corp  
**Date:** Thursday, March 19, 2015 11:30:54 AM

---

Thanks.

Will let Steve know.

Sent from my iPhone

> On Mar 19, 2015, at 7:35 AM, (b) (6) Col USAF ANG NGB/A5P (b) (6) @ang.af mil> wrote:  
>  
> Sorry to get back to you late (b) (6). I will be out of town starting Tuesday next week. (b) (6) has said he would be happy to meet and as you know we work very closely together. He would accompany (b) (6). Realize that we can't offer anything or make any deals at this point while we await a legal position from our lawyers so we would really be in receive mode without much of anything to share from this end. If you still think that is worthwhile for you then please coord with Bonzo and he will coord with Andy. As always I'm available to discuss and you are welcome to call me anytime.  
>  
> (b) (6)  
>  
> (b) (6), Col, USAF  
> Chief, Programs Division (NGB/A5P)  
> 240-612-9367 / DSN 612-9367  
> Cell (b) (6)  
> (b) (6) @ang.af mil  
>  
>  
> -----Original Message-----  
> From: H&A [<mailto:hillestadandassociates@comcast.net>]  
> Sent: Tuesday, March 17, 2015 10:44 AM  
> To: (b) (6) Col USAF ANG NGB/A5P  
> Subject: Maffs corp  
>  
> (b) (6), my client is coming to town next week for meetings. I have a meeting set with A 3. Could he possibly meet with you and Andy on the 26th?  
>  
> Mike  
>  
> Sent from my iPhone

**From:** (b) (6) LTC USARMY NG NGB (US)  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Subject:** RE: MAFFs intellectual prop claim resend (UNCLASSIFIED)  
**Date:** Thursday, February 12, 2015 12:16:05 PM

---

Classification: UNCLASSIFIED  
Caveats: NONE

(b) (5)

LTC (b) (6)

-----Original Message-----

**From:** (b) (6) Col USAF ANG NGB/A5P [mailto:(b) (6) @ang.af.mil]  
**Sent:** Thursday, February 12, 2015 12:06 PM  
**To:** (b) (6) LTC USARMY NG NGB (US)  
**Subject:** MAFFs intellectual prop claim resend

No problem. Let me know if this doesn't work

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6) @ang.af.mil

Classification: UNCLASSIFIED  
Caveats: NONE

**From:** (b) (6) CIV (US)  
**To:** (b) (6) Civ USAF ANG NGB/A5D; (b) (6) Civ USAF ANG NGB/A3M  
**Cc:** "richard.montecalvo@yms-hsv.com"; (b) (6) CIV (US)  
**Subject:** Re: MAFFS Update  
**Date:** Thursday, April 02, 2015 10:57:40 AM

---

(b) (6),

If we receive the funding NLT 1 May, I am very confident that we can award and start work on or before 30 Sep 2015.

I would estimate an earlier date but since the proposal quotes now require updates that refresh process will add time, and if we approach FY proximity will begin competing with all other PIF projects proceeding through acquisition.

(b) (6)  
Prototype Integration Facility (PIF)  
Desk: 256.842.8053  
Cell: (b) (6)

----- Original Message -----

**From:** (b) (6) Civ USAF ANG NGB/A5D [[mailto:\(b\) \(6\)@ang.af.mil](mailto:(b) (6)@ang.af.mil)]  
**Sent:** Thursday, April 02, 2015 08:46 AM  
**To:** (b) (6) CIV (US); (b) (6) Civ USAF ANG NGB/A3M (b) (6)@ang.af.mil>  
**Subject:** MAFFS Update

(b) (6) and (b) (6),

I received an email late yesterday afternoon from the O-6. He stated he expects to have "a draft legal opinion next week."

With this in mind, how is the timeline at the PIF to execute \$16M if we were given the go ahead to proceed as we were going prior to the challenge? If the funds are issued NLT 1 May will you be able to execute or will there be issues we are unaware of at this point?

V/r  
(b) (6)

(b) (6), GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525  
Cell: (b) (6)  
BB: (b) (6)

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**From:** (b) (6) .Civ USAF ANG NGB/A5X  
**To:** "hillestadandassociates@comcast.net"  
**Subject:** Re: MAFFS  
**Date:** Friday, February 20, 2015 12:14:09 PM

---

(b) (6)

(b) (6), DAF, GS-14  
NGB/A5X  
Chief, Strategy and Plans  
Comm: 240-612-9356  
BB: (b) (6)

----- Original Message -----

From: Hillestadandassociates [<mailto:hillestadandassociates@comcast.net>]  
Sent: Friday, February 20, 2015 09:53 AM  
To: (b) (6) Civ USAF ANG NGB/A5X  
Subject: MAFFS

(b) (6)

Please pass to (b) (6) if you will that maffs corp has engaged the proper team to provide their legal position and should be done very soon.

He apologizes for talking so long but wants to get it right.

(b) (6)

Sent from my iPhone

**From:** (b) (6) Col USAF ANG NGB/A5P  
**To:** Steve Benz  
**Cc:** mike@pcg-usa.net; lackermann@unitedaero.com; (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** RE: Ownership of Intellectual Property Associated With MAFFS II  
**Date:** Friday, January 30, 2015 5:11:49 PM

---

Mr. (b) (6),

Can you provide a contact for your legal counsel? Our legal and acquisition experts are trying to better understand the legal rationale and supporting documentation underlying your position so that we can make the best possible decision. They would like to request that from the proper contact. I suggested I could probably obtain that contact from you.

Thank you,

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6) @ang.af mil

-----Original Message-----

**From:** Steve Benz [mailto:sbenz@blue-aero.com]  
**Sent:** Wednesday, January 14, 2015 1:15 PM  
**To:** (b) (6) B Col USAF ANG NGB/A5P  
**Cc:** mike@pcg-usa.net; lackermann@unitedaero.com; (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** RE: Ownership of Intellectual Property Associated With MAFFS II

Col. (b) (6),

Thank you for your note and fully understood on your guidance. We stand by prepared to support you, the ANG, the USFS, and, generally, the notion of MAFFS II for aerial firefighting in any practical way.

You know where to reach us and we look forward to when you do.

steve benz

6501B Nob Hill Rd., Tamarac, FL 33321  
tel: 954-718-4404  
cell: 954-608-9665  
email: sbenz@blueaero.com

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-----Original Message-----

**From:** (b) (6) Col USAF ANG NGB/A5P [mailto:(b) (6) @ang.af mil]  
**Sent:** Wednesday, January 14, 2015 11:12 AM

To: Steve Benz

Cc: mike@pcg-usa.net; lackermann@unitedaero.com; (b) (6) Civ USAF ANG NGB/A5D

Subject: RE: Ownership of Intellectual Property Associated With MAFFS II

Mr. Benz,

I appreciate that. However, I don't think a visit at this point would be worth your time because I do not doubt the sincerity of your position or the quality of your organization -- a meeting cannot improve my assumptions in this area. If or when we get to a phase where more detailed understanding of your company or its product is relevant to our decision-making then we will not be shy about reaching out. There is certainly no need to worry that asserting property rights you sincerely believe you hold somehow damages your relationship with this office. It absolutely does not.

Thanks,

(b) (6)

(b) (6), Col, USAF

Chief, Programs Division (NGB/A5P)

240-612-9367 / DSN 612-9367

Cell (b) (6)

(b) (6)@ang.af.mil

-----Original Message-----

From: Steve Benz [mailto:sbenz@blue-aero.com]

Sent: Wednesday, January 14, 2015 11:20 AM

To: (b) (6) Col USAF ANG NGB/A5P

Cc: mike@pcg-usa.net; lackermann@unitedaero.com; (b) (6) Civ USAF ANG NGB/A5D

Subject: RE: Ownership of Intellectual Property Associated With MAFFS II

COL (b) (6)

Thank you for the rapid response.

I travel a great deal, but within the bounds of that busy schedule, I am more than willing to visit there on short notice and would look forward to doing so at your invitation. The purpose of such a visit would be to give you a face-to-face sense for our sincerity and eagerness to work with the ANG and USFS to move forward on the cost effective modification and/or manufacture of new MAFFS just as quickly as possible - especially given the perishable nature of currently appropriated funding.

steve benz

6501B Nob Hill Rd., Tamarac, FL 33321

tel: 954-718-4404

cell: 954-608-9665

email: sbenz@blueaero.com

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From: (b) (6) Col USAF ANG NGB/A5P [mailto:(b) (6)@ang.af.mil]

Sent: Wednesday, January 14, 2015 9:08 AM

To: Steve Benz

Cc: mike@pcg-usa.net; lackermann@unitedaero.com; (b) (6) Civ USAF ANG NGB/A5D

Subject: RE: Ownership of Intellectual Property Associated With MAFFS II

Mr. Benz,

Thank you very much for this information, for the statement of your position and motivations, and for your enthusiasm for what your team is able to offer. I will provide the information you provided to those who will determine NGB's position with regard to the legal rights to the technical data and the implications of any rights for NGB's actions going forward. I likewise look forward to continuing an open and constructive dialogue with you and your representatives.

(b) (6)

(b) (6) Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6) @ang.af.mil

-----Original Message-----

From: Steve Benz [<mailto:sbenz@blue-aero.com>]

Sent: Wednesday, January 14, 2015 8:52 AM

To: (b) (6) Col USAF ANG NGB/A5P

Cc: mike@pcg-usa.net; lackermann@unitedaero.com

Subject: Ownership of Intellectual Property Associated With MAFFS II

Dear COL (b) (6),

My name is Steve Benz, I am the Director of Maffs Corp. and I write to you here today to follow up on previous discussions you have had with Mike Hillestad of Patriot Consulting Group concerning Maffs Corp.'s legal rights to the ownership of data associated with the MAFFS II aerial firefighting system (often referenced in the attached documents as AFFS.) We were provided your point of contact by Mike who indicated you were the cognizant authority for this matter regarding the National Guard Bureau.

Let me begin by stating outright: Maffs Corp. is the exclusive owner of the technical data associated with the MAFFS II. That fact is most clearly recognized by the US Forest Service in the e-mail found here as the first of several attachments: Scott Fisher's e-mail input to me from last June. Maffs Corp. provided the requested consolidated technical data only after receiving the Forest Service's direct confirmation of this fact. The countersigned, fully executed agreement for the use of the data is the second attachment.

The third through seventh attachments deal with the erroneous assertion that in one of its contract modifications Aero Union Corp. transferred system data rights to the USFS. As you can see from the provided documents, summarized in the third attachment, any transfer of technical know-how was limited in terms of scope and timeframe. Thus, at this point, no entity, including USFS, other than Maffs Corp. has the right to apply MAFFS II technical data in any manner other than system maintenance - as specifically recognized by the USFS in its letter to Maffs Corp. last year.

Finally, the eighth attachment is the Bill of Sale from Comerica Bank (dba VRB Corp.) to United Aeronautical (UAC), a partner in Maffs Corp. Within this document it is clear that ownership of the intellectual property formerly associated with Aero Union Corp. is transferred to UAC (Maffs Corp.)

Col. (b) (6), I know that Mike has already pointed out the following input to you previously, but it bears repeating here: we do not assert our legal data rights in order to delay or diminish USFS / ANG efforts to redesign, reconfigure, and/or acquire new systems. Quite the opposite. We do so only in an effort to ensure our rightful and highly positive participation in any such effort. We've put together a great team of knowledgeable and capable technical and manufacturing experts and we're ready to modify and/or build MAFFS systems right now. Mike said it best: we do this not to be a part of the problem, but instead to be part of the solution.

We look forward to a robust and positive dialogue with both the ANG and USFS on this matter and can visit with you, your staff, and that of the USFS at your request at any point to achieve a fair and win-win outcome.

Steve Benz

Director, Maffs Corp.

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**From:** [Steve Benz](#)  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Cc:** [mike@pcg-usa.net](mailto:mike@pcg-usa.net); [lackermann@unitedaero.com](mailto:lackermann@unitedaero.com); (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** RE: Ownership of Intellectual Property Associated With MAFFS II  
**Date:** Wednesday, January 14, 2015 1:15:27 PM

---

Col. (b) (6),

Thank you for your note and fully understood on your guidance. We stand by prepared to support you, the ANG, the USFS, and, generally, the notion of MAFFS II for aerial firefighting in any practical way.

You know where to reach us and we look forward to when you do.

steve benz

6501B Nob Hill Rd., Tamarac, FL 33321

tel: 954-718-4404

cell: 954-608-9665

email: sbenz@blueaero.com

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**Subject:** RE: Ownership of Intellectual Property Associated With MAFFS II

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Chief, Programs Division (NGB/A5P)

240-612-9367 / DSN 612-9367

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(b) (6)

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Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6) 4  
(b) (6) @ang.af mil

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Sent: Wednesday, January 14, 2015 8:52 AM  
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Steve Benz

Director, Maffs Corp.

6501B Nob Hill Rd., Tamarac, FL 33321  
tel: 954-718-4404  
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**From:** [Kyri Tsircou](#)  
**To:** "(b) (6)" [Col USAF ANG NGB/A5P](#)  
**Cc:** "(b) (6)" [LTC USARMY NG NGB \(US\)](#)  
**Subject:** RE: Technical and Intellectual Property Rights to MAFFS II  
**Date:** Thursday, April 23, 2015 4:51:35 PM  
**Attachments:** [2015-03-05 - Letter to Col \(b\) \(6\) USAF - MAFFS.PDF](#)

---

Col. (b) (6),  
I hope all is well. I am following up to see there any comments or questions regarding our letter to you, date March 5, 2015.  
Best regards,  
Kyri

TSIRCOU INTELLECTUAL PROPERTY LAW  
515 S. Flower Street, 36th Floor  
Los Angeles, CA 90071  
p: 323.660.9916  
f: 323.660.9917  
c: 310.480.0064  
web: [www.tsircoulaw.com](http://www.tsircoulaw.com)  
email: [kyri@tsircoulaw.com](mailto:kyri@tsircoulaw.com)

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-----Original Message-----

**From:** "(b) (6)" [Col USAF ANG NGB/A5P \[mailto:\(b\) \(6\)@ang.af mil\]](#)  
**Sent:** Thursday, March 05, 2015 1:42 PM  
**To:** Kyri Tsircou  
**Cc:** "(b) (6)" [LTC USARMY NG NGB \(US\)](#)  
**Subject:** RE: Technical and Intellectual Property Rights to MAFFS II

Thank you so much for getting this to me. I expect that a government attorney I work with will get in touch with questions and I will pass this to him right away.

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6)@ang.af mil

-----Original Message-----

**From:** Kyri Tsircou [\[mailto:kyri@tsircoulaw.com\]](mailto:kyri@tsircoulaw.com)  
**Sent:** Thursday, March 05, 2015 2:23 PM  
**To:** "(b) (6)" [Col USAF ANG NGB/A5P](#)  
**Subject:** Technical and Intellectual Property Rights to MAFFS II

Col. (b) (6),



Please see attached letter concerning IP rights to the AFFS units owned by United Aeronautical Corp. Please let me know if you have any questions.

Best regards,

Kyri Tsircou

test - 4 <<http://www.tsircoulaw.com/>>

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March 5, 2015

UAC-00597

*Via Email:* (b) (6) @ang.af.mil

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
Air National Guard Readiness Center  
Andrews AFB, MD 20762

Re: Technical and Intellectual Property Rights to MAFFS II

Col. (b) (6):

We represent United Aeronautical Corp. (herein, "United Aero"), owner of the MAFFS family of products ("MAFFS"), in intellectual property matters. United Aero and the company from which United Aero acquired MAFFS have spent considerable time and effort building the intellectual property portfolio and the consumer goodwill in its systems.

The intellectual property rights for MAFFS transferred several times, with the final transfer to United Aero on September 20, 2013. United Aero is now the owner of all the IP related to the MAFFS I and MAFFS II fire retardant tank systems "systems", including: inventions; patents and patent applications; trademarks; data right; and all other relevant IP relating to the systems (individually and collectively, the "MAFFS IP").

It has recently come to our attention that there is confusion regarding the federal government's interest in the MAFFS IP, particularly as it relates to prior agreement between the USDA Forest Service ("USFS") and Aero Union Corp (AUC).

More particularly, we were informed that through correspondence with Col. (b) (6), Chief of the Programs Division for USAF ANG that there is a question regarding the rights the federal government has to the technical data associated with MAFFS.

For the reasons set forth below, it is our position that federal government's interest, via USFS, is limited only to using the relevant data for the continued operation and maintenance of the MAFFS product, only. This excludes any right to use MAFFS IP for any subsequent manufacturing, development or related activities without approval from United Aero.

By way of background, on April 10, 2000, AUC and USFS entered into an agreement (Contract 54-024B-1-2159; "Agreement"), for the purpose of designing,

developing, fabricating, and verifying a new prototype Airborne Fire Fighting System (“AFFS”). A series of 63 modifications were made to this Agreement, the first of which was on November 27, 2000, and the last of which was on December 17, 2009.

This Agreement, modifications, Statement of Work, and Agreement for Release and Delivery all provide that USFS is allowed access to the technical data contained in the data drive for the limited purpose of system maintenance and operation. USFS had more controlled access to the data drive during the period of the “Turn Key Deployment Program,” which expired on December 31, 2013.

Section 12.0 of the Agreement established the “Turn Key Deployment Program” (“Program”). The Turn Key Deployment Program was to provide maintenance and support of (9) AUC produced and delivered MAFFS II systems, and (14) trailers which began on January 1, 2009 and continued throughout a five-year period of performance which ended on December 31, 2013.

The Program also incorporated provisions from the Statement of Work ASD 498C, stating: Drawing and Data Package. “Aero Union will provide drawings and a data package adequate to allow the USFS to build an AFFS unit or hire another vendor to build an AFFS unit.” However, access to these drawings only applied to the time specified by the Turn Key Deployment Program. That time ended in December 30, 2013, along with the end of the warranty period for the Turn Key Deployment Program. There is no other reference in any supporting documentation, including the Statement of Work or any of its modifications, which would indicate that USFS has any other rights to the technical data or drawings owned by USFS for the purpose of the Program.

Moreover, on May 3, 2014, United Aero and USFS entered into an agreement (“The Agreement for Release and Delivery between United Aero and USFS”), in which United Aero provided to USFS a drive containing data relating to MAFFS. This agreement made included certain statement of clarification relating to United Aero ownership of the IP and USFS allowed scope of use, namely, for operation and maintenance purposes. In the relevant section, the agreement provides:

“USFS and UAC each acknowledges and agrees that, as set forth in Contract No. 54-024B-1-2159, issued April 10, 2000, the technical data produced or specifically used or related to the [AFFS] developed pursuant to such contract **shall remain the property of UAC** (as the purchaser of assets of Aero from its secured creditor, including the System) and USFS shall have unlimited rights to view



and use the data **required for the continued operation and maintenance of the AFFS product.**" (Emphasis added.)

Note that the USFS's rights are limited in scope—they are only allowed access for the continued operation and maintenance of the AFFS products, which are those that USFS currently possesses, only. As such, the any rights USFS might have had to the data are limited to viewing and using the data for operation and maintenance purposes only.

Any data used beyond the rights detailed above are unauthorized. Any damages by this unauthorized use would harm our client, including, but not limited to, damages in lost profits and lost commercial value. Any use or maintenance of United Aero's intellectual property that may result in infringement can also result in damages. If USFS wants to use United Aero's IP going forward for the development of future systems, they will have to do it through United Aero.

If you dispute our conclusions, please provide a written statement setting forth the factual bases, contract sections, and related analysis for our consideration.

This letter is sent without prejudice as to the rights and remedies available to our client, including without limitation, an accounting for damages and profits if legal action is necessary.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kyriacos Tsircou", with a stylized flourish at the end.

Kyriacos Tsircou, Esq.

March 5, 2015

UAC-00597

*Via Email:* (b) (6) @ang.af.mil

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
Air National Guard Readiness Center  
Andrews AFB, MD 20762

Re: Technical and Intellectual Property Rights to MAFFS II

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Kyriacos Tsircou, Esq.

**From:** (b) (6) Col USAF NGB A5 (US)  
**To:** (b) (6); (b) (6) Col USAF ANG NGB/A5P"  
**Cc:** (b) (6) LTC USARMY NG NGB (US)  
**Subject:** RE: Technical and Intellectual Property Rights to MAFFS II  
**Date:** Thursday, April 23, 2015 4:55:24 PM

---

Mr. (b) (6),

Thank you for following up. Expect a response in the next couple of work days.

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)

-----Original Message-----

**From:** Kyri Tsircou [mailto:kyri@tsircoulaw.com]  
**Sent:** Thursday, April 23, 2015 4:52 PM  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Cc:** (b) (6) LTC USARMY NG NGB (US)  
**Subject:** RE: Technical and Intellectual Property Rights to MAFFS II

(b) (6),

I hope all is well. I am following up to see there any comments or questions regarding our letter to you, date March 5, 2015.

Best regards,  
Kyri

**TSIRCOU INTELLECTUAL PROPERTY LAW**

515 S. Flower Street, 36th Floor  
Los Angeles, CA 90071  
p: 323.660.9916  
f: 323.660.9917  
c: 310.480.0064  
web: www.tsircoulaw.com  
email: kyri@tsircoulaw.com

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-----Original Message-----

**From:** (b) (6) Col USAF ANG NGB/A5P [mailto:(b) (6) @ang.af.mil]  
**Sent:** Thursday, March 05, 2015 1:42 PM  
**To:** Kyri Tsircou  
**Cc:** (b) (6) LTC USARMY NG NGB (US)  
**Subject:** RE: Technical and Intellectual Property Rights to MAFFS II

Thank you so much for getting this to me. I expect that a government attorney I work with will get in touch with questions and I will pass this to him right away.

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6)@ang.af mil

-----Original Message-----

From: Kyri Tsircou [<mailto:kyri@tsircoulaw.com>]  
Sent: Thursday, March 05, 2015 2:23 PM  
To: (b) (6) Col USAF ANG NGB/A5P  
Subject: Technical and Intellectual Property Rights to MAFFS II

Col. (b) (6),

Please see attached letter concerning IP rights to the AFFS units owned by United Aeronautical Corp. Please let me know if you have any questions.

Best regards,

Kyri Tsircou

test - 4 <<http://www.tsircoulaw.com/>>

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**From:** (b) (6) LTC USARMY NG NGB (US)  
**To:** (b) (6) Col USAF NGB A5 (US)  
**Subject:** Re: Technical and Intellectual Property Rights to MAFFS II (UNCLASSIFIED)  
**Date:** Wednesday, April 01, 2015 8:59:12 PM

---

Sir -- (b) (5)

[REDACTED]

[REDACTED]

[REDACTED]

(b) (6). Have an enjoyable weekend.

LTC (b) (6)

----- Original Message -----

**From:** (b) (6) Col USAF ANG NGB/A5P [mailto:(b) (6) @ang.af mil]  
**Sent:** Wednesday, April 01, 2015 04:51 PM  
**To:** (b) (6) LTC USARMY NG NGB (US)  
**Subject:** RE: Technical and Intellectual Property Rights to MAFFS II (UNCLASSIFIED)

LTC (b) (6),

(b) (5)

[REDACTED]

[REDACTED]

(b) (6) but I will be watching BlackBerry if you are able to reply.

Thanks

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6) @ang.af mil

-----Original Message-----

**From:** (b) (6) LTC USARMY NG NGB (US) [mailto:(b) (6) mil@mail mil]  
**Sent:** Thursday, March 19, 2015 9:33 AM  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Subject:** RE: Technical and Intellectual Property Rights to MAFFS II (UNCLASSIFIED)



Classification: UNCLASSIFIED  
Caveats: NONE

(b) (5)

Thanks,

LTC (b) (6)

-----Original Message-----

From: (b) (6) Col USAF ANG NGB/A5P [mailto:(b) (6)@ang.af.mil]  
Sent: Friday, March 06, 2015 9:47 AM  
To: (b) (6) LTC USARMY NG NGB (US)  
Subject: Re: Technical and Intellectual Property Rights to MAFFS II

Great. Thank you.

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)

----- Original Message -----

From: (b) (6) LTC USARMY NG NGB (US) [mailto:(b) (6).mil@mail.mil]  
Sent: Friday, March 06, 2015 09:43 AM  
To: (b) (6) Col USAF ANG NGB/A5P  
Subject: Re: Technical and Intellectual Property Rights to MAFFS II

Sir,

(b) (5)

Thanks,

LTC (b) (6)

----- Original Message -----

From: (b) (6) Col USAF ANG NGB/A5P [mailto:(b) (6)@ang.af.mil]  
Sent: Thursday, March 05, 2015 03:47 PM  
To: (b) (6)

Subject: FW: Technical and Intellectual Property Rights to MAFFS II

LTC (b) (6) and Ms (b) (6)

(b) (5)

(b) (5)

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6) @ang.af mil

-----Original Message-----

From: Kyri Tsircou [<mailto:kyri@tsircoulaw.com>]  
Sent: Thursday, March 05, 2015 2:23 PM  
To: (b) (6) Col USAF ANG NGB/A5P  
Subject: Technical and Intellectual Property Rights to MAFFS II

Col. (b) (6)

Please see attached letter concerning IP rights to the AFFS units owned by United Aeronautical Corp. Please let me know if you have any questions.

Best regards,

Kyri Tsircou

test - 4 <<http://www.tsircoulaw.com/>>

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Classification: UNCLASSIFIED  
Caveats: NONE

**From:** [Mike](#)  
**To:** (b) (6) [Civ USAF ANG NGB/A5D](#)  
**Subject:** Re: Thanks  
**Date:** Friday, December 19, 2014 10:00:59 AM

---

(b) (6), final email on this today.

As you talk to FS, please let them know my client wants to work with them to deliver a quality product. All my client wants is to come to an understanding on the whole IP issue and what FS intentions are.

Mike

Sent from my iPhone

> On Dec 19, 2014, at 6:34 AM (b) (6) Civ USAF ANG NGB/A5D (b) (6) @ang.af.mil> wrote:  
>  
> Sir,  
>  
> Just received your email...I am waiting on documents from FS as well. I will be glad to review what you have too,  
and discuss over the phone...  
>  
> V/r  
> (b) (6)  
>  
> (b) (6) E, GS-13, DAF  
> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
> DSN: 612-8525  
> Com: (240) 612-8525  
> Cell: (b) (6)  
> BB: (b) (6)  
>  
> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR OFFICIAL  
>  
> USE ONLY (FOUO) information that must be protected under the Privacy Act of  
> 1974 (see AFI 33-332). Do not release outside of DoD channels without the  
> consent of the originator's office. If you received this message in error,  
> please notify the sender by reply e-mail and delete all copies of message.  
>  
>  
> -----Original Message-----  
> From: mike [<mailto:mike@pcg-usa.net>]  
> Sent: Thursday, December 18, 2014 6:04 PM  
> To: (b) (6) Civ USAF ANG NGB/A5D  
> Subject: RE: Thanks  
>  
> (b) (6), spent the day on the phone reviewing documents from MAFFS Corp. Mod 19, Mod 23 and 24, and the  
termination letter from FS to AUC.  
>  
> There is a lot going on here that you may want to be aware of. I understand the FS position, but there are legal  
opinions out there (and signed docs from the FS) that may differ.  
>  
> I will send you their take on it tomorrow and perhaps a way ahead would have you talk direct to them, and  
possibly facilitate a meeting between them you and FS.  
>  
> Can I call you tomorrow?

>  
> Mike  
>  
>> On December 17, 2014 at 2:10 PM (b) (6) Civ USAF ANG NGB/A5D" <(b) (6)@ang.af.mil>  
wrote:  
>>  
>>  
>> It was great...I appreciate you taking the time with us, so we have a better understanding of the company's  
position.  
>>  
>> V/r  
>> (b) (6)  
>>  
>> (b) (6), GS-13, DAF  
>> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
>> DSN: 612-8525  
>> Com: (240) 612-8525  
>> Cell: (b) (6)  
>> BB: (b) (6)  
>>  
>> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR  
>> OFFICIAL  
>>  
>> USE ONLY (FOUO) information that must be protected under the Privacy  
>> Act of  
>> 1974 (see AFI 33-332). Do not release outside of DoD channels without  
>> the consent of the originator's office. If you received this message  
>> in error, please notify the sender by reply e-mail and delete all copies of message.  
>>  
>>  
>> -----Original Message-----  
>> From: Mike [<mailto:mike@pcg-usa.net>]  
>> Sent: Wednesday, December 17, 2014 1:26 PM  
>> To: (b) (6) C Civ USAF ANG NGB/A5D; (b) (6) Civ USAF  
>> ANG NGB/A3M  
>> Subject: Thanks  
>>  
>> Thank you both for your time this morning. Sorry about being so passionate about this.  
>>  
>> Mike  
>>  
>> Sent from my iPhone  
> Mike Hillestad  
> Partner  
> Patriot Consulting Group  
> 301.752.5313

**From:** [H&A](#)  
**To:** (b) (6) [CIV USAF NGB A5 \(US\)](#)  
**Cc:** (b) (6) [CIV NG NGB \(US\)](#); (b) (6) [iv USAF ANG NGB/A5D Kruse](#)  
**Subject:** Re: Tomorrow  
**Date:** Wednesday, April 29, 2015 7:40:23 AM

---

Thanks guys. See you at 1100.

Sent from my iPhone

> On Apr 29, 2015, at 7:20 AM, (b) (6) CIV USAF NGB A5 (US) (b) (6) @mail.mil>  
wrote:

>  
> (b) (6),  
>  
> Can you setup a telecom with Ron after 11am? I have a meeting at 930 and won't be available until after 11.

>  
> V/r  
> (b) (6)  
>  
> (b) (6), GS-13, DAF  
> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
> DSN: 612-8525  
> Com: (240) 612-8525  
> Cell (b) (6)  
> BB (b) (6)

> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR OFFICIAL

>  
> USE ONLY (FOUO) information that must be protected under the Privacy Act of  
> 1974 (see AFI 33-332). Do not release outside of DoD channels without the  
> consent of the originator's office. If you received this message in error,  
> please notify the sender by reply e-mail and delete all copies of message.

> -----Original Message-----

> From: H&A [<mailto:hillestadandassociates@comcast.net>]  
> Sent: Tuesday, April 28, 2015 2:23 PM  
> To: (b) (6) CIV NG NGB (US); (b) (6) Civ USAF ANG NGB/A5D (b) (6)  
> Subject: Tomorrow

> Gentlemen I, it would be of great help if we could meet in the morning as discussed and perhaps talk to the guy at red stone about meeting potentially with my MAFFS corp guys.

>  
> One of the owners (not Steve) is not a happy camper and I am scheduled to talk to him Thursday on whether there is a way ahead here or not.

> I need some ammo to talk him off the ledge. HELP!"

> As always, thanks

> Mike

> Sent from my iPhone



Reclama of the rationale for rejecting proposed change in Item 29

**Coordinator Comment:** Change the paragraph:

“A DSC arrangement ~~is an ineffective~~ could be an effective option for establishing clear lines of authority of USAFR and ANG C-130 aircrews performing MAFFS support of NIFC if appropriate command authority arrangements are employed. ~~However~~, ANG and the California NG submit that unity of effort is maintained consistent with statutory responsibilities in operations involving Federal forces and non-federalized NG forces with Federal forces under Federal command and control and non-federalized NG forces under State command and control.”

**Coordinator Justification:** The working group has not effectively research the DSC option and therefore cannot state that a DSC is an ineffective option, however, CA and ANG believe that the DSC could be effective. Perspective-write to be unbiased.

**Originator Justification for Resolution:** DSC for the MAFFS AEG is addressed in detail in the report. The findings and recommendations are supported by a majority of the WG members. Command authority is not “arranged,” it is established through statutory authorities. Any “arrangements” between States and their military commanders do not establish command authority or a DSC.

(b) (6) erred by not using the proper term for the vehicle for establishing the command arrangements for the dual-status commander and defining the nature and extent of control to be exercised by a combatant commander over forces in Titles 5, 10, and 32. The proper term is command arrangement agreement.

The originator’s justification for rejecting the proposal is partially correct, but reflects a lack of understanding of the how the chain of legitimacy for command authorities is established and the flexibility that process conveys. His perspective remains focused on the existing command authorities combatant command, operational control, tactical control, and support to the exclusion of any other command authorities that can be developed in accordance with existing statutes, DoD policy, and joint doctrine. He is, however, quite correct in pointing out that a command authority is establish through statutory authorities, which, in this case, is Section 164 of Title 10, USC. He is also correct when he points out that, “Any “arrangements” between States and their military commanders do not establish command authority or a DSC. That is why a command arrangement agreement is an agreement between the sovereign of a State, the governor, and the representative of the sovereign of the central government of the United States (President and Commander in Chief), the Secretary of Defense.

In the same manner, JP 1, *Doctrine for the Armed Forces of the United States*, constitutes the command arrangement agreement among the four Services for joint operations, developed under the auspices of the principal military advisor to the Secretary of Defense, the Chairman, of the Joint Chiefs of Staff, pursuant to DoD policy set forth in DoDD 5100.01, *Functions of the*

*Department of Defense and Its Major Components.* The statutory law for command arrangements and authorities implemented by DoDD 5100.01 and JP 1 is Section 164, Title 10, USC. The legitimacy of this chain from statutory law implemented by the administrative law of DoDD 5100.01 and JP 1 is achieved through agreement by cognizant authorities at each level, i.e. Congress, the Secretary of Defense representing the Executive Department, and the Chairman, Joint Chiefs of Staff for the uniformed military under the authority, direction, and control (ruled as a “command authority” by the OSD/GC) of the Secretary of Defense.

It should be apparent that the Secretary of Defense, representing the President, can develop and establish by agreement, expressions of other command authorities which define the nature and extent of the control (defined in JP 1 as, “Authority that may be less than full command exercised by a commander over part of the activities of subordinate or other organizations.”

Source: JP 1.) a commander may exercise. In fact, the command authorities of combatant command, operational control, tactical control, and support are statements of authority that are less than full command, and, therefore, statements of the nature and extent of control exercised by a commander in the Title 10, USC chain of command. The Chairman, JCS, on behalf and under the authority of, Secretary of Defense negotiates and agrees to expressions of command authority that can be exercised by commanders from allied nations over U.S. forces pursuant to JP 3-16, *Multinational Operations*.

Therefore, it is well within the authority of the Secretary of Defense to negotiate and agree to a command arrangement agreement with State governors laying out the organization; stating conditions of assignment or attachment of forces, regardless of legal status; and establishing a legitimate command authority defining the nature and extent of the control exercised by a combatant commander and his subordinate commanders, including dual-status commanders, over forces in multiple legal statuses.

**From:** [Kyri Tsircou](#)  
**To:** (b) (6) [Col USAF NGB A5 \(US\)](#)  
**Subject:** Technical and Intellectual Property Rights to MAFFS II  
**Date:** Thursday, March 05, 2015 2:25:17 PM  
**Attachments:** [image001.png](#)  
[2015-03-05 - Letter to Col \(b\) \(6\) USAF - MAFFS.pdf](#)

---

Col. (b) (6),

Please see attached letter concerning IP rights to the AFFS units owned by United Aeronautical Corp. Please let me know if you have any questions.

Best regards,

Kyri Tsircou

<<http://www.tsircoulaw.com/>>

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March 5, 2015

UAC-00597

Via Email: ian.bryan@ang.af.mil

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
Air National Guard Readiness Center  
Andrews AFB, MD 20762

Re: Technical and Intellectual Property Rights to MAFFS II

Col. (b) (6):

We represent United Aeronautical Corp. (herein, "United Aero"), owner of the MAFFS family of products ("MAFFS"), in intellectual property matters. United Aero and the company from which United Aero acquired MAFFS have spent considerable time and effort building the intellectual property portfolio and the consumer goodwill in its systems.

The intellectual property rights for MAFFS transferred several times, with the final transfer to United Aero on September 20, 2013. United Aero is now the owner of all the IP related to the MAFFS I and MAFFS II fire retardant tank systems "systems", including: inventions; patents and patent applications; trademarks; data right; and all other relevant IP relating to the systems (individually and collectively, the "MAFFS IP").

It has recently come to our attention that there is confusion regarding the federal government's interest in the MAFFS IP, particularly as it relates to prior agreement between the USDA Forest Service ("USFS") and Aero Union Corp (AUC).

More particularly, we were informed that through correspondence with Col (b) (6), Chief of the Programs Division for USAF ANG that there is a question regarding the rights the federal government has to the technical data associated with MAFFS.

For the reasons set forth below, it is our position that federal government's interest, via USFS, is limited only to using the relevant data for the continued operation and maintenance of the MAFFS product, only. This excludes any right to use MAFFS IP for any subsequent manufacturing, development or related activities without approval from United Aero.

By way of background, on April 10, 2000, AUC and USFS entered into an agreement (Contract 54-024B-1-2159; "Agreement"), for the purpose of designing,

developing, fabricating, and verifying a new prototype Airborne Fire Fighting System (“AFFS”). A series of 63 modifications were made to this Agreement, the first of which was on November 27, 2000, and the last of which was on December 17, 2009.

This Agreement, modifications, Statement of Work, and Agreement for Release and Delivery all provide that USFS is allowed access to the technical data contained in the data drive for the limited purpose of system maintenance and operation. USFS had more controlled access to the data drive during the period of the “Turn Key Deployment Program,” which expired on December 31, 2013.

Section 12.0 of the Agreement established the “Turn Key Deployment Program” (“Program”). The Turn Key Deployment Program was to provide maintenance and support of (9) AUC produced and delivered MAFFS II systems, and (14) trailers which began on January 1, 2009 and continued throughout a five-year period of performance which ended on December 31, 2013.

The Program also incorporated provisions from the Statement of Work ASD 498C, stating: Drawing and Data Package. “Aero Union will provide drawings and a data package adequate to allow the USFS to build an AFFS unit or hire another vendor to build an AFFS unit.” However, access to these drawings only applied to the time specified by the Turn Key Deployment Program. That time ended in December 30, 2013, along with the end of the warranty period for the Turn Key Deployment Program. There is no other reference in any supporting documentation, including the Statement of Work or any of its modifications, which would indicate that USFS has any other rights to the technical data or drawings owned by USFS for the purpose of the Program.

Moreover, on May 3, 2014, United Aero and USFS entered into an agreement (“The Agreement for Release and Delivery between United Aero and USFS”), in which United Aero provided to USFS a drive containing data relating to MAFFS. This agreement made included certain statement of clarification relating to United Aero ownership of the IP and USFS allowed scope of use, namely, for operation and maintenance purposes. In the relevant section, the agreement provides:

“USFS and UAC each acknowledges and agrees that, as set forth in Contract No. 54-024B-1-2159, issued April 10, 2000, the technical data produced or specifically used or related to the [AFFS] developed pursuant to such contract **shall remain the property of UAC** (as the purchaser of assets of Aero from its secured creditor, including the System) and USFS shall have unlimited rights to view



and use the data **required for the continued operation and maintenance of the AFFS product.**" (Emphasis added.)

Note that the USFS's rights are limited in scope—they are only allowed access for the continued operation and maintenance of the AFFS products, which are those that USFS currently possesses, only. As such, the any rights USFS might have had to the data are limited to viewing and using the data for operation and maintenance purposes only.

Any data used beyond the rights detailed above are unauthorized. Any damages by this unauthorized use would harm our client, including, but not limited to, damages in lost profits and lost commercial value. Any use or maintenance of United Aero's intellectual property that may result in infringement can also result in damages. If USFS wants to use United Aero's IP going forward for the development of future systems, they will have to do it through United Aero.

If you dispute our conclusions, please provide a written statement setting forth the factual bases, contract sections, and related analysis for our consideration.

This letter is sent without prejudice as to the rights and remedies available to our client, including without limitation, an accounting for damages and profits if legal action is necessary.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kyriacos Tsircou", with a stylized flourish at the end.

Kyriacos Tsircou, Esq.

**INFORMATION PAPER ON  
NORAD AND USNORTHCOM 2015 WILDLAND FIRE FIGHTING SEASON  
*A Scene Setter and Analysis of Wildland Fire Fighting***

**BOTTOMLINE UP FRONT (BLUF).**

- On behalf of the Director, N-NC/J7, an analysis of past Wildland Fire Fighting (WFF) observations recorded in our Joint Lessons Learned Information System (JLLIS) and vetted through our formal Corrective Action Program process is presented for the Commands' situational awareness. Analysis and linkage to existing N-NC Mission Areas, Lines of Operation, and existing plans is detailed in the paragraphs below.
- NORAD and USNORTHCOM (N-NC) continues to monitor, coordinate, and assist in the mitigation of wildland fire fighting cooperation between FEMA and USNORTHCOM during future complex catastrophes such as the upcoming wildland fire fighting season.

**BACKGROUND.**

- During 2014 the primary concern for significant wildland fires was across the Southeastern U.S. Significant precipitation over the past few months and a cold early winter has greatly reduced the potential entering the new year. The exception could be a more normal development of fire occurrence in far southern Florida. However, the recent wildfires in California have proven the exception to this prediction.
- March and April typically mark the beginning of the significant wildfire season in the Southwest. This begins with grass and lower elevation fires. Good precipitation during the fall and early winter will help establish a significant fire fuel crop. An abundance of fire fuels is highly probable in the Southwest, especially eastern New Mexico and West Texas. This will increase significant wildland fire potential to above normal in those areas. Wind events typically of the spring will enhance the potential.
- Predictions for the rest of the U.S. appears to be for a normal fire season.
- Fire seasons are becoming longer and fires are growing larger. A wind driven fire in dry conditions won't respect roads, fences, or blocks of homes; and it will consume anything combustible that lies in its path. The start and spread of fires is created by the fire triangle - the right combination of fuel, weather, and topography. Give it an ignition source and this combination can be deadly and the results catastrophic

- 2010 - 2013 Wildland Fire Fighting Statistics:

<b>Decade-to-Date Statistics</b>		
2013 (1/1/13 - 1/10/13)	Fires: 83	Acres: 2,885
2012 (1/1/12 - 1/10/12)	Fires: 655	Acres: 47,410
2011 (1/1/11 - 1/10/11)	Fires: 331	Acres: 3,233
2010 (1/1/10 - 1/10/10)	Fires: 128	Acres: 4,27

**ENDSTATE.** Based upon recorded observations in JLLIS gleaned from firsthand accounts and vetted through the Hotwash and Facilitated After Action Review process, this scene-setter information paper presents the highlights of recent past performance by the Commands during WFF seasons.

**2015 NATURAL DISASTERS.** Natural catastrophes such as wildfires have a debilitating effect on the nation's populace, property, and economy. NORAD, and specifically US Northern Command and its Interagency Partners must be poised to respond at the appropriate time to mitigate the consequences of these catastrophic incidents while simultaneously meeting mission requirements.

## **DISCUSSION.**

- NORAD and USNORTHCOM Mission Areas
  - The NORAD and USNORTHCOM Mission Areas as outlined in Presidential Policy Directive 8 (PPD-8): Prevention, Protection, Mitigation, Response, and Recovery are summarized below.
    - Prevention: This includes all capabilities necessary to avoid, prevent, or stop a threat using an integrated and layered approach and harnessing the capabilities of Federal, State and Local governments.
    - Protection: This includes all capabilities to safeguard the homeland against man-made or natural disasters.
    - Mitigation: Includes those capabilities necessary to reduce loss of life and property by lessening the impact of disasters
    - Response: This mission area includes those capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.
    - Recovery: These capabilities are necessary to assist communities affected by the incident in recovering rapidly.

- Current Mission Areas germane to Wildland Fire Fighting Season 2015 (not all inclusive) are:
  - Critical Infrastructure Protection (Homeland Defense)
  - Natural Disaster Relief (Civil Support)
  - Public Health Emergency (Civil Support)
  - Interim Emergency Communications (Civil Support)
  - Mass Migration Incident and Emergency (Civil Support)
  
- Excerpt from Commander, NORAD and USNORTHCOM's Posture Statement to Senate Armed Services Committee, 19 March 2013
  - **Wildland Firefighting.** When the Waldo Canyon fire erupted less than 12 miles from my headquarters last June, our DSCA role was brought into sharp focus. No one could have predicted the June 26, 2012 firestorm that was fueled by 65 mile per hour winds and rapidly consumed 346 Colorado Springs homes, some of which belonged to members of my staff. In reaction to this crisis, immediate response support from Fort Carson, Peterson Air Force Base (AFB), Schriever AFB, and Buckley AFB was directed toward the effort, and the Secretary of Defense and the Governor of Colorado quickly authorized a DSC. At the request of NIFC, USNORTHCOM coordinated the deployment of Air National Guard C-130 aircraft, equipped with U.S. Forest Service (USFS) Modular Airborne Firefighting System (MAFFS) to support the federal wildland firefighting effort. Without hesitation, the courageous Airmen operating these aircraft continually put their lives at great risk to save and protect American lives and property during these wildfires.
  - **With senior leaders from the U.S. Department of Agriculture, U.S. Forest Service, Department of Interior, NIFC, and the NGB, we are focused on getting ahead of the next fire season.** Through routine engagement, interagency teamwork, and a collaborative effort of working groups, we have expanded our collective understanding of the implications of and capabilities required to prepare for requests for assistance from our interagency partners' wildland firefighting operations. These include near-term proposals such as integrated training, improved processes for requesting and implementing support, and clarification of lines of authority, ensuring installation preparedness and necessary agreements are in place, and identifying technology transfers that can be accomplished before the next wildland fire season.

- Analysis of observations from past Wildland Fire Fighting Seasons
  - Synchronized Situational Awareness
    - During the WFF mission, there was an ongoing discussion on the Dual Status Commander (DSC) role as the main effort and OPCON to the Joint Force Land Component Commander (JFLCC), and the Joint Force Air Component Commander (JFACC), as a supporting component to the JFLCC. During operations, the Modular Airborne Fire Fighting System (MAFFS) were under C2 or coordinating authority of the JFACC. The DSC assessed a need to have a clear air picture in order to better synchronize with available ground assets. This air picture to the DSC was provided through a Joint Air Component Command Element (JACCE). Subsequently, there was further discussion on whether the JACCE was sufficiently robust to support the DSC and ensure proper synchronization of the Air/Ground effort. N-NC/J55-led WFF Working Group (WG) examined more effective means to ensure clear lines of command and coordination between supporting and supported components in order to provide commonality of effort between the several response cells in such a crisis. This effort also shaped language in OPORD 01-13 to clearly define C2 relationships and staff augmentation for NC components (operational level command) and DSC led JTFs. **(JLLIS #17023)**
    - The function of the JACCE was unclear and as a result may have been insufficiently staffed for the mission. The AFNORTH LNO position was vacant and no one present during Future Operations Cell meetings could describe or agree on the functions of the JACCE. The DSC Commander felt he did not have sufficient personnel on the JACCE to provide him the air picture as well as connectivity with AFNORTH. NORTHCOM J35, AFNORTH and ARNORTH reviewed staff functions of a JACCE to ensure the JACCE is properly staffed to meet stated requirements, recommended conduct an OPD on the functions and composition of an AFNORTH Air Component Coordination Element. **(JLLIS #17005)**
  - Dual Status Command (DSC)
    - Initially there was not a clear understanding of the DSC's WFF mission. NORTHCOM FRAGO 102 directed ARNORTH to assume OPCON of the Joint Support Force – Staff Element (JSF–SE). NC FRAGO 103 directed ARNORTH to accept OPCON of the DSC; however, little information was provided by NORTHCOM as to the mission of the DSC. Initially ARNORTH thought the function of the DSC would be focused on the Waldo Canyon Fires and not the entire state of Colorado as later determined. **(JLLIS #17001)**



- ICW the DSC CONOPS and signed State/DOD MOAs, DSCs are normally considered when there is employment of NG and T10 capabilities for a mission, and are disestablished by either signing party, or when the federal forces are no longer in a DSC. For this WFF event, the DSC was established without federal forces being employed. This was principally due to a recognition by OSD and the CO Governor's office of a likelihood of federal forces being required for WFF effort, and therefore allowed JTF-Centennial, as the DSC to be established to receive federal forces, if required by National Interagency Fire Center (NIFC). Establishing a DSC without federal forces being employed was a new trigger, and created confusion on the criteria/authority to "disestablish" a DSC. **(JLLIS #17022)**
- For any WFF incidents that have an "urban interface" and where an Incident Management Team (IMT) Type 1 has deployed, it is highly recommend NC HQ consider sending a "team of LNOs" under the "NORTHCOM Situational Awareness Team (NSAT)-like" construct. The paradigm for DOD response to a civil support complex incident has shifted from a Joint Task Force CDR (whether T10 or State Active Duty (SAD)) to a Dual Status Commander (DSC) environment. Naturally, the size and scope of the incident will drive the potential need for DOD (T10 and/or T32/SAD) capabilities, which will drive the composition of the "NSAT-like" team of LNOs. **(JLLIS #16110)**
- Cost Capture
  - Under current processes and to ensure timely reimbursement from NIFC and FEMA for Economy or Stafford Act support, mission assignments must be approved prior to movement of DOD forces. During southern California WFF, many DOD assets surged without Defense Coordinating Officer (DCO) validation of the requirement from Local, State, FEMA Region or Tribal request. This places the burden on the unit to request reimbursement through their service or fund with mission dollars. Concur with Joint Director of Military Support (JDOMS) recommendation during NC Hotwash/AAR to provide NORTHCOM funding authority for prepositioning/leaning forward costs in the absence of reimbursable funding. This initiative supports the COCOM's guidance "we cannot live with sequential response anymore - must be parallel in the future." **(JLLIS #12043)**
  - Cost reimbursement/Cost Share for DOD assets requested by National Interagency Fire Center (NIFC), but ISO State Fires, under the Stafford Act requires a 75/25 split of cost with State; with DOD reimbursed only for operational costs (not personnel costs, and only DoD Civilian OT). The Economy Act = 100% reimbursement

by NIFC for all costs incurred (to include personnel). In turn NIFC bills the user, and the State can off-set with FEMA Fire Management Grants, but that only captures equipment costs. Cost is a consideration for the State. In these cases, USNORTHCOM established cost as a consideration. During simultaneous Stafford/Economy Act operations, the command should be prepared to discuss/identify to all parties the options available and economic burden to all parties must be understood by decision makers. (JLLIS #12042)

- Incident Commander

- During the 2012 Wildland Fire Fighting season, the Federal Resource Ordering system failed to provide critical resources when requested by Federal Wild Land Fire Type I Incident Commanders resulting in the Ad Hoc use of non-Federal resources to make up resource shortfalls. Despite the presence of an Active Component DCO representative co-located at the NIFC National Incident Coordination Center (NICC) , at no time was the NORTHCOM Defense Coordinating Element notified by NIFC that Incident Commanders on Federal Wild Fires were experiencing resource shortfalls, nor was any Defense Support to Civil Authorities (DSCA) coordination attempted. Funding for these non-Federal National Guard assets were initially provided out of State of Idaho Emergency funds with full reimbursement from Idaho Department of Lands (IDL) Deficiency Warrant Funds, and then full reimbursement for these IDL funds from the Federal Forest Service (i.e. ultimately fully Federally Funded). (JLLIS #17381)
- Clarity among stakeholders of roles and actions of forces executing missions under Immediate Response Authority (IRA); Emergency Response Authority (ERA); Mutual Agreement Authority (MAA)/Federal Support to Installations; and Defense Support to Civil Authorities was unclear. This complex mission, with federal and state forces operating under diverse authorities, highlighted the need for DOD to ensure a united voice when engaging supported Interagency and local incident commanders. (JLLIS #17025)
- Interagency (Incident Commander) does not fully understand DOD capabilities and how to ask for them. At a minimum, consideration needs to be given towards including the following SMEs who can assist the Incident Commander (IC) in understanding “how to ask” for assistance and “what capabilities” DOD can support:
  - Modular Airborne Fire Fighting (MAFF) SME
  - DSC National Guard SME (i.e., routine NG SAD type work)
  - Search and Rescue (SAR) planner
  - DOD medical/logistics planner
  - If relevant, local DOD installation firefighting SME

- DOD Battalion Ground Firefighter LNO (with respect to the type deployed - either NG or T10). (**JLLIS #17008**)
- Modular Airborne Fire Fighting System (MAFFS)
  - The MAFFS program was created in the 1970s when the US Forest Service (USFS) and DOD had conflicting desires and priorities for aerial response to wild fires on DOD property. The intent of the program was to create an aerial firefighting capability within the Air Force so the DOD did not have to rely on another federal agency to protect DOD resources. The present day MAFFS program no longer provides this full capability. As happened in the 1970s, the DOD wanted to protect DOD resources (USAFA), but was prohibited from using MAFFS when the USFS chose not to use these resources. All of the complex, aerial firefighting airspace was under the control of the USFS air boss and independent DOD use of MAFFS was not an option. Separate air operations within the confined airspace was impractical, so DOD ground forces and equipment (thankfully close at hand at Fort Carson) were the DOD's only resource to ensure USAFA remained secure. (**JLLIS #17029**)
  - N-NC did not utilize a prepare to deploy order (PTDO) for the Category 2 MAFF forces. DSCA EXORD 4.B.2 allows for MAFFS PTDO with the caveat in 12.D.11 that a NIFC fund citation be in place prior to any flight operations being conducted. A PTDO would have shortened the 5.C.3 EXORD timeline by a day, allowing an earlier response - if the incident commander requested it. This could enhance the level of responsiveness that demonstrates DOD's partnership with interagency partners and the public.  
NOTE: The Colorado Springs MAFF unit, as the only AF Reserve MAFF, is the sole organization capable of PTDO, as the other MAFFS are National Guard. (**JLLIS #16999**)
  - There were attempts to place C-130 Modular Airborne Firefighting System (MAFFS) under the C2 of the Dual Status Command. Given the multi-region/multi-state employment capability of the C-130 MAFFS, and the direct support relationship to National Interagency Fire Center/Geographic Area Coordination Center/Incident Commander, placing the DSC in the C2 chain complicated and limited the operational flexibility of the C-130 MAFFS. AFNORTH provided a point paper to Title 10 Deputies/Dual Status Commanders on MAFFS C2, and USFS Fire Traffic Area Air Space control during WFF events where Stafford Act and Economy Act support is being provided by DoD. (**JLLIS #17004**)

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**To:** (b) (6) [Col USAF ANG NGB/A5P](#)  
**Subject:** FW: Technical and Intellectual Property Rights to MAFFS II (UNCLASSIFIED)  
**Date:** Monday, April 20, 2015 12:10:28 PM  
**Attachments:** [pat7165627.pdf](#)

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Classification: UNCLASSIFIED  
Caveats: NONE

Classification: UNCLASSIFIED  
Caveats: NONE





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**Hutter et al.**

(10) **Patent No.:** **US 7,165,627 B2**  
(45) **Date of Patent:** **Jan. 23, 2007**

(54) **PORTABLE AIRBORNE FIREFIGHTING AND SENSING SYSTEM**

(58) **Field of Classification Search** ..... 169/53,  
169/44, 52; 239/171, 146, 149, 337, 373;  
244/118.1, 118.3, 129.5; 49/110, 139, 340  
See application file for complete search history.

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(\*) Notice: Subject to any disclaimer, the term of this  
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(51) **Int. Cl.**

**A62C 25/00** (2006.01)

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**B64D 1/18** (2006.01)

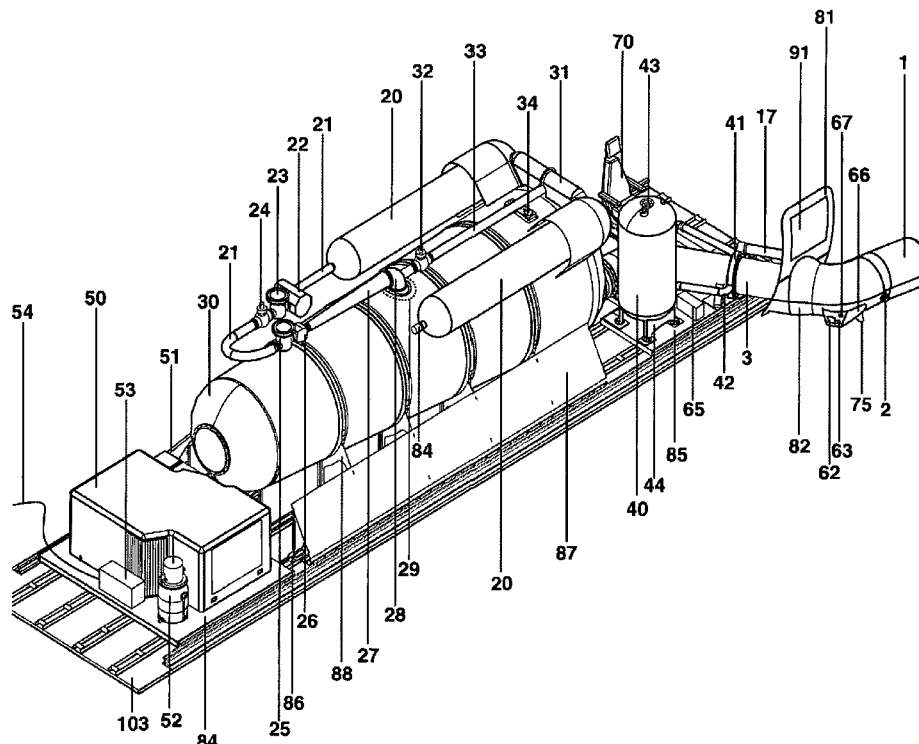
**A01G 25/09** (2006.01)

(52) **U.S. Cl.** ..... **169/53; 169/44; 169/52;**  
**239/171; 239/146; 239/149; 239/373**

(57) **ABSTRACT**

A firefighting apparatus is adapted for use in a host aircraft comprising a fuselage defining an interior and an exterior. The firefighting apparatus includes a pressurizeable retardant tank disposed in the interior of the host aircraft, the retardant tank being capable of roll-on and roll-off installation, an ejection tube in fluid communication with the retardant tank, and a door plug for mounting within a fuselage orifice in the host aircraft. The door plug provides for fluid communication of retardant from the retardant tank through the ejection tube to the exterior of the host aircraft. At least one sensor is operably connected to the firefighting apparatus to effect user-discernable data for effecting retardant delivery.

**34 Claims, 8 Drawing Sheets**



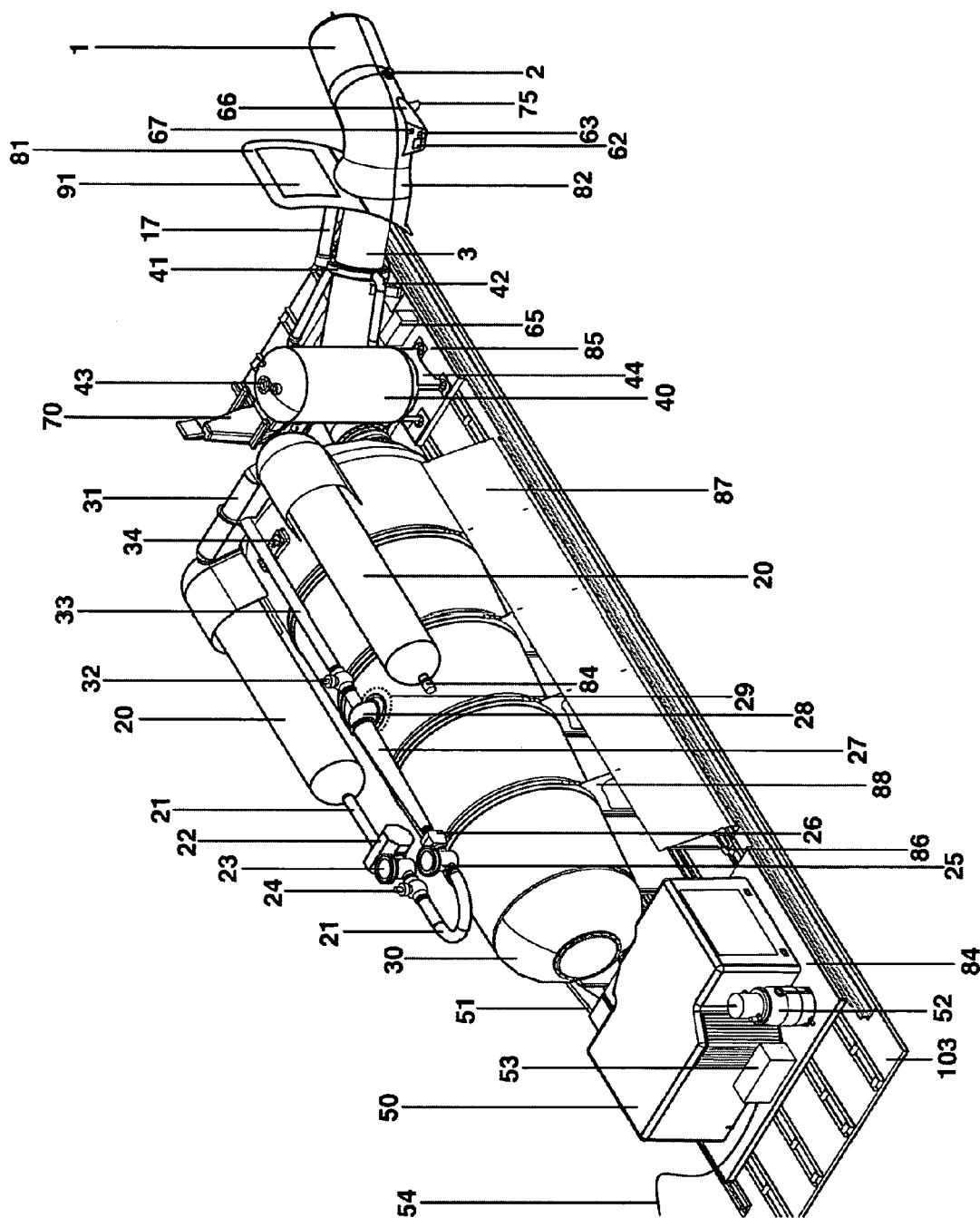


FIGURE 1

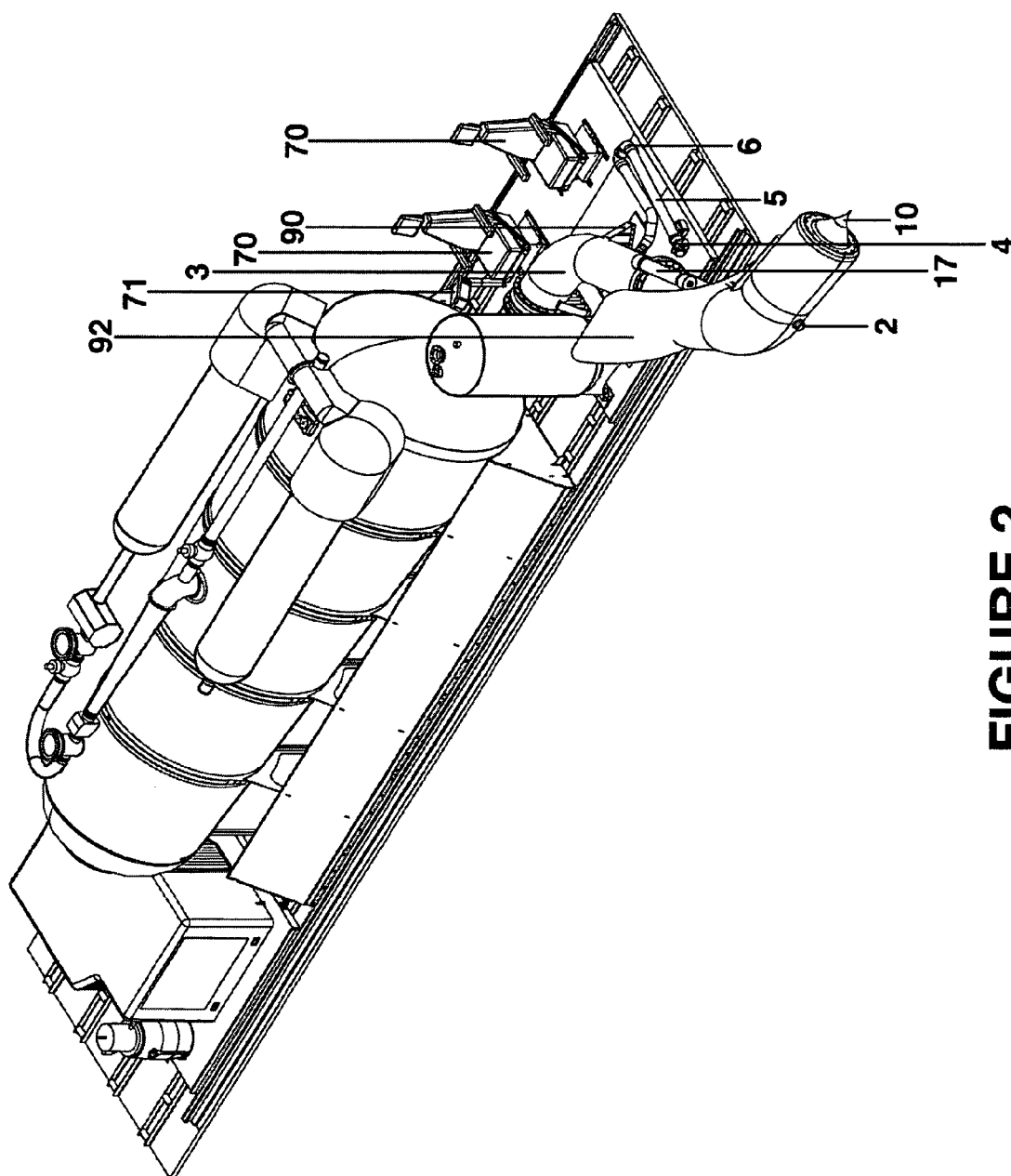


FIGURE 2

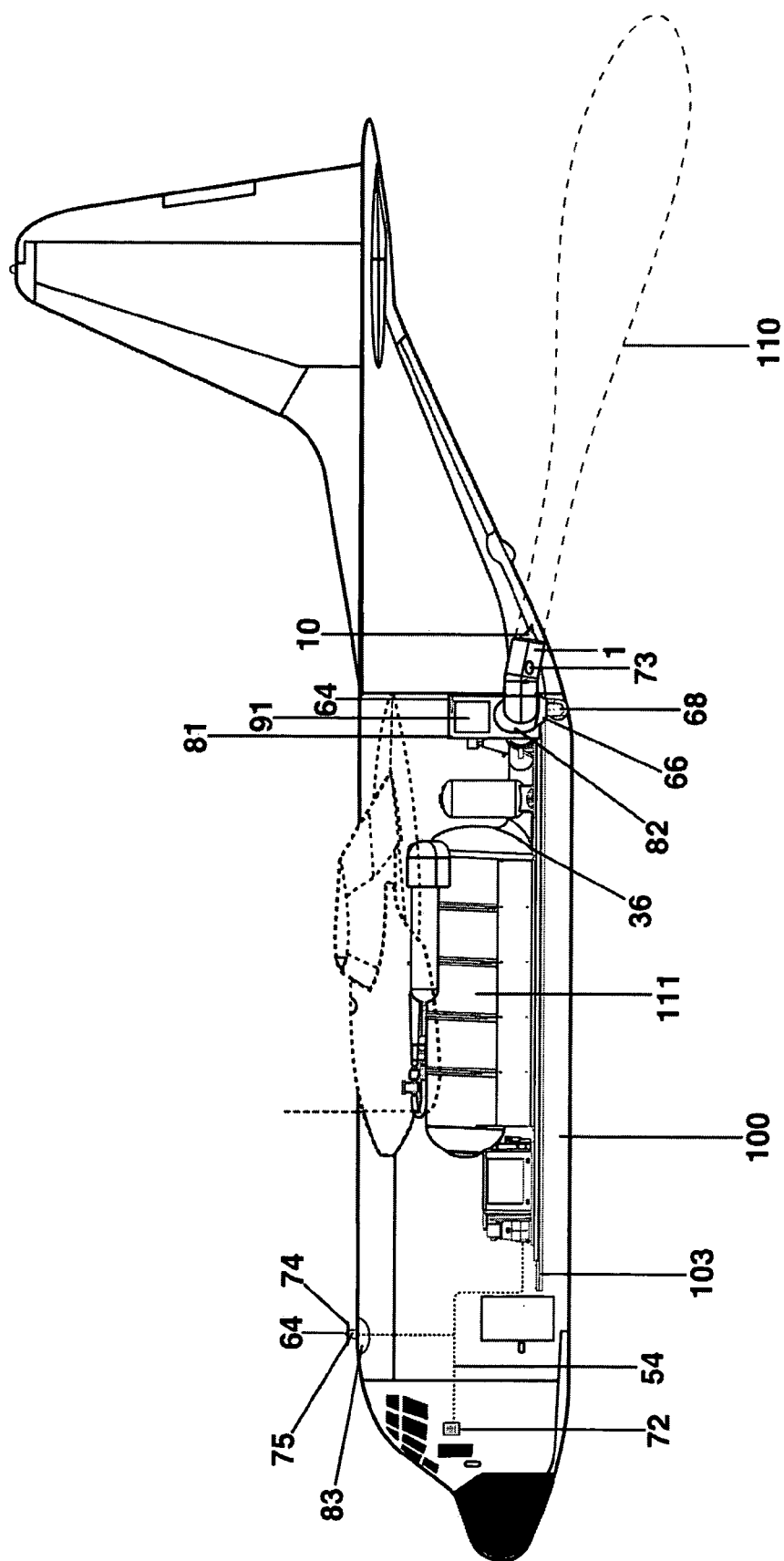


FIGURE 3

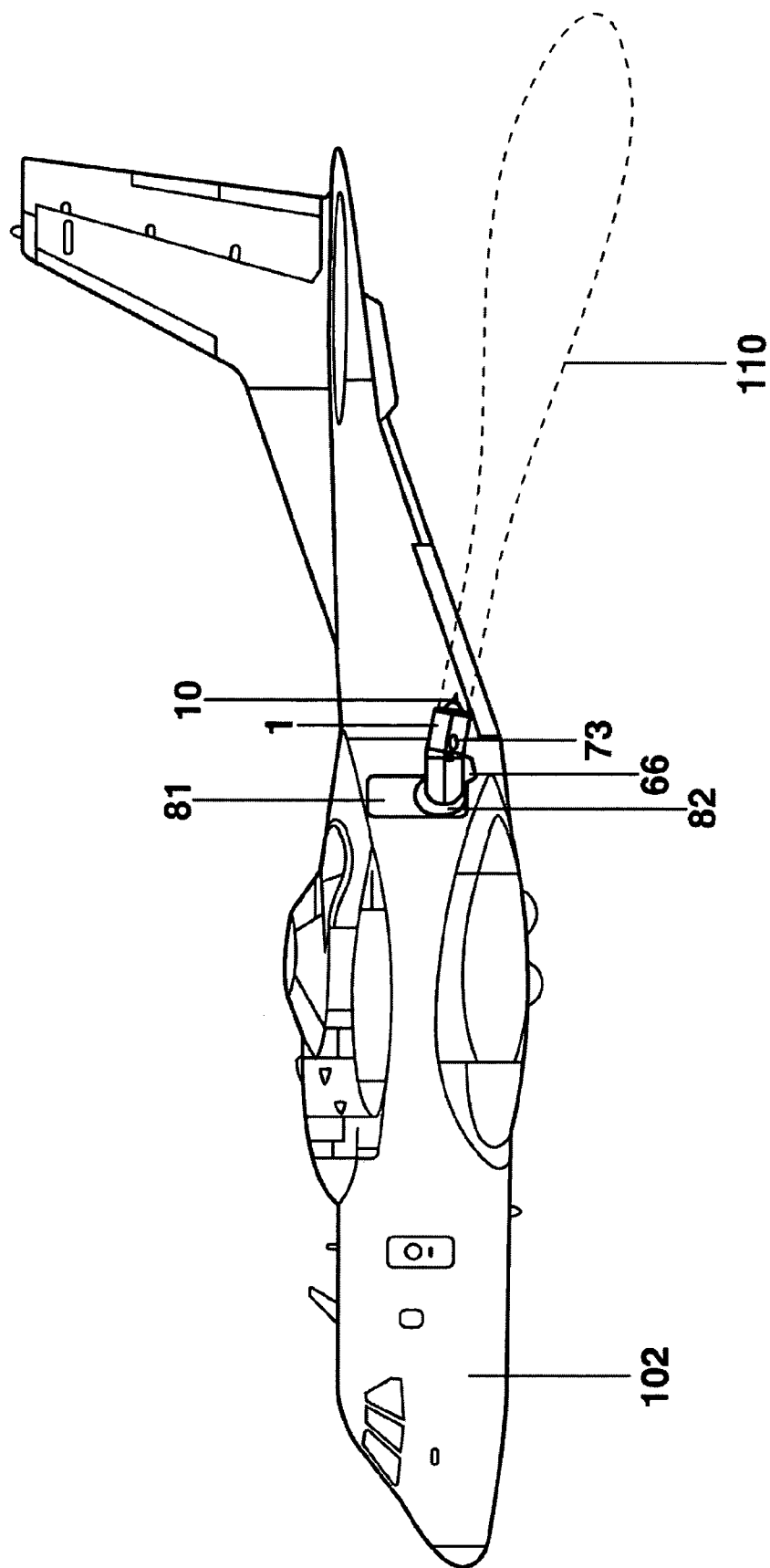
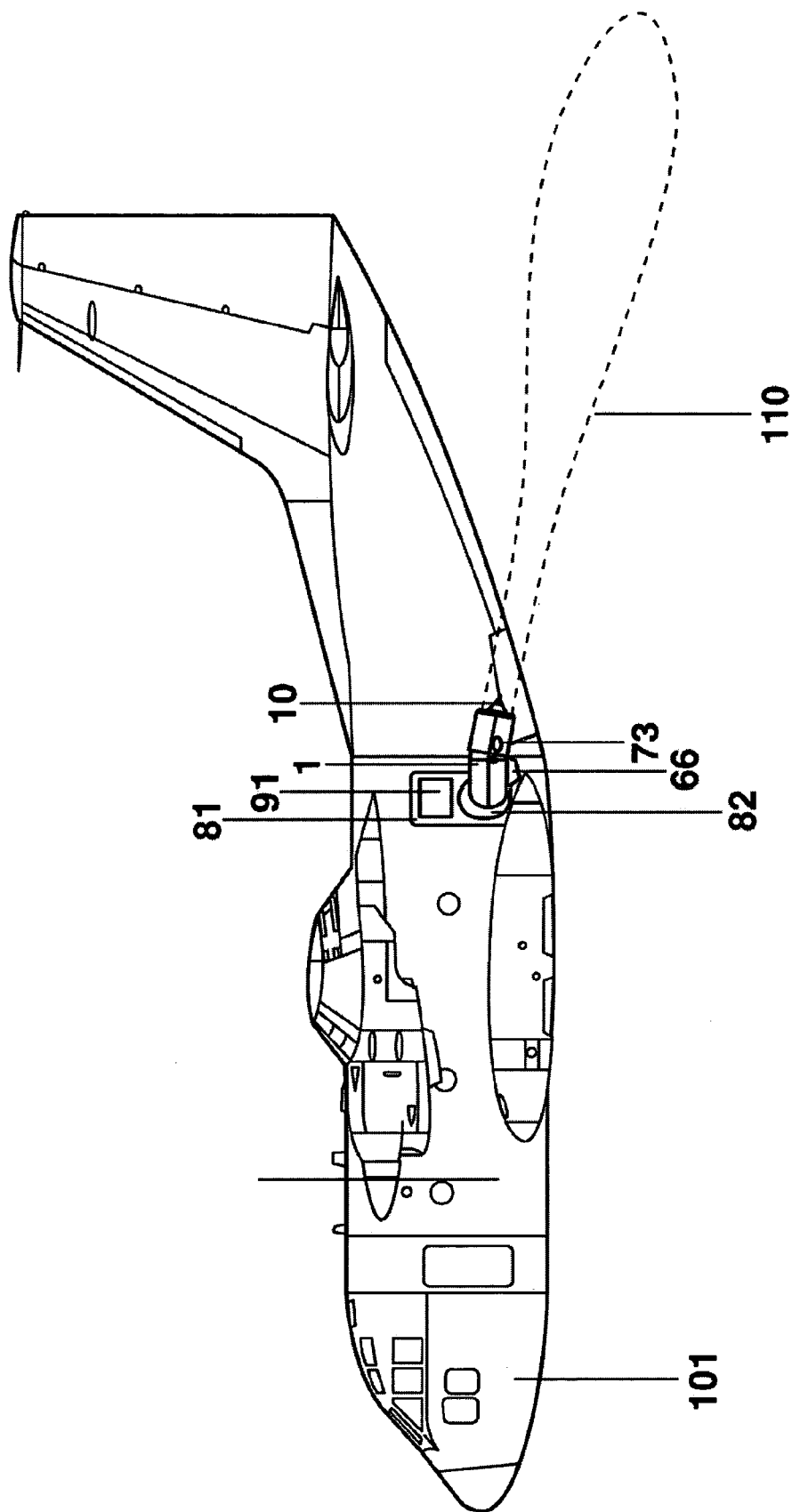


FIGURE 4





**FIGURE 5**

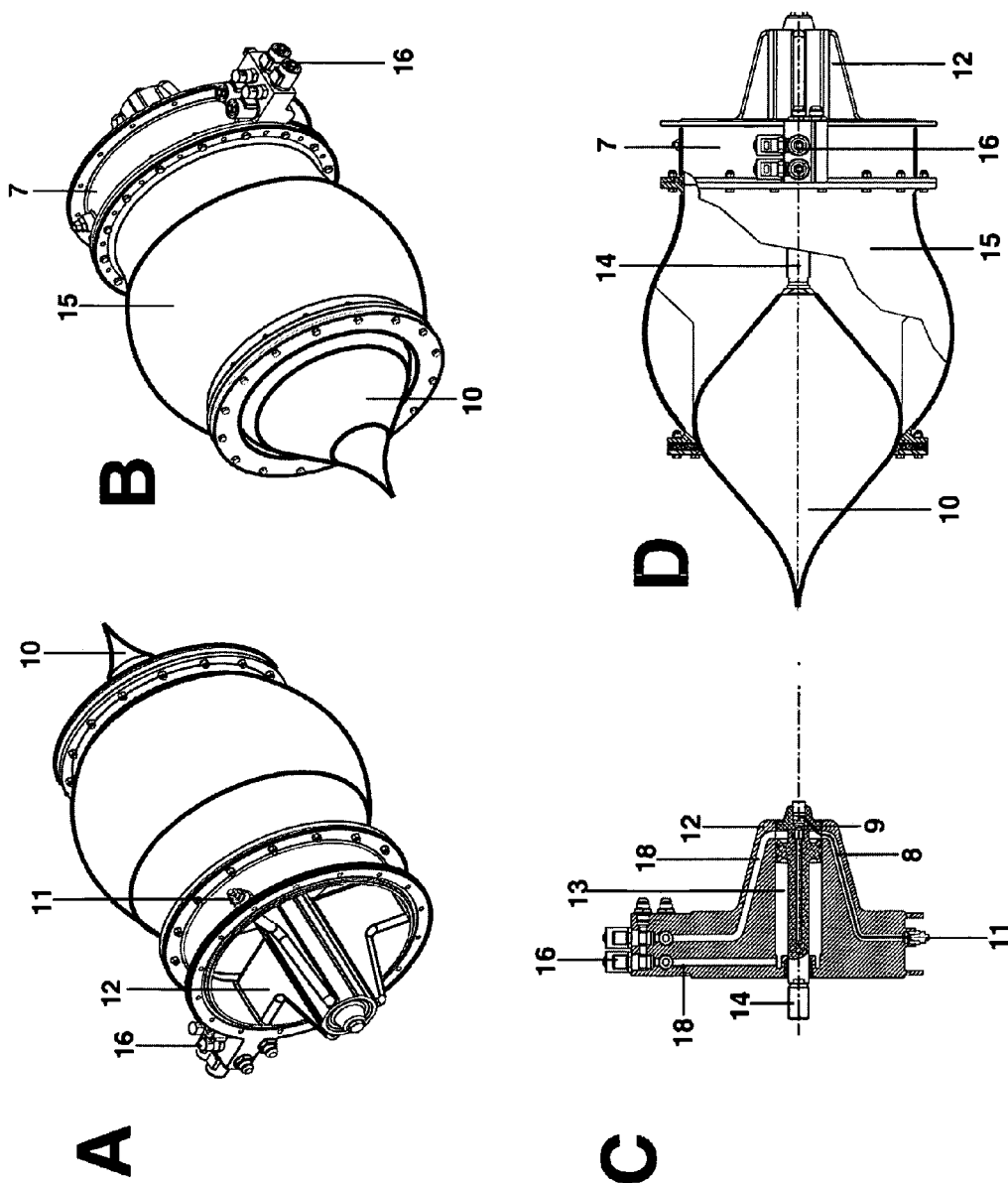
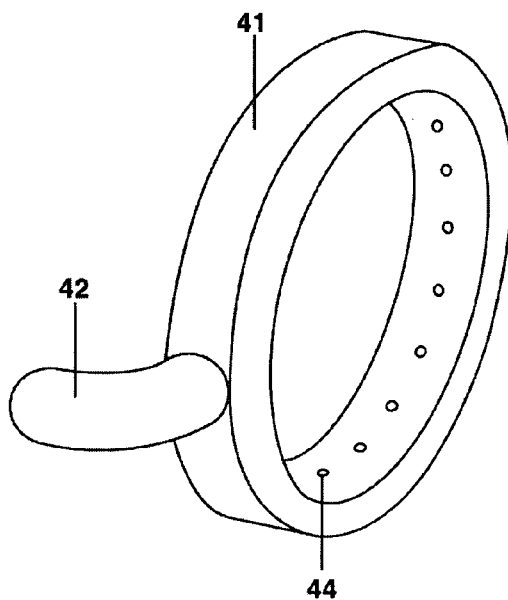
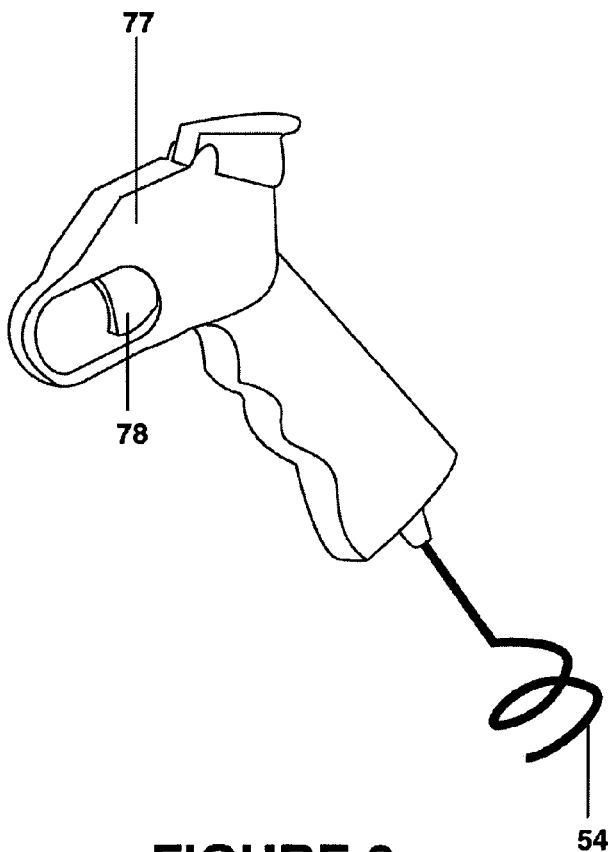


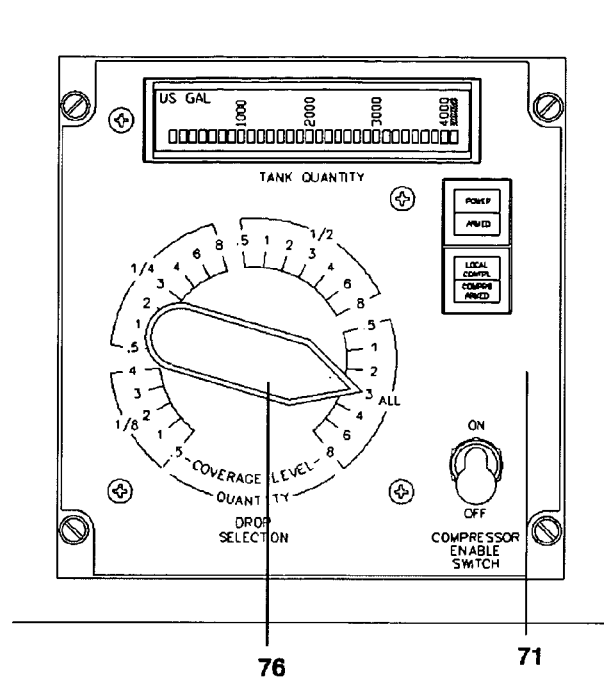
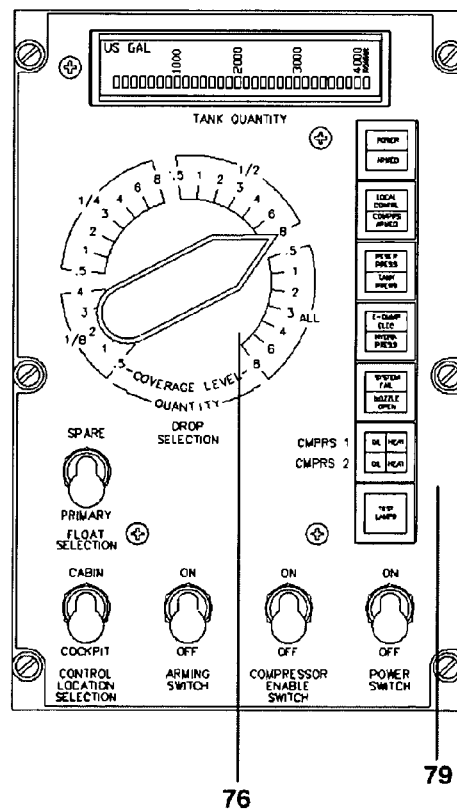
FIGURE 6



**FIGURE 7**



**FIGURE 8**

**FIGURE 9****FIGURE 10**

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## PORTABLE AIRBORNE FIREFIGHTING AND SENSING SYSTEM

### FIELD OF THE INVENTION

This invention relates to airborne firefighting suppression systems. In particular, the invention relates to removeably mounted, portable, roll on and roll off, modular, improved airborne firefighting suppression systems.

### BACKGROUND OF THE INVENTION

Fixed and rotary wing aircraft typical of the Douglas DC-6 and DC-4, Lockheed Martin P-2 Neptune, and P-3 Orion and other types of fixed and rotary wing aircraft, have in the past been extensively modified to undertake airborne firefighting operations. Typically modifications to the airframe are made to accommodate high volume water and foam retardant fluid reservoirs. These aircraft are referred to as air tankers, and their combined water and retardant delivery capacity, as well as the delivery dispersal pattern of the water on the ground, determine if the aircraft qualifies for one of several air tanker ratings, which are certified by the Interagency Air Tanker Board (IAB).

Among the many methodologies developed over years of forest fire fighting, is a constant flow retardant delivery tank system, which uses a pair of doors that open gradually to permit progressive release of the retardant mixture from within an air tanker's fluid reservoir. This constant flow water bombing methodology can counteract the forward motion of the aircraft at various speeds while maintaining an even, well grouped, user programmable, retardant dispersal pattern on the ground. One variant of such a system was disclosed by MacDonald and Neuwirth, in U.S. Pat. No. 4,936,389 which issued on Jun. 26, 1990, entitled Fluid Dispenser For An Aircraft. MacDonald discloses a system wherein a head sensor determines the level of retardant in the aircraft retardant tank and dynamically controls the aperture of the drop doors to counter aircraft forward velocity to achieve a consistent dispersal pattern. A similar constant flow system, which calculates the remaining amount of fluid within a tank relative to aircraft ground speed to achieve controlled retardant discharge is disclosed by Foy and Uglum in U.S. Pat. No. 5,320,185 which issued on Jun. 15, 1994 entitled Aircraft Fluid Drop System and also Foy and Uglum in U.S. Pat. No. 5,451,016, which issued on Sep. 19, 1995 which was also entitled Aircraft Fluid Drop System.

Another methodology used to achieve constant flow rates is disclosed by Trotter and Woods in U.S. Pat. No. 5,279,481 which issued on Jan. 18, 1994 entitled Airborne Liquid Spreading System. In the disclosed system the differential pressure across the drop doors between internal tank pressure and external ambient pressure is determined by a sensor which then relays signals to a controller that varies the aperture of the doors to maintain a constant flow rate during the drop sequence.

All the aforementioned constant flow methodologies have certain limitations and deficiencies. For example, each involve modifying the host aircraft to achieve installation. Furthermore, many of the systems referenced cannot typically undertake multiple drops from the same tank and fluid volume without returning to the tanker base for refilling.

Other systems have been conceived which require only minimal modification to the host aircraft, but such systems are generally incapable of achieving an optimal dispersal pattern conducive to IAB certification for suppressing large

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fires. Such a system was disclosed by Newton in U.S. Pat. No. 3,698,480 which issued on Oct. 17, 1972, entitled Dual Tank Airborne Fire Retardant Dispensing System. Newton describes a cargo aircraft with a portable dual tank dispersal system which disperses the retardant slurry using pressure stored in a high pressure vessel which uses bleed air from the engines to permit recharging of the system.

The system disclosed by Newton is similar to the Lockheed-Martin C-130 Modular Airborne Firefighting (MAFF) System, manufactured by the Aero Union Corporation of Chico Calif. The MAFF system is currently in use by the Air National Guard on behalf of the U.S. Forest Service, and state government authorities. The MAFF system uses a pair of retardant ejection tubes which extend rearward and downward, over the trailing edge of the opened cargo ramp of the aircraft, and due to fluid ejection limitations and a dual discharge manifold configuration cannot achieve the desired optimal ground dispersal pattern typical of such systems. Furthermore, due to the installation methodology and configuration of the MAFF system which utilizes the rear ramp of the Lockheed Martin C-130 aircraft, substantial airframe corrosion results when the retardant is discharged and vortices carry peripheral retardant spray upward into the underside of the aircraft tail empennage. Further corrosion can also result when the MAFF system is being refilled as external retardant filling interfaces are inadequate, and overfill retardant can spill onto the cargo floor.

Despite the portability of MAFFS and other roll-on roll-off (Ro—Ro) aerial fire fighting concepts, such systems generally require opening a door or ramp at the rear of the aircraft in flight and thereby compromise aircraft pressurization. Such systems also limit aircraft operating altitudes and speed and affect handling characteristics, and can also create safety of flight concerns particularly in mountainous terrain. In some configurations the retardant discharge assembly must be deployed prior to flight in the operable position which dramatically increases drag, and again impairs aircraft handling characteristics, restricting flight altitudes to below ten thousand feet, resulting in slower transit speeds to the fire.

Most aerial firefighting systems do not have on-board dynamic mixing capabilities of the foam fire retardant chemicals and water, which must be premixed on the ground and thereby preclude dynamic configuration in flight of the retardant mixture. Richardson et al, in U.S. Pat. No. 4,172,499 issued on Oct. 30, 1979 entitled Powder And Water Mixing And Dropping System Onboard An Aircraft disclosed a dynamic, in-flight retardant chemical powder and water scooping system, which forms an integral part of a modified airframe structure. The system, however, forms part of a dedicated firefighting assembly permanently installed on the host aircraft, and does not permit the system operator to dynamically select the ratio of retardant to water mix.

Other foam chemical mixing systems for helicopter bucket type of firefighting systems are disclosed by Burchert, in U.S. Pat. No. 4,993,495, which issued on Feb. 19, 1991, entitled Apparatus For Applying Firefighting Chemicals, and in a similar system disclosed by Baker, in U.S. Pat. No. 5,385,208, which issued on Jan. 31, 1995, entitled Airborne Fire Suppressant Foam Delivery Apparatus. However, all of these systems involve modified airframes, or are helicopter based and hence are incapable of working in conjunction with a non-dedicated, Ro—Ro, high volume delivery system. Nor is a Ro—Ro fixed wing system disclosed that can carry and provide access to multiple chemicals, dyes or other powder or fluid agents in flight



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which could be dynamically injected in various ratios into the water reservoir based on situational requirements determined by the airtanker flight crew, or on-scene commander.

A common complaint among senior U.S. Air Force staff members and the U.S. General Accounting Office involves the diverse types, consisting of some twelve different variants, of dedicated C-130's used to fulfill unique missions. This diversity of airframe types results in a lack of fleet uniformity driving up maintenance costs, with no flexibility to undertake alternate missions. The U.S. Air Force has expressed a desire to create flexibility in fire-fighting equipment, to keep abreast of technical advances, and achieve more uniformity within its C-130 aircraft fleet. The U.S. Forest Service shares a similar perspective.

A discharge chute used to eject retardant material from an aircraft is disclosed by Hawkshaw in U.S. Pat. No. 4,671, 472 issued on Jun. 9, 1987, entitled Fire Bombing and Fire Bombers. Hawkshaw disclosed the mounting and integration of an unpressurized fluid discharge chute which can form part of an existing drop tank assembly, but the system requires airframe modifications.

Other known firefighting systems use high pressure water drop or streams, particularly helicopter based systems. One such system is described by Eason in U.S. Pat. No. 3,897, 829, issued on Aug. 5, 1975 entitled Airborne Fire Suppression Unit. Eason discloses a portable, articulated boom with an adjustable nozzle and water reservoir. A similar system for a modular container, and spray nozzle assembly was disclosed by Tomlinson in U.S. Pat. No. 4,090,567, which issued on May 23, 1978 entitled Fire Fighting Helicopter. However, both the Eason and Tomlinson patents describe systems which are primarily suited for lateral firefighting typical of high rise apartment buildings with limited water reservoirs, which require directed horizontal water streams, and are not capable of meeting IAB drop pattern dispersal criteria. Further, such systems cannot deliver a large volume of water as is typically required in major forest fires.

An improvement to these helicopter related firefighting problems is disclosed by Bisson in U.S. Pat. No. 5,135,055 which issued on Aug. 4, 1992, entitled Ground And Airborne Fire Fighting System And Method Of Fighting High Rise Building Fires. Bisson discloses a stationary helicopter in hover, which is connected to a ground based pumping means and water supply, through a hose, which discharges the high pressure water through a water cannon mounted on the helicopter. Although the system disclosed by Bisson has multi-axis water stream vectoring capabilities, with variable flow rate, the helicopter is tethered to a fire hose and cannot be made portable, or independent from the water source thereby restricting the mobility of the helicopter.

Although several rotary and fixed wing, vertical discharge aerial firefighting systems disclose variable flow rate, or constant flow rate discharge means, none of them are adapted for use with Ro—Ro aircraft such as the Lockheed-Martin C-130 without modifying the airframe. For example, the Aero Union Corporation's Lockheed-Martin C-130-based Retardant Aerial Delivery System's (RADS) is only partially Ro—Ro, and requires extensive modification to the lower fuselage to create the opening for the tank assembly which is installed for firefighting and removed when the aircraft is required for cargo operations.

Herlik in U.S. Pat. No. 5,549,259, issued on Aug. 27, 1996, entitled Innovative Airtankers And Innovative Methods For Aerial Firefighting, discloses a system reportedly able to precisely drop measured amounts of liquid using an infra-red vision system, computerized aiming references and high capacity impellers mounted in the discharge tubes. A

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similar, although lesser capability is also disclosed by Denoize et.al. in U.S. Pat. No. 5,878,819 issued on Mar. 9, 1999 entitled Device For Assisting With The Extinguishing Of Fires By Water Bombing Aircraft which integrates a fire detection sensor with a GPS aircraft positioning system and a geographic information system linked to a computer based aircraft route, drop coordination, and egress planner. However, Denoize et.al. fail to disclose beneficial features, such as temporary, portable, modular, non-dedicated, Ro—Ro, pressurized fuselage mounting methodology for a fully integrated fire retardant delivery system including control interfaces, with global positioning system capability for precision delivery and ground asset location, with fire detection, targeting, and vegetative fuel characterization sensors, telemetry antennas, and/or computer processing systems, which are not affected by mechanical failure, or inoperability of the host aircraft.

In conjunction with the aerial delivery of retardant, current firefighting operations for non-dedicated, Ro—Ro aircraft (e.g., MAFS) and modified aircraft (e.g., RADS) are hindered by a lack of on-board infra-red, hyperspectral, and other spectral sensors for spot fire detection, radiant and kinematic heat mapping, fire perimeter mapping, ground crew detection, vegetative fuel load characterization, retardant targeting, and retardant delivery assessment capabilities.

Further, in conjunction with the aerial delivery of heavy payloads of retardant, current airborne firefighting operations have on occasion proven to be dangerous for ground crews engaged in fighting fires, or civilian populations within the vicinity of aircraft water bombing operations.

Further, In order for several aircraft and ground crews to benefit from geo-referenced infra red detection data, and GPS targeting coordinates obtained by only one aircraft equipped with a sensor and data processing system, requires the integration of a low cost, universal on board tactical line-of-sight (LOS) and/or, over-the-horizon (OTH) imagery, data, transmission and display information system.

Accordingly, there is a continuing, unaddressed need for an improved firefighting apparatus capable of temporary use on various host aircraft and capable of effective water and/or retardant delivery from the air.

Additionally, there is a continuing, unaddressed need for a firefighting apparatus and system capable of common aircraft roll-on, roll-off, non-dedicated operation, without requiring airframe modifications.

Additionally, there is a continuing, unaddressed need for a firefighting apparatus and system capable of providing for pressurized fuselage based, Ro—Ro aerial fire fighting.

Additionally, there is a continuing, unaddressed need for a non-dedicated, Ro—Ro firefighting apparatus and system providing for constant flow discharge or operator-definable discharge from a pressurized fuselage.

Additionally, there is a continuing, unaddressed need for a firefighting apparatus and system, incorporating fire detection sensing and targeting capabilities, and/or a data/imagery telemetry system integrated into a single portable, pressurized, pallet assembly which can move seamlessly between aircraft without requiring airframe modifications.

Finally, there is a continuing, unaddressed need for a firefighting apparatus and system which does not require airframe modifications, does not restrict normal aircraft performance, does not decrease aircraft safety margins, does not cause airframe corrosion damage, and does not inhibit mission readiness by being dedicated to a single aircraft through airframe modification.

## SUMMARY OF THE INVENTION

The present invention solves many of the problems encountered with current permanent and roll-on aircraft firefighting equipment. In one embodiment the firefighting apparatus of the present invention is adapted for use in a host aircraft comprising a fuselage defining an interior and an exterior. The firefighting apparatus includes a pressurizeable retardant tank disposed in the interior of the host aircraft, the retardant tank being capable of roll-on and roll-off installation, an ejection tube in fluid communication with the retardant tank, and a door plug for mounting within a fuselage orifice in the host aircraft. The door plug provides for fluid communication of retardant from the retardant tank through the ejection tube to the exterior of the host aircraft. At least one sensor, and one telemetry and communications system can be operably connected to the firefighting apparatus to effect user-discernable data for effecting retardant delivery.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an apparatus of the present invention.

FIG. 2 is another perspective view of an apparatus of the present invention.

FIG. 3 is a left side view of the present invention as mounted on a Lockheed Martin C-130 aircraft.

FIG. 4 is a left side view of the present invention as mounted on an EADS/CASA C-235/295 aircraft.

FIG. 5 is a left side view of the present invention as mounted on a Alenia/Lockheed Martin C-27J aircraft.

FIGS. 6A–6D show side, section and perspective views of a nozzle assembly of the present invention.

FIG. 7 is a perspective view exhibiting the diffuser array of the chemical/foam injection collar assembly.

FIG. 8 is a perspective view of the flight crew and operator joystick with electrical data cord connection.

FIG. 9 is a view of the cockpit control interface plate depicting overall control interface and drop selector switch.

FIG. 10 is a view of the loadmaster control interface plate depicting overall control interface and drop selector switch.

## DETAILED DESCRIPTION OF THE INVENTION

The invention is now described in terms of the FIGURES to more fully delineate in more detail the scope, materials, conditions, and methods of the present invention. Many of the parts and components of the present invention are hereinafter described as being “assemblies.” As used herein, the word “assembly” or “assemblies” refers to the totality of related parts and pieces related to a given component and its operability, and is not to be considered as limiting to a particular part, piece, or operation.

In general, the invention comprises an improvement to fire fighting systems and apparatuses adapted for airborne firefighting. Specifically, the systems and apparatus of the present invention can provide for a non-dedicated, portable, roll-on, roll-off (Ro—Ro) aircraft installation of an advanced, integrated airborne firefighting system as disclosed more fully below. The apparatus of the present invention can provide for IAB certified, high volume, variable flow rate, constant flow, fire retardant delivery capability. The system provides a substantial improvement in Ro—Ro retardant dispersal patterns without impeding flight performance of the aircraft and without creating significant

drag on the aircraft. The apparatus and system can also eliminate or minimize spillage during filling procedures and delays for tank recompression. The apparatus can provide for dynamic in flight injection of chemicals, can preserve airframe pressurization, and can provide for vectoring corrosive retardant away from the airframe during discharge operations.

In one embodiment, as shown in FIG. 1, the apparatus 111 of the present invention provides for an improvement in the configuration, capability, and operation of portable, aerial firefighting systems and associated geo-located targeting equipment, and employment methodologies. The system and apparatus of the present invention is intended for use in aircraft, either fixed wing or rotary wing aircraft, both existing and future. For example, as shown in FIGS. 1 through 3, the system and apparatus of the present invention can be used with a Lockheed-Martin C-130 aircraft 100, which can be equipped with a cargo handling system, such as an A/A32H-4A cargo handling system, and be capable of accommodating the present invention on a conventional pallet, such as a 463L-compliant forward pallet 84 and aft pallet 85. Pallets 84 and 85 can be mounted to a central mounting system comprised of a plurality of load bearing “T” extrusion frames 86, which lighten the weight of the installation assembly. The apparatus can be rolled on to and off of the aircraft floor 103 to enable temporary installation into the interior of the host aircraft.

The system and apparatus of the present invention is scalable and can be used on any suitable aircraft adaptable for airborne firefighting with the apparatus of the invention, including, for example, a Boeing C-17, a Boeing CH-47 helicopter, a Boeing V-22 Tilt-rotor, an EADS/CASA C-235/295 aircraft 102 as shown in FIG. 4, an Alenia C-27 aircraft 101 as shown in FIG. 5, or other rear loading aircraft having sufficient interior space to accommodate smaller or larger versions of the firefighting apparatus 111 of the present invention. Other cargo handling systems can be employed as mounted on various aircraft floors 103. In general, aircraft of the type described herein have a fuselage defining an interior and an exterior of the aircraft.

The pallet assembly can include multiple part pallets, such as forward pallet 84, an aft pallet 85, but can be an integral one piece pallet assembly. Regardless of the specific aircraft cargo handling system, the pallet assembly serves to accommodate and otherwise integrate the various modules and components of the apparatus 111 of present invention into a Ro—Ro firefighting apparatus.

To avoid the necessity of modifying the airframe of the host aircraft, thereby maximizing the adaptability of the apparatus 111 of the present invention, the apparatus 111 includes a segmented door plug assembly 81 that can mount in a fuselage orifice of the host aircraft, thereby providing for sealing that can permit the interior of the aircraft to be pressurized. As shown in FIGS. 1 and 3, for example, the door plug 81, sometimes referred to as a hatch, is adapted to provide for fluid communication of firefighting fluids from the pressurized interior of the host aircraft to the exterior of the host aircraft 111. The door plug 81 permits quick, efficient temporary use of a side door opening of an aircraft for fire retardant ejection, for example, rather than using the rear ramp of the aircraft as has been done in the past. The outboard discharge manifold assembly 1 extends externally through the door plug 81 to effect retardant ejection and dispersal.

While it is contemplated that door plug assembly 81 could be one-piece, such a door plug could be difficult to install and de-install. By having a segmented door plug 81, each

segment can be installed separately, possibly by hand with minimal aid from mechanized sources such as cranes or fork lifts. For example, in one embodiment, the door plug **81** is segmented into top and bottom halves, each half being conformable to the outside dimension of the outboard discharge manifold assembly **1**, and sized to fit with the other half into a predetermined fuselage opening size, such as the side door of a C-130. As shown in FIG. 2, in another embodiment which achieves pressurization functionality the door plug is an integral single section door plug **92**, which is fully integrated with the outboard discharge manifold assembly **1** of the ejection tube, as described in more detail below, and installed as one piece of equipment. Fit and construction of the door plug assembly can be by means known in the art to permit secured, pressurizeable installation, depending upon the characteristics of the fuselage opening in the host aircraft.

An external discharge cowling **82** can be used to help assure an aerodynamic interface of the door plug **81** and the outboard discharge manifold assembly **1**. Segmented door plug **81** can have two or more parts or segments, and one of the segments can have an observation window **91**, as shown in FIG. 1. The door plug **81** can be shaped as necessary to be adapted to replace existing doors and provide a pressurized fit in existing door openings, for example the side door opening of a C-130 aircraft, as shown in FIG. 3.

Another benefit of having an outboard discharge manifold assembly **1** extending externally through the door plug **81** is provision of a better optimized trajectory **110** of the foam and/or retardant and/or water fire retardant fluids, hereinafter referred to simply as "retardant". The outboard discharge manifold assembly **1** permits the retardant to be directed away from the lower side of the tail empennage of aircraft **100** thereby preventing retardant from being sprayed into the tail as is known to occur in current airborne firefighting systems.

Other features of a preferred apparatus and system of the present invention are now described with respect to the beneficial feature of a segmented door plug **81** adapted for passage of retardant from the interior of a host aircraft to the exterior of the host aircraft through an ejection tube. In general, the various features and components of one embodiment of the apparatus correspond to one or more of a retardant tank assembly, a discharge assembly, a pintel assembly, a foam injection assembly, a compressor assembly, a sensor assessment and targeting assembly and a control assembly.

As depicted in FIGS. 1-3, a retardant tank assembly consists of a high pressure fluid reservoir retardant tank **30**, for holding high pressure fluid. The tank **30** can be made of suitable materials depending on the fluid and the pressure, but in a preferred embodiment it can be fabricated of aircraft certified metals. In one embodiment composite materials can be used, such as fiber reinforced graphite and Kevlar, to minimize weight (i.e., minimize the weight to strength ratio). Tank **30** can be supported and otherwise fixed by means known in the art to the pallets **84** and **85** by a plurality of transverse cradle braces **88**, which are connected and otherwise reinforced longitudinally by cradle shear panel **87**.

The high pressure fluid reservoir tank **30** can be configured to have a lower sump **36**, to facilitate egress of all fluids during ejection operations. For example, as shown in FIGS. 1 and 3, tank **30** can have a generally tapered conical shape with the narrow end of the cone elevated, such that, at least on a lower interior surface thereof, and in generally level flight, fluid collects at a lowest point, such as sump **36** corresponding to the point of exit out of tank **30**.

The high pressure fluid reservoir tank **30** can be pressurized with compressed air from air stored within at least one, but preferably two or more high pressure air reservoir tanks **20**. In general, other gases could be used for pressurization, but air is preferred. Air from air reservoir tanks **20** pressurizes high pressure fluid reservoir tank **30** to effect pressurized ejection of the fire retardant fluid from high pressure fluid reservoir tank **30**. Air reservoir tanks **20**, can be fabricated of aircraft certified metals, but in a preferred embodiment utilizes composite materials such as fiber reinforced graphite and Kevlar.

High pressure air reservoir tank **20** can be connected to a high pressure compressed air feed system through connecting high pressure air piping **21**. Air pressure can be controlled by an air pressure regulator **22**, and safeguarded from over compression by a first stage rupture disk **23**, and a second stage rupture disk **25**. Unintentional discharge of air into the high pressure fluid reservoir tank **30** can be controlled by a high pressure arming valve **24** and a check valve **26**. Once compressed air is permitted into the high pressure fluid reservoir tank **30**, it can undergo a reduction in pressure and distribution expansion through an inlet air expansion horn **27**, from which it can enter an air inlet manifold **28**, which can be connected to a high pressure air diffuser assembly **29** located on the upper inside surface of the high pressure fluid reservoir tank **30**.

A preferred embodiment of the present invention utilizes a plurality of high pressure air reservoir tanks **20** which can be connected by high pressure air piping **21** which can be protected from damage during system use and loading by a high pressure flex line protective fairing **31**. High pressure air reservoir tanks **20** can be further connected to an aircraft certified on-board compressor **50**, typical of those manufactured by the Bauer Corporation of the United States, which can be equipped with a condensate collection tank **52**. Compressor **50** can be employed in flight while the host aircraft is pressurized to effect the pressurization and transfer of air through air compressor piping **51** to the high pressure air reservoir tanks **20** where it is stored until released into the high pressure fluid reservoir tank **30**. Compressor **50**, and high pressure air control means can be powered and actuated through a power distribution/supply box **53** which can be connected to the host aircraft and system components through a power/data cable interface **54**.

The discharge assembly of the present invention includes an ejection tube preferably comprising an inboard discharge manifold assembly **3** and an outboard discharge manifold assembly **1**, the former being disposed in the interior of the host aircraft when in use, and the latter being disposed exteriorly of the host aircraft when in use. The ejection tube is in fluid communication with the retardant tank to effect fluid discharge from the retardant tank to the exterior of the aircraft. The inboard discharge manifold assembly **3** can be supported by means known in the art such as by a plurality of discharge manifold structural support bracing **90**, which can transit from the interior to the exterior of the host aircraft through the segmented door plug **81**.

The outboard discharge manifold assembly **1** of the ejection tube can be equipped with a fill/overflow port, such as an integrated left fill/overflow port **2**. In the case of a Lockheed Martin C-130 and like host aircraft, the discharge assembly can also have a right fill/overflow port **4**, including a right fill/overflow pipe **5**, which can be articulated into its deployed position through the aircraft fuselage, such as through an open paratroop doorway on the opposite side of the aircraft fuselage during ground based filling operations by means of a right fill/overflow pipe hinge **6**.

The high pressure fluid reservoir tank 30 can be connected to the fill/overflow pipes through a vent overflow line 33, which can be regulated by means of a vent overflow valve 32 to prevent inadvertent back sloop of the retardant fluid. During and after fill operations a fluid level transducer 34 can monitor the quantity of retardant in the high pressure fluid reservoir tank 30, which in turn can be transmitted to other control units, such as an internal loadmaster control interface 79, a quantity indicator, and an externally mounted fill volume indicator and intercom jack 73, which can be located on the outboard discharge manifold assembly 1.

The pressurized and segmented door plug 81 can be equipped with a pressurized observer window 91, to permit an operator to monitor and otherwise manually observe retardant discharge operations in flight.

As depicted in FIGS. 2 and 6, a preferred embodiment of the present invention can have a variable flow, constant flow rate retardant ejection pintel assembly comprised of a throttle body 15, which houses various actuation components and the pintel 10. The pintel 10 can be actuated in a linear fashion along the longitudinal axis of the throttle body 15 to affect changes in throttle aperture thereby achieving operator-definable dynamic control over the amount of retardant delivered at any given time.

The actuation of the pintel 10 can be achieved by a pintel shaft hydraulic cylinder 13 which can house a pintel actuator shaft 14 which can be connected to the pintel 10. Actuation control of the hydraulics is accomplished by means of an aperture flow control assembly 7 attached to the forward section of the throttle body 15, which provides a mount for the hydraulic position control valves 16 and spider vane assembly 12, which houses the pintel shaft hydraulic cylinder 13, and provides an internal conduit for the spider vane hydraulic line 18, and spider vane electrical wire 8, to affect control of the pintel actuator shaft 14. The hydraulic position control valves 16 are electrically powered through an electrical connector 11, and the pintel actuator shaft 14 position can be relayed by means of a spider vane position sensor 9. Hydraulic fluid pressure and control relay of the hydraulic position control valves 16 can be achieved by means of an inboard pintel hydraulic control assembly 17 mounted to the upper surface of the inboard discharge manifold assembly 3.

As depicted in FIGS. 1, 2, 3, and 7, in order to enhance the firefighting properties of the retardant fluid mixture carried by the host aircraft, a preferred embodiment of the present invention incorporates an on board foam concentrate or chemical injection assembly comprised of a foam concentrate tank 40, which can be attached to the aft pallet 85, by means of foam tank bracing 89. The foam concentrate tank 40 provides the capability for the host aircraft crew to dynamically inject various chemicals into the water or retardant stream through a foam injection collar, as shown in FIG. 7. A plurality of inlet foam injection module infusion port(s) 44 arrayed around the inside periphery of the foam injection module 41, which can be integrated within the inboard discharge manifold assembly 3, tube and connected to the foam concentrate tank 40, by means of a foam concentrate pipe 42. The foam concentrate tank 40 can be filled by means of a foam fill port 43, which can connect to a ground based hose assembly with a built in overflow vent and pipe which can pour excess chemical/foam concentrate fluid through the open door orifice to the outside of the aircraft during foam filling operations.

As depicted in FIGS. 1, 3, 4, and 5, in order to enhance the retardant delivery accuracy and connectivity of the host aircraft within the aerial firefighting theater, a preferred embodiment of the present invention can incorporate an

on-board sensor and communications suite equipped with various sensors known in the art, operably connected to the firefighting apparatus. By "operably connected" means installed, affixed, or otherwise provided for by means known in the art to be operable in the firefighting system. Sensors can include either a fixed or steerable gimbal based hyperspectral/infrared electro-optical sensor 62 package typical of those manufactured by Space Instruments Inc. of Encinitas, Calif., or Flir Systems Corporation of Portland, Oreg., and a ballistic winds LIDAR/ranging laser assembly 63, typical of those manufactured by Coherent Technologies Of Boulder, Colo., and other optical or radar sensors, including a day/night video camera/spotting scope 67, all of which can be housed within an aerodynamic sensor mounting fairing 66 behind multiple optical glass plates to effect the gathering of kinematic/radiant heat signature imagery, vegetative fuel loading, wind dynamics, dynamic topographic mapping, and situational awareness imagery being correlated with an inertial navigation and GPS unit typical of those manufactured by Northrop Grumman of Northridge, Calif. As depicted in FIG. 3, the electro-optical or radar sensor systems may also be integrated within a steerable, articulated electro optical/radar gimbal 68 typical of those manufactured by the Flir Systems Corporation of Portland Oreg., or the General Atomics Corporation of San Diego Calif.

The sensor assembly can also be fix mounted in a non-articulated, forward, side or downward fashion familiar to those skilled in the art of sensor mounts, and affixed to either the left or right side pressurized and segmented door plug 81, through an optical glass plate mounted in lieu of the pressurized observer window 91, or the left side external discharge cowl 82, or the outboard discharge manifold assembly 1.

The imagery and laser positioning data can be correlated to the absolute coordinates of the earth, and the relative coordinates of the host aircraft by means of at least one and preferably two temporarily installed upper ditching hatch plugs 83, typical of the Unicom antenna ditching hatch manufactured by the Aerospace Integration Corporation of Crestview, Fla., which can provide a mounting surface for an integrated antenna suite consisting of a GPS antenna 64, a SATCOM antenna 74, and/or a VHF/UHF line-of-sight antenna 75.

The hatch plug 83 can also provide the host aircraft with the ability to transmit and receive critical targeting and positioning imagery and data relative to fire phenomena, ground crew locations, flight hazards, and/or other geo-referenced data to other aircraft and ground based firefighting personnel. The means for processing of the imagery and other data, as well as GPS and communications radio transceiver hardware, can be housed within an integrated sensor, communications, and GPS LRU'S 65 hardware suite that can be located on either the forward or aft pallet 85, and connected to related sensors and GPS antenna 64, SATCOM antenna 74, and VHF/UHF line-of-sight antenna 75, by a power/data cable interface 54. Control of the subject sensor suite, and/or a communications and telemetry system can be effected by the loadmaster, co-pilot, or other crew member through at least one and possible several, temporarily mounted aft end or cockpit LCD targeting display 72 interfaces typical of those manufactured by the BARCO Corporation of Diluth Ga. Such a system can have a built-in processor and touch screen interface.

A cockpit LCD targeting display 72 can be equipped with a moving map display, and imagery/data software package typical of the U.S. Air Force's Falcon View software produced by the Georgia Technology Institute to undertake GPS

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correlated pre-delivery retardant run analysis of the target area using Defense Mapping Agency underlay maps to identify hazards, and optimal target location for the retardant drop. The cockpit LCD targeting display **72** can also be equipped with other timing, position, winds, and navigational data to assist the flight crew in jettisoning the retardant at the exact moment over the desired target. The configuration of sensors, and the data output as currently represented in a preferred embodiment of the present invention is considered minimal and the sensor and communications suite can be substantially augmented to embrace additional workstations, consoles, processing, sensing capabilities, and can undertake advanced command and control functions as required.

As depicted in FIGS. **1, 2, 3, 8, 9**, and **10**, in order to control the overall assembly and individual components of the aerial firefighting apparatus, the preferred embodiment of the present invention incorporates a control assembly comprising at least one and preferably two or more crew chairs **70** to which can be fastened a temporary cockpit control/display interface assembly **71** a temporary control yoke or chair mounted cockpit LCD targeting display **72** and/or a permanently affixed loadmaster control interface assembly **79** equipped with various tactile switches and indicator panels but comprising a minimum of at least one, quantity selector switch **76**, as depicted in FIG. **9**. Further control over retardant delivery operations for standard or emergency jettisoning can be undertaken from a long cord tethered joystick **77** equipped with a joystick trigger **78**, as depicted in FIG. **8**, to enable user definable, complete or partial discharge of the retardant payload by depressing the joystick trigger **78**, for as long or short a time as required.

As can be understood, therefore, from the above description, a preferred embodiment of the present invention having roll-on, roll-off capability does not prevent the host aircraft from undertaking alternate missions not related to fire fighting, and, the firefighting capability is not hindered due to aircraft mechanical failure when another aircraft of similar type is available.

Furthermore, the present invention, with means for ejecting retardant through a pressurized door plug permits variable discharge, constant flow, high capacity retardant delivery from a pressurized aircraft.

Furthermore, the present invention can provide a portable means for detecting fires using infra-red or other spectral and radar sensors to characterize terrain, or detect, and geographically reference, a fire's hot spots. The sensing system can form a part of the palletized, rapidly loaded, roll-on, roll-off mounting and installation system.

Furthermore, the problem of overfill spillage onto the floor of the aircraft due to improper or a lack of external vent piping, can be eliminated by the present invention through the incorporation of an overfill vent and hinged refilling pipe to funnel excess retardant off board away from the aircraft.

Furthermore, the problem of providing costly infra-red or hyperspectral sensors for detecting fire hotspots, vegetative fuel loading and other fire phenomena in conjunction with data transmission and GPS antennas without modifying the aircraft, can be achieved by the present invention by incorporating a roll-on, roll-off, non-dedicated, pressurized side door plug and upper ditching hatch mounted with GPS antenna and telemetry antenna. Such antenna and telemetry antenna can be that disclosed by Woodland in U.S. Pat. No. 5,927,648, which was issued on Jul. 27, 1999, and entitled Aircraft Based Sensing, Detection, Targeting, Communications, And Response Apparatus, which is hereby incorporated herein by reference.

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In a most preferred embodiment, the integration of all the foregoing components achieves the primary objective of an integrated aerial firefighting system which can accommodate aircraft interoperability (i.e., rapid installation in an alternate aircraft) without airframe modifications to undertake fire detection, fuel loading assessment, GPS-aided retardant delivery targeting, GPS-correlated personnel location, GPS-correlated asset location, inter-aircraft data telemetry, and variable flow, constant flow fire retardant delivery capabilities from a pressurized aircraft, including dynamic chemical injection, and in-flight retardant tank re-compression.

Furthermore, the present invention can also solve the problem of variable flow rate using a variable discharge, constant flow, high capacity nozzle assembly with a remotely actuated pintel assembly, and emergency manual discharge capabilities. The present invention can also solve the problem of in-flight spray and associated airframe corrosion damage by integrating a rearward and downward oriented variable aperture nozzle assembly below and outward from the fuselage away from adverse vortices emanating from the lower side of the aircraft.

In all configurations contemplated, the ejection of rearward discharged, in-flight operator definable, high pressure, variable flow, and constant flow rate retardant can be achieved by the present invention by integrating a fluids reservoir, a variable rate, multiple-choice retardant foam or chemical storage reservoir and injection system, a compressor and high pressure main compressed air storage reservoir, crew seating and control interfaces attached to the palletized firefighting system, and a flight crew remote, variable flow rate selectable dump trigger control interface.

#### METHOD OF OPERATION

The installed airborne firefighting apparatus **111** of the present invention can be mounted on most rear ramp and a few side cargo door equipped airframes by methods familiar to those skilled in the art of cargo loading. In general, prior to the commencement of any loading activities, the host aircraft would undergo a pre-flight check thereby preventing unnecessary loading and unloading of the firefighting apparatus should the aircraft have a mechanical problem. Once pre-flight diagnostics for the host aircraft are verified, a loading specialist can move the aerial firefighting apparatus from storage aboard a "K" loader or similar trailer assembly to the aircraft, for example out to the rear loading ramp of a Lockheed-Martin C-130 aircraft **100**, or other comparable aircraft like a Boeing C-17, an EADS/CASA C-235/295 aircraft **102**, an Alenia C-27 aircraft **101**, or other side cargo loading airframe.

Once in position behind or to the side of the aircraft, the palletized assembly can then be elevated into position if necessary whereupon it can interface with a cargo handling system, such as an A/A32H-4A cargo handling system or other cargo handling system. The installed airborne firefighting apparatus **111**, which can be affixed to the forward pallet **84** and aft pallet **85**, can then be secured to the host aircraft floor **103** through conventional cargo lock restraints.

As an alternative to using a "K" loader or other loader assembly, the present invention can also incorporate an integrated loading and wheel assembly to undertake self-loading functions as is known in the art for other cargo loading operations.

Once the installed airborne firefighting apparatus **111** is secured aboard the host aircraft, the outboard discharge manifold assembly **1** can be attached to the inboard dis-



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charge manifold assembly 3, through the open paratroop door or other orifice and secured in place. To achieve aircraft pressurization the segmented door plug 81 or integral single section door plug 92 can be installed in place of an existing side door, such as an open and locked in place paratroop door, or other removed door. Once the door plug is installed, the inboard discharge manifold assembly 3 can be secured about the interior periphery of the lower and upper parts of the segmented door plug 81 and the outboard discharge manifold assembly 1 can be secured to the inboard discharge manifold assembly 3 by suitable means known in the art, such as by bolting, screwing, or otherwise affixing each component.

At this juncture in the installation process the power distribution/supply box 53 can be connected to an aircraft power receptacle and other power/data cable interface 54 connections can be made to the cockpit control/display interface assembly 71, the cockpit LCD targeting display 72, the loadmaster control interface assembly 79, and/or the joystick 77. The pintel electrical connector 11, and other hydraulic connections can also be made at this time.

At this juncture of the installation process the upper ditching hatch plug 83, and associated SATCOM antenna 74, VHF/UHF line-of-sight antenna 75, and GPS antenna 64, can be connected to the sensor, communications, and GPS LRU'S 65 by means of various power/data cable interface 54 connections. The sensor mounting fairing 66, and/or articulated electro optical/radar gimbal 68, can also be installed and connected to the sensor, communications, and GPS LRU'S 65. Electrical and data system diagnostics on various control elements, sensors, communication systems and LRU's can be performed to verify operational status before system pressurization and retardant transfer begins.

Prior to commencing the transfer of retardant or water, the right side paratroop door (if there is one) can be opened, and the right fill/overflow pipe 5 can be articulated into place about the axis of the right fill/overflow pipe hinge assembly 6 to insure that overflow, if any, is jettisoned outside the aircraft. If required, at this juncture the foam concentrate tank 40 may also be filled through the foam fill port 43, and any overflow can be vented off board of the aircraft through the ground hose overflow pipe.

The transfer of retardant into the high pressure fluid reservoir tank 30 can be monitored by the loadmaster who observes the fill volume indicator and intercom jack 73 located on the outboard discharge manifold assembly 1. In the preferred embodiment of the present invention, upon completion of the filling operation the right fill/overflow pipe 5, if used, is retracted and stowed, and the right side paratroop door is closed while a left side, paratroop door is locked in the open position and replaced by a segmented door plug 81. The segmented door plug 81 can be capable of being pressurized, and the aircraft can be pressurized accordingly.

Before, during or after the transfer of retardant or water to the high pressure fluid reservoir tank 30, the compressor 50 can commence the transfer of high pressure compressed air to the high pressure air reservoir tank 20 to charge the system. If the retardant filling operation is complete before the high pressure fluid reservoir tank 30 is fully charged, the compressor 50 can be shut down and pressurization reinitiated after the host aircraft takes off to complete tank pressurization in route to the fire. Compression of high pressure air reservoir tank 20 can also be undertaken prior to filling the high pressure fluid reservoir tank 30.

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Once the host aircraft is over the fire various line of sight communications can be initiated with the on-scene commander, which would result in the host aircraft providing GPS coordinates, sensing, and optimal targeting data, including a hyperspectral/infra red optical sensor 62, ballistic winds LIDAR/ranging laser 63, and video camera/spotting scope 67, and/or other sensors systems.

Once retardant route planning has been completed and hazards identified, the data can be viewed on the cockpit LCD targeting display 72, and transmitted to the on-scene commander and/or relayed to other parties of interest through satellite based communication means. Based upon experience, dynamic sensor analysis, fire modeling, and/or input from on-scene staff, a determination can be made as to how much retardant should be delivered over a specific distance to achieve the desired ground based dispersal trajectory and density. Based upon this optimal response determination, the pintel 10 and associated aperture flow control assembly 7, and/or the foam injection module 41, can be electrically and/or hydraulically actuated by manipulating the quantity selector switch 76, and other controls located on the cockpit control/display interface assembly 71, FIG. 9, or the loadmaster control interface assembly 79, FIG. 10, or alternatively by depressing the joystick trigger 77, located on the joystick 78, FIG. 8 to achieve release of the retardant or water, within the desired flow rates, and with the infusion of ancillary chemicals or foam as required.

Once the initial run has begun, the cockpit LCD targeting display 72, can provide a moving map display with visual, and/or audible cues to the flight crew as to their proximity from the target and when the retardant should be jettisoned.

The term "riding the button" is used when the flight crew selects the desired coverage level from the "ALL" position on the quantity selector switch 76. Then the drop button is used to start and stop the flow of retardant based on geographical features, (i.e. from a road to a ridge line etc.) or GPS coordinates.

While preferred embodiments of the present invention have been shown and described, various substitutions and modifications may be made without departing from the spirit and scope of the invention. Accordingly it is to be understood that the present invention has been described by way of illustration and not limitation.

What is claimed is:

1. A firefighting apparatus capable of temporary installation and adapted for use in a host aircraft comprising a fuselage defining an interior and an exterior, said firefighting apparatus comprising a retardant tank disposed in the interior of the host aircraft, and an ejection tube in fluid communication with said retardant tank, and a door plug for mounting within a fuselage orifice in the host aircraft, said door plug providing for fluid communication of retardant from said retardant tank through said ejection tube to the exterior of the host aircraft, wherein said door plug can be temporarily installed permitting the interior of the host aircraft to be pressurized.

2. The firefighting apparatus of claim 1, wherein said door plug comprises a pressurizeable seal around said ejection tube assembly.

3. The firefighting apparatus of claim 1, wherein said door plug comprises at least two segments.

4. The apparatus of claim 1, wherein said firefighting apparatus is mounted on a pallet.

5. The apparatus of claim 4, wherein said pallet is adapted for roll on capability to the interior of the host aircraft.

6. The apparatus of claim 1, wherein a portion of said ejection tube is disposed exterior to the host aircraft and is

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adapted to be oriented in a rearward and downward orientation with respect to the host aircraft.

7. The apparatus of claim 1, wherein said retardant tank can be pressurized.

8. The apparatus of claim 1, further comprising a compressor connected to said retardant tank to effect pressurization of said retardant tank.

9. The apparatus of claim 8, further comprising a compressed air storage reservoir disposed intermediate said compressor and said retardant tank.

10. The apparatus of claim 9 wherein said compressed air storage reservoir comprises a plurality of high pressure overfill rupture discs.

11. The apparatus of claim 1, further comprising a foam and chemical additive tank connected for controlled input of foam and chemical additives to said retardant tank.

12. The apparatus of claim 1, further comprising at least one sensor operably connected to said firefighting apparatus to effect user-discernable data for effecting retardant delivery.

13. The apparatus of claim 1, further comprising line of sight and over the horizon communications and data transmission capability.

14. The apparatus of claim 13, wherein one of said sensors is a transceiver, said transceiver being a GPS positioning assembly.

15. The apparatus of claim 1, wherein the host aircraft is a fixed or rotary wing aircraft with at least one oversized cargo door capable of accommodating the transit of a 463L or like cargo mounting pallet.

16. The apparatus of claim 1, wherein said door plug comprises a mounting collar for said ejection tube for providing fluid communication through said door plug from the interior to the exterior of the host aircraft.

17. The apparatus of claim 1, wherein said door plug incorporates an observation window and a horizontally disposed GPS blade antenna.

18. The apparatus of claim 1, wherein said retardant tank comprises a high-pressure air expansion horn and diffuser.

19. The apparatus of claim 1, wherein said retardant tank comprises a fluids collection sump to facilitate complete ejection of all fluids.

20. The apparatus of claim 19 wherein said fluids collection sump of said retardant tank is attached to said fluid ejection tube.

21. The apparatus of claim 1 wherein said retardant tank comprises a retractable, fill/overflow pipe discharge assembly which can translate from the interior to the exterior of the host aircraft during fluid transfer operations.

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22. The apparatus of claim 1 wherein said fluid ejection tube comprises a fill/overflow pipe discharge port external to the host aircraft.

23. The apparatus of claim 22 wherein said ejection tube comprises a fill indicator panel with intercom connection external to the host aircraft.

24. The apparatus of claim 1 wherein said ejection tube comprises a pintle nozzle, said pintle nozzle being capable of variable flow and constant flow rate.

25. The apparatus of claim 1 wherein said ejection tube comprises a foam and chemical additive injection module.

26. The apparatus of claim 25 wherein said foam and chemical injection module is connected to a foam and chemical additive tank.

27. The apparatus of claim 1, further comprising an electro-optical and radar sensor fire targeting and assessment assembly attached to an externally-disposed section of said ejection tube.

28. The apparatus of claim 1, further comprising an externally mounted, fully articulated electro-optical and radar sensor gimbal turret fire targeting and assessment assembly attached to an externally-disposed section of said ejection tube.

29. The apparatus of claim 1, further comprising a fuselage upper ditching hatch capable of temporary installation and which comprises an antenna selected from the group consisting of: a line of sight communications antenna, an over the horizon satellite communications and data transmission antenna, and a global positioning satellite system antenna connected to a transceiver/processor LRU.

30. The apparatus of claim 1, further comprising a control interface assembly.

31. The apparatus of claim 30, wherein said control interface assembly is affixed to an operator chair mounted to a pallet assembly.

32. The apparatus of claim 30, wherein said control interface assembly is adapted for temporarily installation within the cockpit of the host aircraft.

33. The apparatus of claim 30, wherein said control interface assembly comprises a handheld joystick with selectable discharge trigger to effect user definable release of firefighting retardant.

34. The apparatus of claim 30, wherein said control interface assembly incorporates a plurality of seats adapted for crew seating.

\* \* \* \* \*

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,165,627 B2  
APPLICATION NO. : 10/755088  
DATED : January 23, 2007  
INVENTOR(S) : Hutter et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the title page (54), delete the first two inventors Michael David Hutter and Steve Thomas Marine.

Signed and Sealed this

Twenty-third Day of September, 2008

A handwritten signature in black ink, appearing to read "Jon W. Dudas". The signature is stylized with a large, looped initial "J" and a cursive "Dudas".

JON W. DUDAS  
*Director of the United States Patent and Trademark Office*

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,165,627 B2  
APPLICATION NO. : 10/755088  
DATED : January 23, 2007  
INVENTOR(S) : Hutter et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the title page (76), delete the first two inventors Michael David Hutter and Steve Thomas Marine.

This certificate supersedes the Certificate of Correction issued September 23, 2008.

Signed and Sealed this

Fourteenth Day of October, 2008

A handwritten signature in black ink, reading "Jon W. Dudas". The signature is stylized, with a large, looped initial "J" and a cursive "Dudas".

JON W. DUDAS  
*Director of the United States Patent and Trademark Office*

## ACTION MEMO

DepSec Action \_\_\_\_\_  
USD(P) \_\_\_\_\_

FOR: SECRETARY OF DEFENSE

FROM: Todd M. Rosenblum, Principal Deputy Performing the Duties of the Assistant Secretary of Defense for Homeland Defense

SUBJECT: Governor of California's Consent for a Dual-Status Commander during the 2014 Wildfire Season

- The letter at TAB A responds to the letter March 25, 2014, letter from California (CA) Governor Edmund Brown, Jr., by stating that you stand ready to authorize Colonel (b) (6), CA Army National Guard, to serve as a dual-status commander (DSC) when General Jacoby, Commander, U.S. Northern Command, notifies you that there is an operational need for assistance from the U.S. Armed Forces.
- The memorandum at TAB B advises General Jacoby, who endorsed Governor Brown's advance consent (TAB C), that you authorize the order to active duty and service of Colonel (b) (6) as a dual-status commander effective when there is an operational need for assistance from the U.S. Armed Forces.
- The memorandum at TAB B provides an efficient process that ensures the timely establishment of DSCs when needed, preserves your decision space, and is consistent with:
  - Section 515 of the National Defense Authorization Act for Fiscal Year 2012 (TAB D), which provides that DSCs should be established "when the Armed Forces and the National Guard are employed simultaneously in support of civil authorities."
  - The November 28, 2011, DSC Memorandum of Agreement between DoD and CA (TAB E), which provides that DSCs are established for designated operations and durations.
  - The Secretary of the Army's authority, under section 12301(d), to order to active duty, on a voluntary basis and with the consent of the Governor (which Governor Brown's letter at TAB C has given in advance), members of the Army National Guard.

RECOMMENDATION: Sign the letter at TAB A and the memorandum at TAB B.

COORDINATION: TAB F

Attachments:

TAB A: SecDef letter to Governor Brown

TAB B: SecDef memorandum to Commander, U.S. Northern Command

(b) (6)



TAB C: Governor of California's letter to SecDef

TAB D: Section 515 of the National Defense Authorization Act for Fiscal Year 2015

TAB E: Memorandum of Agreement with the State of California

# TAB A

The Honorable Edmund G. Brown, Jr.  
Governor of California  
Sacramento, California 95814

Dear Governor Brown:

Thank you for your letter of March 25, 2014, letter granting your consent, pursuant to the Memorandum of Agreement Between the State of California and the Department of Defense for the Use and Establishment of a Dual-Status Commander Pursuant to Title 32, U.S. Code (hereinafter "the Memorandum of Agreement"), for Colonel (b) (6), California Army National Guard, to serve as a Dual-Status Commander for units of the California National Guard and the U.S. Armed Forces when responding to wildfires in the State of California during the 2014 wildfire season.

Colonel (b) (6) is certainly qualified and certified to perform service as a dual-status commander. Your timely consent will help expedite his appointment. I stand ready to authorize the activation of Colonel Spano as a dual-status commander when General Jacoby, Commander, U.S. Northern Command, notifies me that there is an operational need for assistance from the U.S. Armed Forces based on a request from a lead Federal agency.

cc:

Secretary of the Army  
Chairman of the Joint Chiefs of Staff  
Commander, U.S. Northern Command  
Chief, National Guard Bureau  
Assistant Secretary of Defense for Homeland Defense

# TAB B

MEMORANDUM FOR COMMANDER, U.S. NORTHERN COMMAND

SUBJECT: Designation of Dual-Status Commander in California for Firefighting Support

Thank you for your informal endorsement of the advance consent issued by California Governor Edmund Brown, Jr., for Colonel (b) (6), California Army National Guard, to serve as a Dual-Status Commander for units of the California National Guard and the U.S. Armed Forces when responding to wildfires in the State of California during the 2014 wildfire season.

I authorize the order to active duty and service of Colonel (b) (6) as a dual-status commander effective when units of the U.S. Armed Forces under your command and control and California National Guard forces are engaged in wildland firefighting operations in support of civil authorities in California during Calendar Year 2014. When this condition is met, you will notify me, through the Chairman of the Joint Chiefs of Staff. Upon your notification, the Chairman of the Joint Chiefs of Staff will notify the Secretary of the Army, who will publish Colonel (b) (6) active duty orders, and the Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs, who will publish Colonel Spano's appointment letter and notify the Governor. Colonel (b) (6) order to active duty and service as a dual-status commander terminates effective upon the redeployment of the units of the U.S. Armed Forces engaged in wildland firefighting operations under your command and control in support of civil authorities.

[Signature Block]

cc:

Secretary of the Army  
Chairman of the Joint Chiefs of Staff  
Chief, National Guard Bureau  
Assistant Secretary of Defense for Homeland Defense



# TAB C



OFFICE OF THE GOVERNOR

March 25, 2014

The Honorable Chuck Hagel  
Secretary, U.S. Department of Defense  
The Pentagon  
Washington, D.C. 20318

Dear Secretary Hagel:

Pursuant to the Memorandum of Agreement between the State of California and the Department of Defense for the Use and Establishment of a Dual-Status Commander Pursuant to Title 32, U.S. Code (hereinafter "the Memorandum of Agreement"), signed on November 28, 2011, and Section 325 of Title 32, U.S. Code, I grant consent for COL (b) (6) California Army National Guard to be activated and to serve in both State and Federal duty statuses as Dual-Status Commander for the purpose of providing military support for any duration or mission when California is engaged in firefighting operations during 2014. Colonel (b) (6) will perform this duty in the State of California. I consent to COL (b) (6) service as a Dual-Status Commander commencing on March 25, 2014. At such time when it is determined that this authority is no longer warranted, I will request that COL (b) (6) be deactivated as Dual-Status Commander.

Colonel (b) (6) is qualified and certified to perform the duties of a Dual-Status Commander. This consent is provided contingent on COL (b) (6) performing his duties as Dual-Status Commander consistent with the November 28, 2011 Memorandum of Agreement. This consent is also provided with the understanding that it may be withdrawn consistent with the terms set forth in the November 28, 2011 Memorandum of Agreement.

Sincerely,



Edmund G. Brown Jr.

GOVERNOR EDMUND G. BROWN JR. • SACRAMENTO, CALIFORNIA 95814 • (916) 445-2841

# TAB D

**Section 515(c) of the National Defense Authorization Act for Fiscal Year 2012  
(Public Law 112-82)**

Usual and Customary Arrangement-

- (1) DUAL-STATUS COMMANDER- When the Armed Forces and the National Guard are employed simultaneously in support of civil authorities in the United States, appointment of a commissioned officer as a dual-status commander serving on active duty and duty in, or with, the National Guard of a State under sections 315 or 325 of title 32, United States Code, as commander of Federal forces by Federal authorities and as commander of State National Guard forces by State authorities, should be the usual and customary command and control arrangement, including for missions involving a major disaster or emergency as those terms are defined in section 102 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122). The chain of command for the Armed Forces shall remain in accordance with sections 162(b) and 164(c) of title 10, United States Code.
- (2) STATE AUTHORITIES SUPPORTED- When a major disaster or emergency occurs in any area subject to the laws of any State, Territory, or the District of Columbia, the Governor of the State affected normally should be the principal civil authority supported by the primary Federal agency and its supporting Federal entities, and the Adjutant General of the State or his or her subordinate designee normally should be the principal military authority supported by the dual-status commander when acting in his or her State capacity.
- (3) RULE OF CONSTRUCTION- Nothing in paragraphs (1) or (2) shall be construed to preclude or limit, in any way, the authorities of the President, the Secretary of Defense, or the Governor of any State to direct, control, and prescribe command and control arrangements for forces under their command.

# TAB E

**MEMORANDUM OF AGREEMENT  
BETWEEN  
THE STATE OF CALIFORNIA  
AND  
THE DEPARTMENT OF DEFENSE  
FOR THE USE AND ESTABLISHMENT OF A DUAL-STATUS COMMANDER  
PURSUANT TO TITLE 32, U.S. CODE**

- I. **PURPOSE.** This Memorandum of Agreement (MOA) provides the terms, responsibilities, and procedures for the use of a Dual-Status Commander, when established pursuant to 32 U.S. Code §325 or 32 U.S. Code §315. This MOA also outlines the process for establishment of a Dual-Status Commander, when the Governor of California and the Secretary of Defense or their designees mutually agree that such establishment is necessary and proper. Finally, this MOA provides the letters of authorization, consent, detail, and permission required by 32 U.S. Code §325 or 32 U.S. Code §315 for execution by the Governor of California and the Secretary of Defense or their designees, necessary for the establishment of a Dual-Status Commander to perform specified functions in defined jurisdictions for a designated operation and duration. As appropriate, with regard to the Dual-Status Commander, assignment as a commander in the Federal and State chains of command, order to active duty, and appointment as an officer in the Army National Guard or the Air National Guard will occur in accordance with applicable Federal and California procedures.
- II. **APPLICABILITY.** This MOA applies in those circumstances when an Army National Guard or Air National Guard officer is established as a Dual-Status Commander pursuant to 32 U.S. Code §325 or when a commissioned officer of the Regular Army or Regular Air Force is established as a Dual-Status Commander pursuant to 32 U.S. Code §315.
- III. **PROCESS FOR ESTABLISHMENT OF A DUAL-STATUS COMMANDER.**
- A. When the Governor of California and the Secretary of Defense or their designees agree that it is necessary and proper to establish an Army National Guard or Air National Guard officer as the Dual-Status Commander in accordance with 32 U.S. Code §325:
1. The Governor of California or the Governor's designee will issue a letter (TAB A) specifying:
- (a) The name and grade of the Dual-Status Commander;
  - (b) Whenever possible, the name and grade of a successor Dual-Status Commander;
  - (c) That the officer(s) so named is (are) qualified and certified to perform the duties of a Dual-Status Commander;
  - (d) Consent for the Dual-Status Commander and the successor Dual-Status Commander, if named, to serve in both State and Federal duty statuses;
  - (e) The operation for which the Dual-Status Commander is being established;





- (f) The jurisdiction in which the Dual-Status Commander is permitted to perform [his/her] duties in a State status (i.e., State Active Duty status or in duty status pursuant to Title 32, U.S. Code); and
    - (g) The duration for which the Dual-Status Commander is established.
  - 2. The Secretary of Defense or the Secretary of Defense's designee will issue a letter (TAB B) specifying:
    - (a) The name and grade of the Dual-Status Commander;
    - (b) Whenever possible, the name and grade of a successor Dual-Status Commander;
    - (c) Authorization for the Dual-Status Commander and the successor Dual-Status Commander, if named, to serve in both State and Federal duty statuses;
    - (d) The operation for which the Dual-Status Commander is being established;
    - (e) The joint operations area in which the Dual-Status Commander is permitted to perform [his/her] duties in a Federal status (i.e. Title 10, U.S. Code); and
    - (f) The duration for which the Dual-Status Commander is established.
  - 3. The Governor of California and the Secretary of Defense or their designees will effect the order to Federal active duty and the assignment of the Dual-Status Commander as commander of State and Federal forces, as appropriate.
- B. When the Governor of California and the Secretary of Defense or their designees agree that it is necessary and proper to establish a commissioned officer in the Regular Army or Regular Air Force as the Dual-Status Commander in accordance with 32 U.S. Code §315:
- 1. The Governor of California or the Governor's designee will issue a letter (TAB C) specifying:
    - (a) The name and grade of the Dual-Status Commander;
    - (b) Whenever possible, the name and grade of a successor Dual-Status Commander;
    - (c) Acceptance of the detail of the officer so named to the Army National Guard of California or the Air National Guard of California, as the case may be;
    - (d) Agreement to tender to the detailed officer a commission in the Army National Guard of California or the Air National Guard of California, as the case may be;
    - (e) Understanding that this commission is terminable at the Secretary of Defense's or Governor's discretion;
    - (f) The operation for which the Dual-Status Commander is being established;

- (g) The jurisdiction in which the Dual-Status Commander is permitted to perform [his/her] duties in a State status (i.e., State Active Duty status or in duty status pursuant to Title 32, U.S. Code); and
  - (h) The duration for which the Dual-Status Commander is established.
2. The Secretary of Defense or the Secretary of Defense's designee will issue a letter (TAB D) specifying:
- (a) The name and grade of the Dual-Status Commander;
  - (b) Whenever possible, the name and grade of a successor Dual-Status Commander;
  - (c) That the officer so named is qualified and certified to perform the duties of a Dual-Status Commander;
  - (d) That the officer so named is detailed to the Army National Guard of California or the Air National Guard of California, as the case may be;
  - (e) Permission for the detailed officer to accept a commission in the Army National Guard of California or the Air National Guard of California, as the case may be, without prejudicing [his/her] rank and without vacating [his/her] regular appointment;
  - (f) Authorization for the Dual-Status Commander and the successor Dual-Status Commander, if named, to serve in both State and Federal duty statuses;
  - (g) Understanding that this commission is terminable at the Secretary of Defense's or Governor's discretion;
  - (h) The operation for which the Dual-Status Commander is being established;
  - (i) The joint operations area in which the Dual-Status Commander is permitted to perform [his/her] duties in a Federal status (i.e. Title 10, U.S. Code); and
  - (j) The duration for which the Dual-Status Commander is established.
3. The Governor of California and the Secretary of Defense or their designees will effect the appointment of a Regular Army or Regular Air Force officer as an Army National Guard or Air Force National Guard officer and assignment of the Dual-Status Commander as commander of State and Federal forces as appropriate.
- C. If the Governor of California and the Secretary of Defense or their designees agree to appointment of a Dual-Status Commander, such consent and authorization may be given orally to expedite the emergency response and, in such circumstances, the required appointment letters will be signed by the Governor and the Secretary of Defense or their designees as circumstances permit.

IV. **DUAL-STATUS COMMANDER TERMS, RESPONSIBILITIES, AND PROCEDURES.**

A. Mutually Exclusive Chains of Command. The Dual-Status Commander will exercise command on behalf of, and receive separate orders from, a Federal chain of command and exercise command on behalf of, and receive separate orders from, a State chain of command. As such, the Dual-Status Commander is an intermediate link in two distinct, separate chains of command flowing from different sovereigns. Although the Dual-Status Commander is empowered to exercise command on behalf of, and may receive orders from, two separate chains of command, those chains of command must recognize and respect the Dual-Status Commander's duty to exercise all authority in a completely mutually exclusive manner, i.e., either in a Federal or State capacity, giving orders on behalf of or relaying orders from the Federal chain of command to Federal military forces and giving orders on behalf of or relaying orders from the State chain of command to State military forces, but never relaying Federal orders to State military forces or State orders to Federal military forces. This MOA contains special procedures to maintain the required separation of State and Federal chains of command.

1. State Command and Control:

- (a) The Governor of California, through [his/her] Adjutant General, will provide command and control over California National Guard units and personnel operating in a State status (i.e., State Active Duty status or in duty status pursuant to Title 32, U.S. Code). The Dual-Status Commander, in [his/her] status as a member of the State chain of command, is subject to the orders of the Governor, through the Adjutant General of California.
- (b) The Dual-Status Commander, acting pursuant to State authority, may issue orders to assigned National Guard units and personnel serving in a State status (i.e., State Active Duty status or in duty status pursuant to Title 32, U.S. Code) in California.
- (c) Command and control of National Guard units and personnel provided to California from other States to serve in a State status (i.e., State Active Duty status or in duty status pursuant to Title 32, U.S. Code) will be determined by separate agreement between the supporting States and California.
- (d) Subject to the authority of the Governor, through the Adjutant General, the Dual-Status Commander will ensure that [his/her] orders issued to California National Guard units and personnel, as well as those provided by other States, serving in a State status (i.e., State Active Duty status or in duty status pursuant to Title 32, U.S. Code) are consistent with the law of California.
- (e) The Dual-Status Commander will exercise military justice authority over California National Guard personnel in accordance with California law. Military justice issues concerning supporting National Guard personnel

from a State other than California will be administered in accordance with that supporting State's code.

2. Federal Command and Control:

- (a) The President, through the Secretary of Defense and the supported Combatant Commander, will provide command and control over Federal military units and personnel, including National Guard units and personnel serving in Title 10, U.S. Code, status. In [his/her] status as a member of the Federal chain of command, the Dual-Status Commander is subject to the orders of the President, through the Secretary of Defense and the supported Combatant Commander.
- (b) The Dual-Status Commander, acting pursuant to Federal authority, may issue orders to assigned or allocated Federal military units and personnel (i.e., military units and personnel on active duty pursuant to Title 10, U.S. Code, including units and personnel of the Army National Guard of the United States, Air National Guard of the United States, the Army Reserve, the Navy Reserve, the U.S. Marine Corps Reserve, and the Air Force Reserve).
- (c) Subject to the authority of the President, through the Secretary of Defense and the supported Combatant Commander, the Dual-Status Commander will ensure that [his/her] orders issued to Federal military units and personnel are consistent with the law of the United States.
- (d) Military justice authority over Federal military personnel will be exercised in regulations.

B. Missions.

- 1. State Military Mission: Plan, coordinate, and provide requested, authorized, and approved support to lead State agencies in accordance with guidance issued by the Governor of California or the Governor's designee.
- 2. Federal Military Mission: Plan, coordinate, and provide requested, authorized, and approved support to lead Federal agencies in accordance with guidance issued by the Secretary of Defense or the Secretary of Defense's designee.

C. Compliance with Federal and State Laws. The Dual-Status Commander must comply with all State and Federal laws applicable to the assigned mission while executing [his/her] duties. If the Dual-Status Commander perceives that orders provided by the State or Federal chains of command may violate applicable Federal or State law or create a potential conflict of interest, [he/she] must refrain from executing such orders until [he/she] has consulted with a judge advocate from both the State and Federal chains of command. If after such consultation, the Dual-Status Commander perceives that the problem has not been resolved; [he/she] will notify both chains of command and request

appropriate guidance. Notwithstanding anything in this paragraph to the contrary, State and Federal laws and policies governing emergency and immediate response authorities remain in effect for the Dual-Status Commander when functioning in his or her separate State and Federal chains of command.

D. Mission Tasking Conflicts.

1. The Dual-Status Commander should ensure there are no conflicts between Federal and State mission tasking. If the Dual-Status Commander believes a conflict exists, [he/she] should notify both chains of command at the earliest possible opportunity. Both chains of command and the Dual-Status Commander must be involved in the resolution of such conflicts.
2. In the event a mission tasking conflict cannot be resolved, the Dual-Status Commander should consult with both the Federal chain of command and the State chain of command. While the conflict is being resolved, the Dual-Status Commander will continue to execute [his/her] Federal mission taskings with assigned Federal forces and will continue to execute [his/her] State mission taskings with assigned State forces. State and Federal laws and policies governing emergency and immediate response authorities also remain in effect for the Dual-Status Commander when functioning in his or her separate State and Federal chains of command.
3. If such mission tasking conflicts cannot be resolved, the Secretary of Defense or the Governor or their designees may terminate the issued Dual-Status Commander assignment as a Dual-Status Commander and the officer serving as Dual-Status Commander's dual status.

E. Sharing of Documentation. To avoid miscommunication, the State and Federal chains of command should authorize the Dual-Status Commander to share documents/guidance concerning their respective missions and mission taskings when the Dual-Status Commander determines it is necessary and proper.

F. Release of Federally Classified Information. The release of federally classified documents/guidance shall be conducted in accordance with Department of Defense directives and policies.

G. Anti-Terrorism/Force Protection Standards. California National Guard units and personnel, and those provided by other States, under the command of the Dual-Status Commander will comply with anti-terrorism/force protection (AT/FP) standards and guidance provided by their Governor, through their Adjutant General. Federal military units and personnel under the command of the Dual-Status Commander will comply with the AT/FP standards and guidance provided by the supported Combatant Commander.

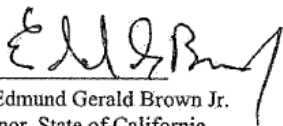
H. Status. During the course of executing [his/her] assigned duties, the Dual-Status Commander shall clearly describe the status in which he/she is tasking military forces and the status of the affected forces and shall memorialize such status decisions and

actions in writing as soon as circumstances permit. The purpose of this requirement is to mitigate possible confusion in appropriate State/Federal mission taskings by the Dual-Status Commander. If it becomes necessary to make a change in such mission taskings, the Dual-Status Commander will ensure both the State and Federal chains of command are notified of the necessity for such changes.

- I. Delegation from Sovereigns. It is agreed and understood that the State and Federal sovereigns may delegate their command authority to intermediate officials or officers who will, on their behalf, issue orders to the Dual-Status Commander. This delegation will typically occur via written orders but may take another form in exigent circumstances.
- J. Incapacity or Relief of the Dual-Status Commander. In the event the Dual-Status Commander becomes incapacitated or otherwise unable to serve subsequent to his/her assignment, the Governor of California and the Secretary of Defense or their designees, agree to take those actions necessary to establish a successor Dual-Status Commander. Whenever possible, the original appointment letter should pre-designate a successor Dual-Status Commander to assume command in the event the duly appointed Dual-Status Commander becomes incapacitated or is relieved of command. If a qualified and certified successor Dual-Status Commander is not available when the Dual-Status Commander becomes incapacitated or is otherwise no longer able serve, the Adjutant General will designate an appropriate commander for California National Guard units and personnel, and those provided by other States, operating in a State status (i.e., State Active Duty status or in duty status pursuant to Title 32, U.S. Code), and the supported Combatant Commander will designate an appropriate commander for Federal military units and personnel (i.e., military units and personnel on active duty pursuant to Title 10, U.S. Code), until such time as a successor Dual-Status Commander can be appointed.
- V. EFFECTIVE DATE. This MOA will become effective upon signature by the Governor of California and the Secretary of Defense or their designees and remain in effect unless terminated in accordance with paragraph VII.
- VI. MODIFICATIONS. This MOA may be amended or revised by the mutual agreement of the Governor of California and the Secretary of Defense or their designee(s). Modifications and revisions made under exigent circumstances by the mutual oral agreement of the Governor of California and the Secretary of Defense or their designees will be memorialized in writing as soon as circumstances permit.
- VII. TERMINATION. This MOA may be terminated in writing by the Governor of California or the Secretary of Defense or their respective designee(s). A written termination will be provided to the other party as soon as possible but not later than 30 days prior to the intended date of termination. Similarly, the Governor of California or the Secretary of Defense or their respective designees may terminate at any time the letters of authorization, consent, detail, and permission required by 32 U.S. Code §325 or 32 U.S. Code §315 for Dual-Status Commander. Termination of these letters results in the release from Title 10, U.S. Code, active duty for a Dual-Status Commander occupying dual status in accordance with 32 U.S.

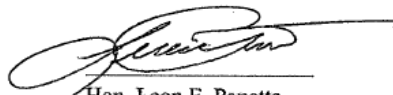


Code §325, and the release from State National Guard duty of a Dual-Status Commander occupying dual status in accordance with Title 32 U.S. Code §315.



Hon. Edmund Gerald Brown Jr.  
Governor, State of California

\_\_\_\_\_  
Date



Hon. Leon E. Panetta  
Secretary of Defense<sup>1</sup>

NOV 28 2011

\_\_\_\_\_  
Date

<sup>1</sup> Pursuant to 76 Fed. Reg. 22003 (April 14, 2011)

# TAB F

**Policy Coordination Sheet**

**Subject:** Governor of California's Consent for a Dual-Status Commander during the 2014 Wildfire Season

**Control Number:** \*OSD003176-14 \*

<b>Title/Organization</b>	<b>Name</b>	<b>Coordination Requested</b>	<b>Coordination Received</b>
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**From:** (b) (6) Lt Col USAF NG NGB (US)  
**To:** (b) (6) Col USAF NGB A5 (US)  
**Subject:** RE: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)  
**Date:** Tuesday, May 05, 2015 8:16:03 AM

---

Classification: UNCLASSIFIED  
Caveats: NONE

(b) (6)

Can you do a quick telephone call with Jeff Vanderslice from Rep. Rohrabacher's office sometime this week? If so, what times are good for you?

Vr,

(b) (6)

-----Original Message-----

From: (b) (6) Col USAF NGB A5 (US)  
Sent: Thursday, April 30, 2015 3:28 PM  
To: (b) (6) Lt Col USAF NG NGB (US)  
Subject: RE: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)

Thanks. Testing won't be complete this fire season but hopefully before next fire season. There isn't much more to tell. Standing by.

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)

-----Original Message-----

From: (b) (6) Lt Col USAF NG NGB (US)  
Sent: Thursday, April 30, 2015 3:25 PM  
To: (b) (6) Col USAF NGB A5 (US)  
Subject: Re: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)

Thanks (b) (6). I'm awaiting a call back from the staffer. Going to try and keep it simple, we'll see if he goes for it.

Also, (b) (6) says hi. Actually not.

(b) (6), Lt Col, USAF  
NGB Legislative Liaison  
Desk 571-256-7849  
BB (b) (6)

----- Original Message -----

From: (b) (6) Col USAF NGB A5 (US)  
Sent: Thursday, April 30, 2015 09:28 AM  
To: (b) (6) Lt Col USAF NG NGB (US)  
Subject: RE: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)

Short answer and we can discuss for more detail or you can give me direction on what you need from me in writing or as a brief (which I'm happy to do if you judge that the best course of action).

- We are building 2 MAFFS units for the forest service using an approp specifically for that purpose.
- We are buying some bambi buckets for helo units.
- We are testing CAD (containerized delivery system). We are testing versions of the capability from a couple of vendors including the PCAD system. That test will provide useful information for states that choose to purchase and use this capability. NGB has no plan to purchase CAD systems for the field. We could use NGREA to do an initial purchase of CAD, but there would be a problem with doing recurring purchases of these expendable items because that would be considered sustainment, which is improper for NGREA procurement funds. However, we have no plan to do any such initial purchase for the field.

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)

-----Original Message-----

From: (b) (6) Lt Col USAF NG NGB (US)  
Sent: Wednesday, April 29, 2015 7:27 PM  
To: (b) (6) Col USAF NGB A5 (US)  
Subject: RE: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

Delayed response, sorry. Thanks (b) (6). Not looking to drag you up there...that's reserved for (b) (6).

-----Original Message-----

From: (b) (6) Col USAF NGB A5 (US)  
Sent: Wednesday, April 29, 2015 12:01 PM  
To: (b) (6) Lt Col USAF NG NGB (US)  
Subject: RE: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)

Let me get the quick and dirty on PCADs and send that to you and you can decide if you want me to go. I'm not looking for an opportunity to go to the Hill but that's my job if you judge that serves the mission.

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)

-----Original Message-----

From: (b) (6) Lt Col USAF NG NGB (US)  
Sent: Wednesday, April 29, 2015 11:17 AM  
To: (b) (6) Col USAF NGB A5 (US)  
Subject: RE: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

Do want to talk to Rohrabacher's office?

-----Original Message-----

From: (b) (6) Col USAF NGB A5 (US)  
Sent: Wednesday, April 29, 2015 11:15 AM  
To: (b) (6) Lt Col USAF NG NGB (US)  
Subject: RE: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)

Yes. We are having Redstone Arsenal (gov't) build 2 MAFFS units for the forest service in response to an appropriation to do just that. We might also procure some bambi buckets for the rescue helo wings to use.

(b) (6) Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell 3 (b) (6)

-----Original Message-----

From: (b) (6) Lt Col USAF NG NGB (US)  
Sent: Wednesday, April 29, 2015 7:26 AM  
To: (b) (6) Col USAF NGB A5 (US)  
Subject: FW: Inquiry Regarding Aerial Firefighting Technology (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

Good morning sir,

Is A5 looking to "test, evaluate, or develop aerial firefighting technologies?"

I assume this would be your lane...

Vr,  
(b) (6)

Referred to AF (HAF) For processing (Pages 170 and 171-172 of 172)





**From:** (b) (6) CIV USAF NGB A5 (US)  
**To:** (b) (6) CTR USAF NGB CCY (US)  
**Subject:** FW: FY13 \$16M Congressional Add for MAFFS 2.5 (22 Apr 15).docx  
**Date:** Thursday, April 23, 2015 2:33:00 PM  
**Attachments:** [FY13 \\$16M Congressional Add for MAFFS 2.5 \(22 Apr 15\).docx](#)  
[Economy Act DF - NGB IMAFFS \(16 Apr 15\).docx](#)  
[RE FY13 \\$16M Congressional Add for MAFFS 2.5 \(22 Apr 15\).docx \(8.42 KB\).msg](#)  
[RE DF for IMAFFS \(9.80 KB\).msg](#)  
**Importance:** High

---

(b) (6),

This is a hot MIPR request approved by (b) (6) (Attached). Please process it ASAP, like as of yesterday. The funds are going to Redstone Arsenal and need to be there fast so they can execute the requirement. Otherwise we might be turning back these funds to Congress. Which as you know is not a good thing. Also, ensure the attached letter is signed (see email from SMSgt (b) (6) "RE: D&F for IMAFFS")....

V/r  
(b) (6)

(b) (6), GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525  
Cell: (b) (6)  
BB: (b) (6)

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-----Original Message-----

**From:** (b) (6) CIV USAF NGB A5 (US)  
**Sent:** Wednesday, April 22, 2015 4:14 PM  
**To:** (b) (6) Col USAF NGB A5 (US); (b) (6) CIV USAF NGB A5 (US)  
**Subject:** FY13 \$16M Congressional Add for MAFFS 2.5 (22 Apr 15).docx  
**Importance:** High

Sir,

Request your approval to MIPR \$16M of FY13 funds from a congressional add to Redstone Arsenal. These funds will be used to construct and assemble two prototype Improved Military Aerial Firefighting Systems (IMAFFS) for the Forest Service. The two systems, once proven, will be used by the Forest Service, and will become the standard for any future procurements related to aerial firefighting systems used in C-130 aircraft.

V/r

(b) (6)

(b) (6), GS-13, DAF

Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

DSN: 612-8525

Com: (240) 612-8525

Cell: (b) (6)

BB: (b) (6)

PRIVACY ACT STATEMENT: This electronic transmission may contain FOR OFFICIAL

USE ONLY (FOUO) information that must be protected under the Privacy Act of 1974 (see AFI 33-332). Do not release outside of DoD channels without the consent of the originator's office. If you received this message in error, please notify the sender by reply e-mail and delete all copies of message.

## A5 Funding Request

1. Date of Request: 22 Apr 2015 Funds needed by: ASAP No rush Date:
2. Spend Plan Program: Improved Modular Airborne Fire Fighting System (IMAFFS)
3. Spend Plan Category: DOMOPS AS/GPA Mobility ISR/C2/Cyber SpecOps/CSAR SIMS ACS  
Congressional Add
4. Funding: Circle Funding Type & Fiscal Year  
O&M GREA 3010 3080 / 11 12 13 14

5. Blk 7: Point of Contact for Finance /Program Point of Contact

**USARMY/AMRDEC**

**Prototype Integration Facility**

**Theo Alexander**

**Redstone Arsenal, AL**

**Comm: 256-842-0038**

**FAX: 256-842-9366**

**E-mail: (b) (6) @mail.mil**

6. Blks 9 a, b, c.

Complete description of line item: Continue contract efforts for IMAFFS 2.5 version. To proceed with the Phase 2 IMAFFS effort funding is needed in the following breakout:

2,500,000.00 (Reimbursable - NRE)

13,500,000.00 (Direct Cite)

Estimated length of time to procure the item(s) and/or complete the work: Estimated length of time to procure the item(s) and/or complete the work: No longer than 36 months to deliver 2 sets.

Unit cost: **\$6,750,000**

Quantity: **2**

NRE expense: **\$2,500,000**

Total cost for all items plus fee: **\$16,000,000**

**Shipping cost: Included in price**

**Total cost of procurement and delivery: \$16,000,000**

7. A5 Point of Contact:

Name: Mr. **(b) (6)**

Phone: Comm 240-612-8525 DSN: 612-8525

NGB Point of contact (if funds are being used for other directorates such as A2 or A7).

Name: **(b) (6)**

Telephone Number: **DSN: 612-9304**

8. Delivery Point of Contact: **(b) (6)**

**Program Management Team Lead**

**Prototype Integration Facility (PIF)**

**Desk: 256-842-8053**

**Cell: 256-755-1369**

Email: (b) (6) @mail.mil

*9.a. Program Funding Exchange (if applicable):*

*Withdraw from Program:*

*Withdraw Fiscal Year:*

*Withdraw Amount:*

*9.b. Detailed Funding History:*

10. Comments/Discussion: To proceeding with contract efforts for IMAFFS 2.5 version (with ability go back and modify the contract for add-on options/features selected by USFS/NGB in Sep/Oct).

**DETERMINATION AND FINDINGS (D&F)  
FOR AN INTERAGENCY ACQUISITION  
UNDER THE ECONOMY ACT  
FAR 17.502-2**

I have reviewed the requirement for Improved Modular Airborne Fire Fighting System (IMAFFS). In accordance with the Economy Act, the National Guard Bureau (NGB)/A5P intends to conduct an interagency acquisition with AMRDEC, PIF which will contract for these supplies/services on our behalf.

**FINDINGS**

- 1) The use of an interagency acquisition is in best interest of the Government.
- 2) The supplies or services cannot be obtained as conveniently or economically by contracting directly with a private source.
- 3) The following circumstances applies apply to this acquisition:
  - a) The acquisition will appropriately be made under an existing contract of the servicing agency, entered into before placement of the order, to meet the requirement of the servicing agency for the same or similar supplies or services, and
  - b) The servicing agency has the capability or expertise to enter into a contract for such supplies or services that is not available within the requesting agency.

**DETERMINATION**

Given the findings outlined above, in accordance with 31 U.S.C. 1535 and FAR Subpart 17.502-2, I hereby determine that it is in the best interest of the Government to place an order for Improved Modular Airborne Fire Fighting System (IMAFFS) with AMRDEC, PIF under the authority of the Economy Act. IAW FAR 17.502-2(c)(2), the undersigned certifies to be a Contracting Officer of the requesting agency or another official designated by the agency head with authority to approve Economy Act Orders.

\_\_\_\_\_  
Name  
Title

**From:** (b) (6) SMSgt USAF NG NCANG (US)  
**To:** (b) (6) CIV NG NGB (US)  
**Cc:** (b) (6) Civ USAF ANG NGB/A5D"  
**Subject:** RE: D&F for IMAFFS  
**Date:** Tuesday, April 21, 2015 11:33:35 AM

---

(b) (6), please upload the D&F into ABSS when the MIPR is submitted. Thank you.

VR,

(b) (6)

SMSgt (b) (6)  
ANG Contracting CFFM/FAM  
240-612-7072-Office  
(b) (6) -Cell  
(b) (6) @mail.mil  
SIPR (b) (6) @mail.smil mil

-----Original Message-----

**From:** (b) (6) SMSgt USAF NG NCANG (US)  
**Sent:** Monday, April 20, 2015 2:26 PM  
**To:** (b) (6) CIV NG NGB (US)  
**Cc:** (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** FW: D&F for IMAFFS  
**Importance:** High

(b) (6), can you sign the attached or have Col Staresina sign? Thank you!

VR,

(b) (6)

SMSgt (b) (6)  
ANG Contracting CFFM/FAM  
240-612-7072-Office  
(b) (6) -Cell  
(b) (6) @mail.mil  
SIPR: (b) (6) @mail.smil mil

-----Original Message-----

**From:** (b) (6) CIV USAF NGB A5 (US)  
**Sent:** Monday, April 20, 2015 2:16 PM  
**To:** (b) (6) SMSgt USAF NG NCANG (US)  
**Subject:** D&F for IMAFFS  
**Importance:** High



SMSGt (b) (6),

Per our earlier discussion, attached is the D&F needed by the Army PIF in AL...This is the organization building the two prototype IMAFFS for the Air Force and the Forest Service. The funds for the project are from a congressional add specifically for this program in the amount of \$16M. The PIF has done a lot of the work up to this point and are ready to award the contract for the two prototypes.

On another note, the two books I mentioned this morning can be found at the following web site. Please let me know if there are projects you believe you can manage the procurement...

<http://www.ang.af.mil/angprioritiesbooks/>

Thanks.

V/r

(b) (6)

(b) (6), GS-13, DAF

Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

DSN: 612-8525

Com: (240) 612-8525

Cell: (541) 331-1920

BB: (b) (6)

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**From:** (b) (6) ) CIV USAF NGB A5 (US)  
**To:** (b) (6) CIV USAF NGB A5 (US); (b) (6) Col USAF NGB A5 (US)  
**Cc:** (b) (6) Col USAF NGB A5 (US); (b) (6) CIV USAF NGB A5 (US)  
**Subject:** RE: FY13 \$16M Congressional Add for MAFFS 2.5 (22 Apr 15).docx  
**Date:** Thursday, April 23, 2015 2:25:06 PM

---

Approved.

(b) (6), GS-15, DAF  
Associate Director, Plans and Requirements, NGB/A5  
240-612-9351 (DSN 612-9351)  
(b) (6) (cell)  
\*\*\*please note the new email address!\*\*\*

-----Original Message-----

**From:** (b) (6) CIV USAF NGB A5 (US)  
**Sent:** Wednesday, April 22, 2015 4:16 PM  
**To:** (b) (6) CIV USAF NGB A5 (US); (b) (6) Col USAF NGB A5 (US)  
**Cc:** (b) (6) Col USAF NGB A5 (US); (b) (6) CIV USAF NGB A5 (US)  
**Subject:** FW: FY13 \$16M Congressional Add for MAFFS 2.5 (22 Apr 15).docx

Col (b) (6),

On behalf of A5P, recommend approval to send FY 13 \$16M for MAFFS 2.5.  
This is the 3010 procurement money for that we have to build two improved MAFFS devices. Col Bryan completed discussions with NGB/AQ's JA, and will provide a follow on summary. All were in concurrence to proceed.

(b) (6), GS-14, DAF  
Strategy and Plans Division, NGB/A5X  
Comm 240-612-9356 DSN 612-9356  
BB (b) (6)  
(b) (6) @mail mil  
\*\*\*please note the new email address!\*\*\*

-----Original Message-----

**From:** (b) (6) CIV USAF NGB A5 (US)  
**Sent:** Wednesday, April 22, 2015 3:04 PM  
**To:** (b) (6) CIV USAF NGB A5 (US)  
**Subject:** FY13 \$16M Congressional Add for MAFFS 2.5 (22 Apr 15).docx

(b) (6),

Attached is the MIPR request to send the 3010 funds to Redstone Arsenal...Let me know if I need to make corrections.

V/r  
(b) (6)

(b) (6), GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

DSN: 612-8525  
Com: (240) 612-8525  
Cell: (541) 331-1920  
BB: (b) (6)

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**From:** (b) (6) [Civ USAF ANG NGB/A5X](#)  
**To:** (b) (6) [Col USAF ANG NGB/A5P](#)  
**Subject:** Fw: MAFFS  
**Date:** Friday, February 20, 2015 12:14:43 PM

---

(b) (6)

(b) (6) asked me to send this on to you.

(b) (6), DAF, GS-14  
NGB/A5X  
Chief, Strategy and Plans  
Comm: 240-612-9356  
BB: (b) (6)

----- Original Message -----

From: Hillestadandassociates [<mailto:hillestadandassociates@comcast.net>]  
Sent: Friday, February 20, 2015 09:53 AM  
To: (b) (6) Civ USAF ANG NGB/A5X  
Subject: MAFFS

(b) (6)

Please pass to (b) (6) if you will that maffs corp has engaged the proper team to provide their legal position and should be done very soon.

He apologizes for talking so long but wants to get it right.

Mikee

Sent from my iPhone

## A5 Funding Request

1. Date of Request: 14 Mar 13 Funds needed by: ASAP No rush Date: 1 Apr 13
2. Spend Plan Program: MAFFS C-130 Landing Gear Warning Horn Quote-to-Quote
3. Spend Plan Category: DOMOPS AS/GPA Mobility ISR/C2/Cyber Spec Ops/CSAR SIMS
4. Funding: Circle Funding Type & Fiscal Year  
O&M NGREA 3010 3080 / 10 11 12 13
5. Blk 7: Point of Contact for Finance /Program Point of Contact

Organization: AFLCMC/WLN

Name: (b) (6)

Address: 235 Byron Street Robins AFB GA 31098

Accounting Installation UIC: 4165

Phone # (DSN): 468-2713

E-Mail: (b) (6)

6. Blks 9 a, b, c.

Complete description action being taken: Initial design assessment to provide all courses of actions available to address MAFFS C-130J Landing Gear Warning Horn issue. Crews cannot silence landing gear warning horn during MAFFs missions, which is a safety hazard. This funding is the first increment, to be followed by additional funds to implement solution.

Unit cost: \$150,000

Quantity: see below MIPR Fee: \$0

7. A5 Point of Contact:

Name: Major (b) (6)

Telephone Number: 240-612-7803

NGB Point of contact (if funds are being used for other directorates such as A2 or A7).

Name: Telephone Number:

8. Delivery Point of Contact (if applicable):

Point of Contact for Finance /Program Point of Contact

Organization: NGB/A5

Name: Major (b) (6)

Address: 3500 Fetchet Avenue Join Base Andrews MD 20762-5157

Phone # (Comm/DSN): 612-7803

E-mail (Comm/DSN): (b) (6)@ang.af.mil

9. Program Funding Exchange (if applicable):

Withdraw from Program:

Withdraw Fiscal Year:

Withdraw Amount:

10. Comments/Discussion:

Funds must be sent via BA transfer to AFLCMC/WLN, (b) (6) 235 Byron Street Robins AFB GA 31098, (DSN): 468-2713, (b) (6)@robins.af.mil

## A5 Funding Request

1. Date of Request: 22 Apr 2015 Funds needed by: ASAP No rush Date:
2. Spend Plan Program: Improved Modular Airborne Fire Fighting System (IMAFFS)
3. Spend Plan Category: DOMOPS AS/GPA Mobility ISR/C2/Cyber SpecOps/CSAR SIMS ACS  
Congressional Add
4. Funding: Circle Funding Type & Fiscal Year  
O&M GREAS 3010 3080 / 11 12 13 14

5. Blk 7: Point of Contact for Finance /Program Point of Contact

**USARMY/AMRDEC**

**Prototype Integration Facility**

(b) (6)

Redstone Arsenal, AL

Comm: 256-842-0038

FAX: 256-842-9366

E-mail: (b) (6)

6. Blks 9 a, b, c.

Complete description of line item: Continue contract efforts for IMAFFS 2.5 version. To proceed with the Phase 2 IMAFFS effort funding is needed in the following breakout:

2,500,000.00 (Reimbursable - NRE)

13,500,000.00 (Direct Cite)

Estimated length of time to procure the item(s) and/or complete the work: Estimated length of time to procure the item(s) and/or complete the work: No longer than 36 months to deliver 2 sets.

Unit cost: **\$6,750,000**

Quantity: **2**

NRE expense: **\$2,500,000**

Total cost for all items plus fee: **\$16,000,000**

Shipping cost: **Included in price**

Total cost of procurement and delivery: **\$16,000,000**

7. A5 Point of Contact:

Name: (b) (6)

Phone: Comm 240-612-8525 DSN: 612-8525

NGB Point of contact (if funds are being used for other directorates such as A2 or A7).

Name: (b) (6)

Telephone Number: **DSN: 612-9304**

8. Delivery Point of Contact: (b) (6)

**Program Management Team Lead**

**Prototype Integration Facility (PIF)**

Desk: 256-842-8053

Cell: (b) (6)



Email: (b) (6) .civ@mail.mil

9.a. *Program Funding Exchange (if applicable):*

*Withdraw from Program:*

*Withdraw Fiscal Year:*

*Withdraw Amount:*

9.b. *Detailed Funding History:*

10. Comments/Discussion: To proceeding with contract efforts for IMAFFS 2.5 version (with ability go back and modify the contract for add-on options/features selected by USFS/NGB in Sep/Oct).

## MAFFS Mission Status Courses of Action – Summary Sheet



	COA 1: Mixed Titles 10/32	COA 2: Title 32 AGR convert T10	COA 3: Title 32 orders convert T10	COA 4: Title 10
Pros	Volunteerism high, CC's have the option to order members to the mission	Clean C2 during mission; retirement points & benefits the same for all personnel	Clean C2 during the mission; same retirement points and benefits of T10	Direct line of authority for clean C2
Cons	C2 not clean; Tech benefits not equivalent to T32 502f /T10 and T32 retirement points not equivalent to T10 12301d	AGR positions have to be transferred from other units or allocated to ANG through legislative efforts	Expensive DoD bill; DSGs with civ employment likely excluded; mil techs benefits gone unless legislative changes; volunteerism issues likely; interferes with deployments and pre/post deployment benefits	Volunteerism could be a factor due to DSG civilian employment (volunteer vs ordered) and process for tech benefit reimbursement; slow orders process that is not codified
Risk		Not acquiring enough AGR positions to perform the mission		Mission failure due to volunteerism
Remarks	TAG preference; HASC/NDAA 2015 language units, AGR, technicians, individuals	What status would the ground crew be in while deployed?	ACA like Mission; Aircrew vs. Ground crew	ASD(HD), NC, USAF preferred

## MAFFS Mission Status Courses of Action – COA 1



	COA 1: Mixed Titles 10/32
Pros	Volunteerism high, CC's have the option to order members to the mission
Cons	C2 not clean; Tech benefits not equivalent to T32 502f /T10 and T32 retirement points not equivalent to T10 12301d
Risk	
Remarks	TAG preference; HASC/NDAA 2015 language units, AGR, technicians, individuals





	<b>COA 2: Title 32 AGR convert to Title 10 for mission</b>
Pros	Clean C2 during mission; retirement points & benefits the same for all personnel
Cons	AGR positions have to be transferred from other units or allocated to ANG through legislative efforts
Risk	Not acquiring enough AGR positions to perform the mission
Remarks	What status would the ground crew be in while deployed?



	<b>COA 3: Title 32 orders convert to Title 10 for mission</b>
Pros	Clean C2 during the mission; same retirement points and benefits of T10
Cons	Expensive DoD bill; DSGs with civ employment likely excluded; mil techs benefits gone unless legislative changes; volunteerism issues likely; interferes with deployments and pre/post deployment benefits
Risk	
Remarks	ACA like Mission; Aircrew vs. Ground crew





	COA 4: Title 10
Pros	Direct line of authority for clean C2
Cons	Volunteerism could be a factor due to DSG civilian employment (volunteer vs ordered) and process for tech benefit reimbursement; slow orders process that is not codified
Risk	Mission failure due to volunteerism
Remarks	ASD(HD), NC, USAF preferred



## A5 Funding Request

1. Date of Request: 12 Dec 2014 Funds needed by ASAP No rush Date:
2. Spend Plan Program: Modular Airborne Fire Fighting System (MAFFS)
3. Spend Plan Category: DOMOPS AS/GPA Mobility ISR/C2/Cyber SpecOps/CSAR SIMS ACS  
Congressional Add
4. Funding: Circle Funding Type & Fiscal Year  
O&M GREA 3010 3080 / 11 12 13 14

5. Blk 7: Point of Contact for Finance /Program Point of Contact

**USARMY/AMRDEC**

**Prototype Integration Facility**

**Lara Wallace**

**Redstone Arsenal, AL**

**Comm: 256-313-2026**

**FAX: 256-842-9366**

E-mail: **(b) (6)** [@mail.mil](mailto:(b) (6)@mail.mil)

6. Blks 9 a, b, c.

Complete description of line item: Continue contract efforts for IMAFFS 2.5 version. To proceed with the Phase 2 IMAFFS effort funding is needed in the following breakout:

755,000.00 (Reimbursable - NRE)

5,245,000.00 (Direct Cite)

Estimated length of time to procure the item(s) and/or complete the work: Estimated length of time to procure the item(s) and/or complete the work: No longer than 36 months to deliver 2 sets from date of contract award.

**NOTE:** These aren't the total funds required for procurement, but what is required to start the procurement of the first two MAFFS.

Unit cost: **\$2,622,500**

Quantity: **2**

NRE expense: **\$755,000**

Total cost for all items plus fee: **\$6,000,000**

Shipping cost: **Included in price**

Total cost of procurement and delivery: **\$6,000,000**

7. A5 Point of Contact:

Name: Mr. **(b) (6)**

Phone: Comm 240-612-8525 DSN: 612-8525

NGB Point of contact (if funds are being used for other directorates such as A2 or A7).

Name: **(b) (6)**

Telephone Number: **DSN: 612-9304**

8. Delivery Point of Contact: **(b) (6)**

**Program Management Team Lead**

**Prototype Integration Facility (PIF)**

Desk: 256-842-8053

Cell: (b) (6)

Email: (b) (6)@us.army.mil

[www.redstone.army.mil/amrdec/pif/](http://www.redstone.army.mil/amrdec/pif/)

*9.a. Program Funding Exchange (if applicable):*

*Withdraw from Program:*

*Withdraw Fiscal Year:*

*Withdraw Amount:*

*9.b. Detailed Funding History:*

10. Comments/Discussion: To proceeding with contract efforts for IMAFFS 2.5 version (with ability go back and modify the contract to a version selected by USFS/NGB in Dec/Jan).

**From:** (b) (6) Civ USAF ANG NGB/A5D  
**To:** (b) (6) Col USAF ANG NGB/A5P (b) (6) @ang.af.mil  
**Cc:** (b) (6) Civ USAF ANG NGB/A5X; (b) (6) Civ USAF ANG NGB/A3M  
**Subject:** MAFFS Funding  
**Date:** Wednesday, January 07, 2015 11:42:00 AM  
**Attachments:** [Mod 24 and data page.pdf](#)  
[Data Rights Letter Nov 30, 2012.docx](#)  
[1-2159 Aero Union AFFS Complete Contract 2.pdf](#)  
[FY13 \\$6M MAFFS 2 \(42.0 KB\).msg](#)

---

Sir,

In the attached modification 24 dated July 3, 2006 to contract 54-024B-1-2159, dated April 10, 2000, you will find where Aero Union agreed to provide the data rights so the FS could build or have another vendor build the MAFFS. As it is Redstone Arsenal is modifying the original data to incorporate new requirements. Also the original contract required Aero Union to provide level 2 drawings to FS (I believe section I or H of the completed original contract). These drawings are everything except the manufacturing procedures and materials consumed in the manufacturing process.

Bottom line: I believe the gov't is following a legal path for development of a prototype, and I would like permission to send the funds to Redstone Arsenal (see attached email request for \$6M).

Some questions of the key players from Forest Service and Redstone Arsenal about follow on actions after the first prototype is developed:

1. Will the government contract with industry to build the MAFFS after the first two articles (Prototypes) are assembled and tested?

Yes; Gov't can issue contract to industry or go back to Redstone Arsenal for manufacturing of the MAFFS. I recommend we go to industry.

2. Were the Level 2 drawings used to modify MAFFS 1.0 to MAFFS 2.0/2.5?

Yes, and the government will receive level 3 drawings to contract with industry. Level 3 drawings are everything in the Level 2 drawings along with manufacturing procedures, materials consumed, and models for a vendor to manufacture the new MAFFS.

V/r

(b) (6)

(b) (6), GS-13, DAF

Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

DSN: 612-8525

Com: (240) 612-8525

Cell: (b) (6)

BB: (b) (6)

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**Nikolaisen, Jennifer A CIV NG NGB (US)**

---

**From:** (b) (6) CIV (US) (b) (6) .civ@mail.mil>  
**Sent:** Wednesday, January 27, 2016 10:46 AM  
**To:** (b) (6) CIV NG NGB (US); (b) (6)  
**Cc:** (b) (6) CIV (US)  
**Subject:** Re: MAFFS Corp

(b) (6),

We are still evaluating their role and whether if they are a value to work with. RDS has a signed sub-agreement with them (for contracting purposes) and they have been inquiring. Part of cost /program discussions we are having with RDS. I can include you in a debrief of this once we arrive at decision point.

(b) (6)

(b) (6)  
Prototype Integration Facility (PIF)  
Desk: 256.842.8053  
BlackBerry: (b) (6)  
Email: (b) (6) .civ@mail.mil

Original Message

**From:** (b) (6) CIV NG NGB (US)  
**Sent:** Wednesday, January 27, 2016 9:37 AM  
**To:** (b) (6) CIV (US); (b) (6)  
**Subject:** MAFFS Corp

(b) (6),

How is MAFFS Corp fitting into the project?

(b) (6)

(b) (6), DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
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Comm 240 612 9304  
DSN 612 9304  
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**From:** [Erin Owens](#)  
**To:** (b) (6) @ang.af.mil; Bob Osengard (usfs789@gmail.com); bob.allman@stratag-inc.com; (b) (6) CIV (US); Chris Palmiter (chris.palmiter@stratag-inc.com); (b) (6) CIV USAF (US); Christopher Reeves; (b) (6) CIV USAF (US); (b) (6) (b) (6) Erin Owens; (b) (6) CIV NG NGB (US); (b) (6) Lt Col USAF NGB A5 (US); (b) (6) CIV USAF (US); Jeff Bullington (jeffery.bullington@stratag-inc.com); Jeremiah Schock; Jerry Stoddard; Jim Maples; Joe Thomas; Josh Sims; (b) (6) @fs.fed.us; (b) (6) CIV USAF AFLCMC MOB (US); (b) (6) CTR USARMY RDECOM AMRDEC (US); Kristin Lauer; Larry Roseke; (b) (6) CIV USARMY AMRDEC (US); (b) (6) CTR (US); Mandy Johnson; Mark Reed; (b) (6) CIV USAF (US); (b) (6) (US); (b) (6) CIV USAF (US); (b) (6) CIV USAF (US); (b) (6) (b) (6) CTR (US); Ron Craft (rcraft@craftdesigns.net); Ronnie Weaver; Russ Kerl (russ.kerl@stratag-inc.com); (b) (6) Sara Roe; (b) (6) CTR (US); (b) (6) Wayne Craft (r.wayne.craft@craftdesigns.net)  
**Subject:** [Non-DoD Source] I-MAFFS IPT Meeting Minutes 18MAY2016  
**Date:** Thursday, May 19, 2016 8:19:18 AM  
**Attachments:** [image001.png](#)  
[IMAFF IPT 21 Meeting Minutes 20160518 Final.docx](#)

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ALCON,

The Meeting Minutes from IMAFFS IPT 21 May 18, 2016 are attached. Please let me know if you have any questions.

Next IPT MEETING:

Hosted by: RDS, Research Dr. / Phone Bridge

Date: June 1, 2016 Wednesday

Time: 0900 - 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#

Thank you,

Erin R. Owens

Aviation Project Assistant

erin.owens@yms-hsv.com < Caution-<mailto:erin.owens@yms-hsv.com> >

256-319-4312 ext.4057

---

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“22 CFR Part 125.4 (b) (9) applicable.”



## Meeting Minutes

Meeting: **IPT 21 for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II**

Date of Meeting: 18 May 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during IPT 20 April 20, 2016.

- Per SPO – Will not have “K” Factor for Tank Fatigue Analysis for 2 more weeks. RDS proposed moving forward on analysis. SPO agreed to this path forward.
- Per RDS - still revising drawings reviewed at PDR. These will be ready in time for the next Table Top Review.
- Per RDS – Foam Tank being analyzed in same manner as main tank. RDS will deliver analysis with drawings.

### **Action Items Added:**

**None**

### **Action Items Closed:**

**57 – SPO has determined that hatch has not been approved for J Model.**

**75- RDS has determined that Skynode has not been MIL tested.**

### **Action Items Altered:**

**56 – Moved ECD from 18 May 16 to 01 June 16.**

### Next IPT MEETING:

Hosted by: RDS, Research Dr. / Phone Bridge

Date: June 1, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#

## Attendees List

Name	Organization	Phone #	E-Mail Address	Check Box
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(b) (6)	USAF SPO	478-327-9029	(b)(6)@us.af.mil	PH
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(b) (6)	NGB			
(b) (6)	USAF/A5		(b)(6)@us.af.mil	

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**Subject:** [Non-DoD Source] IMAFFS Engineering Conference Meeting Minutes  
**Date:** Tuesday, March 08, 2016 9:36:06 AM  
**Attachments:** image003.png  
MAFFS\_Engineering\_Conf\_Meeting\_Minutes\_24\_25FEB2016.doc  
MAFFS\_Engineering\_Conf\_Meeting\_Minutes\_25FEB2016.doc

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ALCON,

The Meeting Minutes from the Engineering Conference held February 24th-25th are attached. Please let me know if you have any questions.

Thanks,

Sara Roe

Aviation Project Assistant

Office: 256-704-3163 ext. 4049

sara.roe@yms-hsv.com <Caution-<mailto:sara.roe@yms-hsv.com>>

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“22 CFR Part 125.4 (b) (9) applicable.”



## Meeting Minutes

Meeting: Engineering Conference for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II

Date of Meeting: 25 February 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during the Engineering Conference February 25, 2016.

- Discussed the Electrical Loads Analysis. RDS will perform inrush testing.
- RDS stated that if there is a component used on the MAFFS II unit that will also be on the I-MAFFS unit then a Qualification by Similarity will be performed.
- RDS stated that there will not be a human factors CDRL. The Human Factors Report will be added into the Functional Test Report and will be presented at CDR.
- Discussed the I-MAFFS FMECA. RDS will provide a delta FMECA for failure rates of high dollar new items for I-MAFFS over MAFFS II and how that could affect the system as a whole.
- Per RDS the baffles in the main tank are increased in height to compensate for the 3300 gallon fill height. The overall design will stay the same.
- Discussed the Functional Test Procedure. RDS will ground testing prior to on-aircraft testing to ensure that there are no leaks.
- Discussed the Thrust Analysis. RDS stated that at coverage level 8 the thrust is projected to be 1000lbs higher; the thrust analysis will show that this shall not affect the S-Duct.
- Discussed antenna capabilities. (b) (6) would like a way to push data through SAT Link.
- The SPO will send RDS a contact to discuss the MACC.
- Discussed the Computer Software Product End Items. RDS will send a copy of the Software Data Package to the SPO and USFS. The SPO will put a copy in the CPIN library.
- Discussed the leak requirements. RDS does not expect the IMAFFS system to leak over ½ gallon per 24 hours or 1 pint per 6 hours and drip wells will be added to collect any leakage during servicing and removal.
- RDS cannot perform aircraft level EMC/EMI testing. USG will need to perform.

- PDR/LLP Table Top Drawing Review will be held May 3-5, 2016
- The Table Top Drawing Review for June will be held June 7-9, 2016.
- The Table Top Drawing Review for August will be held August 9-11, 2016.
- CDR will be held September 6-8, 2016.

**Action Items Added:**

**55. SPO to provide RDS with a CPIN for software**

**56. SPO to provide Airworthiness Determination Form ADF & MACC**

**57. SPO to provide approved hatch P/N's for the H and J model.**

**58. RDS to add DRIP as a CDRL**

**59. RDS to complete the Cyber Security Form.**

**Action Items Closed:**

N/A

**NEXT IPT MEETING:**

Hosted by: RDS, Research Dr. / Phone Bridge

Date: March 9, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#

**Attendees List**

Name	Organization	Phone #	E-Mail Address	Check Box
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(b) (6)	Deputy Director of Operations, NIFC, US Forest Service	208-387-5949	(b) (6) @fs.fed.us	
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(b) (6)	PIF	256-842-8053	(b) (6) .civ@mail.mil	X
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Sara Roe	RDS	256-704-3163	<a href="mailto:sara.roe@yms-hsv.com">sara.roe@yms-hsv.com</a>	X
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## Meeting Minutes

Meeting: Engineering Conference for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II

Date of Meeting: 24 February 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during the IMAFFS Engineering Conference on February 24, 2016.

- Discussed the Systems Requirements Matrix. Below are a list of changes that were made to the SRM:
  - The Verification Method for SRD 3.2.1.3 will be changed to “Analysis”.
  - Software will be added as a Responsible Performing Org to SRD 3.2.2.3.
  - “Cabin Control Box Assembly Drawing” will be added to SRD 3.2.5.3 under the Design/Product Document.
  - The Systems Phase for Verification will be changed to “On-Aircraft Functional. Test”
  - The Required Statement for SRD 3.3.1.1.13 will read as “The contractor shall provide TBD signal interfaces from the I-MAFFS to the telemetry system via an RS232 DB9P serial data port.”
  - The Verification Method for SRD 3.3.1.3.3 will be changed to “Inspection”.
  - The Verification Method for SRD 3.3.1.3.4 will be changed to “Inspection”. And “CDRL Approval will be added to the System Verification Report/Proof.
  - The Verification Method for SRD 3.3.1.3.9 will be changed to “Analysis” and the System Verification doc will read be changed to “I-MAFFS SAR Procedure”
  - The System Verification Report/Proof for SRD 3.7.1.1 will changed to “SAR” and the comments will be deleted.
  - The Required Statement for SRD 3.7.2.1 will read as “A Failure Mode and Effects Criticality Analysis (FMECA) shall be performed.”
  - The Verification Method for SRD 3.9.2.2.1 will be changed to “Test”
  - The Verification Method for SRD 3.12.1.9 will be changed to “Analysis”

- For SRD 3.12.2.1 the Verification Method will be changed to “Test”. The System Phase for Verification will be changed to “Prior to Off-Aircraft Testing”. The System Verification Report/Proof will be changed to “Weight and Balance CDRL”
- For SRD 3.12.2.2 the Verification Method will be changed to “Test”. The System Phase for Verification will be changed to “Prior to Off-Aircraft Testing”. The System Verification Report/Proof will be changed to “Weight and Balance CDRL”
- The Required Statement for SRD 3.12.3.2 shall read as “I-MAFFS shall be installable by four (4) people maximum in eight (32) man hours maximum.
- For SRD 3.12.5.3 the SW Verification Doc will be changed to “WAWF”. The System Phase for Verification will be changed to “Pre Delivery”. The System Verification Report/Proof will be changed to “QAR Acceptance”.
- The System Phase for Verification will be changed to “Unit 2 on Aircraft Functional Testing”.
- RDS will provide 1<sup>st</sup> article data for the main tank.
- RDS stated that the Main Tank Test Report would not be delivered as a CDRL but would be part of the vendor info that Engineering would have in their documentation.
- RDS will be adding a fill port on the left side of the aircraft. This will reduce the wear and tear on the equipment from being dragged under the aircraft.
- RDS will internally test LRU’s for shock.
- RDS will support a Government Verification for I-MAFFS unit 2 fit checks.

**Action Items Added:**

**50. Backup battery minimum hours. SRD 3.1.4.5**

**51. Provide SPO a copy of what Class A foam is. SRD 3.2.3.1**

**52. SPO to provide the actual relay times. SRD 3.2.5.6**

**53. SPO to provide cargo weight limitations. SRD 3.3.1.3.5**

**54. RDS to check to if there is an updated copy of DOT/FAA/FAR.AR MMODS-01. SRD 3.12.1.9**

**Action Items Closed:**

N/A

**NEXT IPT MEETING:**

Hosted by: RDS, Research Dr. / Phone Bridge

Date: March 9, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#



### Attendees List

Name	Organization	Phone #	E-Mail Address	Check Box
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ALCON,

The Meeting Minutes from IMAFFS IPT 15 are attached. Please let me know if you have any questions.

NEXT IPT MEETING:

Date: February 10, 2016 Wednesday

Time: 0900 – 1000 CST

Call in (256) 885-9106

Passcode: 592#

Thanks,

Sara Roe

Aviation Project Assistant

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“22 CFR Part 125.4 (b) (9) applicable.”

## Meeting Minutes

Meeting: **IPT # 15 for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II**

Date of Meeting: 27 January 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during the IMAFFS Phase II IPT #15.

- The RDS trip to Channel Islands, CA was discussed.
- Discussed the hydraulic line from the reservoir to the pump. The 2" dip that is in the pipe will be eliminated to make it a straight pipe.
- Discussed the noise level generated by the running compressors. RDS is going to look into headphones being an alternative to a shroud. The shroud could be ineffective and costly.
- Discussed the temperature on various parts of the compressors. It was determined the second coil for stage 4 did not appear to have much use and could potentially be eliminated to save some weight.
- Discussed the ICS port. An option would be to take the ICS connection from the left forward of the Cabin to the fill station and make a Y cable to the left and right hand side that would run through the back door.
- The door plug test feature is located at Channel Islands, CA. RDS would like to get the door plug fixture to Huntsville, AL.
- The Engineering Conference will be held February 24<sup>th</sup>-25<sup>th</sup> in Huntsville, AL.
- The SPO will email a copy of the distribution statement they would like to have on documents.

### **Action Items Added:**

N/A

### **Action Items Closed:**

16. (b)(6) to supply the recently validated MAFFS II installation instructions.
26. Assign POC for TDP Distribution Statement
29. SPO to provide info for rail system loads C-130 H & J
30. RDS to organize tabletop reviews for drawing proposed schedule sent out with IPT 13 and 14 slides
32. RDS to send SPO the NEMA III classification or add Mil. Std. for weather proofing. (SRD 3.2.5.3)
34. Bob Onsgard to provide justification for left side fill port ICS (SRD 3.3.1.1.4)
35. SPO to supply ICS connector P/Ns if we add a left side ICS port
36. RDS needs the egress requirements for the aircraft and main tank (SRD 3.7.1.1)
40. SPO to provide chart E (CG envelope) for H and J-30 model (SRD 3.16.1.5)
42. Rework to include a "shall" statement (SRD 3.7.1.6.1)
43. Rework TO requirement (SRD 3.15.1.1)
46. Update forklift spacing TBDs in the SRD (SRD3.3.1.3.4)

NEXT IPT MEETING:

Hosted by: RDS, Research Dr. / Phone Bridge

Date: February 10, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: **(256) 885-9106** / CODE: 592#



## Attendees List

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ALCON,

The Meeting Minutes from IPT 17 March 9, 2016 are attached. Please let me know if you have any questions.

NEXT IPT MEETING:

Date: March 23, 2016 Wednesday

Time: 0900 – 1000 CST

Call in (256) 885-9106

Passcode: 592#

Thanks,

Sara Roe

Aviation Project Assistant

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“22 CFR Part 125.4 (b) (9) applicable.”

## **Meeting Minutes**

Meeting: **IPT 17 for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II**

Date of Meeting: 09 March 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during IPT 17 March 09, 2016.

- RDS is currently working on adding the new requirements to the SOW.
- Discussed PDR expectations. The SPO concurred with RDS's plan to show overall conceptual level models.
- Discussed the testing requirements for the main tank. RDS would like to change the 1.5 MEOP testing requirement from analysis to "test" and change the 3.5 MEOP testing requirement from test to "analysis". RDS will use the same burst pressure disk and manufacturer that is on the current system.
- Per the SPO the cycle test usually is performed during the pressure testing.

### **Action Items Added:**

61. (b)(6) to provide testing procedures for I-MAFFS.
62. SPO to check with the Chief Engineer regarding tank testing requirements.

### **Action Items Closed:**

38. (b)(6) to provide RDS correct value for non-operational low storage temperature.
53. Weight of GSE cart with nozzle assembly.

### **NEXT IPT MEETING:**

Hosted by: RDS, Research Dr. / Phone Bridge

Date: March 23, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#

## Attendees List

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Mike Griffin	CDI	256-705-8768	<a href="mailto:mike.giffin@craftdesigns.net">mike.giffin@craftdesigns.net</a>	
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(b)(6)	USAF SPO	478-327-9029	(b)(6)@us.af.mil	PH
(b)(6)	USAF SPO		(b)(6)ctr@us.af.mil	

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**To:** [\(b\)\(6\)@ang.af.mil](#); [Bob Onsgard \(usfs789@gmail.com\)](#); [bob.allman@stratag-inc.com](#); [\(b\)\(6\)](#)  
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**Subject:** [Non-DoD Source] IMAFFS IPT 18 Meeting Minutes 23MAR2016  
**Date:** Wednesday, March 30, 2016 10:55:25 AM  
**Attachments:** [image001.png](#)  
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ALCON,

The Meeting Minutes from IPT# 18 March 23, 2016 are attached. Please let me know if you have any questions.

NEXT IPT MEETING:

Date: April 6, 2016 Wednesday

Time: 0900 – 1000 CST

Call in (256) 885-9106

Passcode: 592#

Sara Roe

Aviation Project Assistant

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“22 CFR Part 125.4 (b) (9) applicable.”

## Meeting Minutes

Meeting: **IPT 18 for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II**

Date of Meeting: 23 March 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during IPT 18 on March 23, 2016.

- Discussed SRD 3.1.4.5. (b)(6) agreed that the backup battery shall be capable of maintaining E-Dump functionality for a minimum of 5 hours.
- Discussed SRD 3.3.1.1.13b. (b)(6) would like to add “current tank volume” as a requirement for I-MAFFS to provide to the telemetry system.
- Discussed the K-Tech Soft Start LRU option. Chris Palmiter will discuss the soft start LRU with (b)(6)
- Discussed the Minimum Required Burst Pressure (MRBP) for the high pressure tank. The SPO concurs with the MRBP as long as a tank is tested. RDS stated that HyPerComp will be pressure testing several tanks.
- The SPO concurred with the minimum cycle count for the High Pressure Tank. “Cycle test-4 times rated life at MEOP (1,480 PSI) or 2 times rated life at 1.5 x MEOP(2,220 PSI). Rated life = 5,000 cycles”
- (b)(6) concurred with the temperature range for the High Pressure Tank listed in the SRD 3.9.2.1.1.

### **Action Items Added:**

65. (b)(6) to check into how often the condensation valves are cycled on the compressors.
66. (b)(6) to check the operating conditions for each aircraft model that RDS is assessing I-MAFFS against regarding the delta ELA.

### **Action Items Closed:**

45. Update telemetry TDS in the SRD
53. Weight of GSE cart with nozzle assembly.
58. RDS to add DRIP as a CDRL.

### NEXT IPT MEETING:

Hosted by: RDS, Research Dr. / Phone Bridge

Date: April 6, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#

## Attendees List

Name	Organization	Phone #	E-Mail Address	Check Box
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(b)(6)	USAF SPO	478-327-9029	(b)(6) (6)@us.af.mil	PH
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**Subject:** [Non-DoD Source] IMAFFS IPT 15 27JAN16 Meeting Minutes  
**Date:** Monday, February 08, 2016 2:45:48 PM  
**Attachments:** [image001.png](#)  
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ALCON,

The Meeting Minutes from IMAFFS IPT 15 are attached. Please let me know if you have any questions.

NEXT IPT MEETING:

Date: February 10, 2016 Wednesday

Time: 0900 – 1000 CST

Call in (256) 885-9106

Passcode: 592#

Thanks,

Sara Roe

Aviation Project Assistant

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---

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“22 CFR Part 125.4 (b) (9) applicable.”

## Meeting Minutes

Meeting: **IPT # 15 for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II**

Date of Meeting: 27 January 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during the IMAFFS Phase II IPT #15.

- The RDS trip to Channel Islands, CA was discussed.
- Discussed the hydraulic line from the reservoir to the pump. The 2" dip that is in the pipe will be eliminated to make it a straight pipe.
- Discussed the noise level generated by the running compressors. RDS is going to look into headphones being an alternative to a shroud. The shroud could be ineffective and costly.
- Discussed the temperature on various parts of the compressors. It was determined the second coil for stage 4 did not appear to have much use and could potentially be eliminated to save some weight.
- Discussed the ICS port. An option would be to take the ICS connection from the left forward of the Cabin to the fill station and make a Y cable to the left and right hand side that would run through the back door.
- The door plug test feature is located at Channel Islands, CA. RDS would like to get the door plug fixture to Huntsville, AL.
- The Engineering Conference will be held February 24<sup>th</sup>-25<sup>th</sup> in Huntsville, AL.
- The SPO will email a copy of the distribution statement they would like to have on documents.

### **Action Items Added:**

N/A

### **Action Items Closed:**

16. (b)(6) to supply the recently validated MAFFS II installation instructions.
26. Assign POC for TDP Distribution Statement
29. SPO to provide info for rail system loads C-130 H & J
30. RDS to organize tabletop reviews for drawing proposed schedule sent out with IPT 13 and 14 slides
32. RDS to send SPO the NEMA III classification or add Mil. Std. for weather proofing. (SRD 3.2.5.3)
34. Bob Onsgard to provide justification for left side fill port ICS (SRD 3.3.1.1.4)
35. SPO to supply ICS connector P/Ns if we add a left side ICS port
36. RDS needs the egress requirements for the aircraft and main tank (SRD 3.7.1.1)
40. SPO to provide chart E (CG envelope) for H and J-30 model (SRD 3.16.1.5)
42. Rework to include a "shall" statement (SRD 3.7.1.6.1)
43. Rework TO requirement (SRD 3.15.1.1)
46. Update forklift spacing TBDs in the SRD (SRD3.3.1.3.4)

NEXT IPT MEETING:

Hosted by: RDS, Research Dr. / Phone Bridge

Date: February 10, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: **(256) 885-9106** / CODE: 592#

## Attendees List

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**Subject:** [Non-DoD Source] IMAFFS CDR Meeting Minutes 25OCTOBER2016  
**Date:** Monday, November 07, 2016 12:45:30 PM  
**Attachments:** IMAFFS CDR Meeting Minutes 25OCT2016.pdf

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ALCON-

Attached are the Meeting Minutes for IMAFFS CDR held 25 OCTOBER 2016. Please let me know if you have any questions.

Next IPT MEETING:

Hosted by: RDS, Woodmont 2845 Wall Triana Hwy/ Phone Bridge

Date: November 16, 2016 Wednesday

Time: 0900- 1000 CST

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Thank you,

Erin Owens

Project Assistant

Yulista Aviation

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---

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“22 CFR Part 125.4 (b) (9) applicable.”



## Meeting Minutes

Meeting: CDR for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II

Date of Meeting: 25 October 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during CDR October 25, 2016:

- The pallets for the H and J model will have connecting rings.
- Per RDS the main tanks do not have to be removed for annual testing.
- Per RDS there is no skin on the bottom side of the aft pallet. This will allow for repairs and maintenance.
- Per RDS the main accumulators will be the aluminum, since they are the lightest version.
- The bellows for the H and J model will be different. Per Bob Onsgard that will not be an issue.
- RDS will research ways to keep the fill port strobe light from reflecting into the aircraft, i.e. painting the back side of the strobe light
- Per RDS the door plug will be 10lbs heavier than the current MAFFS II door plug. Larger door handles will be added to the new door plug for easier handling.
- RDS will research implementing a storage area near the crew seats.

**Action Items Added:**

None.

**Action Items Closed:**

None.

**NEXT IPT MEETING:**

Hosted by: RDS, Research Dr. / Phone Bridge

Date: Nov 16, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#





## Attendees List

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**Subject:** MAFFS IPT 4 Meeting Minutes 9\_16\_15  
**Date:** Tuesday, September 22, 2015 1:50:09 PM  
**Attachments:** [image001.png](#)  
[MAFFS IPT 4 Meeting Minutes 16SEPT2015.doc](#)

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All,

I have attached the meeting minutes from MAFFS IPT# 4. Please let me know if you have any questions.

Thanks,

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[cid:image001.png@01D0F535.1950EC70]

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"22 CFR Part 125.4 (b) (9) applicable."

## **Meeting Minutes**

Meeting: **IPT # 4 for Modular Airborne Fire Fighting System (MAFFS) Phase II**

Date of Meeting: 16 September 2015

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during the MAFFS Phase II IPT #4.

- Discussed the Air Force requirement for the colors on the display screens. Bob Onsgard stated that the MAFFS will not be flying at night so night vision will not be needed. RDS needs to know what the color specifications are for the instruments.
- Chris Palmiter is going to develop a new simulation that would show the CG effects if the pallet and S-Duct were extended.
- The compressor pallet will still be redesigned even if the compressor is removable.

### **Action Items Added:**

### **Action Items Closed:**

#### **NEXT IPT MEETING:**

Hosted by: RDS, Research Dr. / Phone Bridge

Date: September 23, 2015 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: **(256) 885-9111** / CODE: 117#

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**Subject:** MAFFS IPT 6 Meeting Minutes\_30SEPT2015  
**Date:** Thursday, October 01, 2015 4:57:03 PM  
**Attachments:** [image001.png](#)  
[MAFFS IPT 6 Meeting Minutes 30SEPT2015.doc](#)

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All,

Please see the attached meeting minutes from IPT# 6 Sept 30, 2015. Let me know if you have any questions.

Next IPT:

Date: Wednesday October 7, 2015

Time: 0900 - 1000 CST

Thanks,

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[cid:image001.png@01D0FC61.A7644CE0]

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"22 CFR Part 125.4 (b) (9) applicable."

## Meeting Minutes

Meeting: **IPT # 6 for Modular Airborne Fire Fighting System (MAFFS) Phase II**

Date of Meeting: 30 September 2015

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during the MAFFS Phase II IPT #5.

- RDS will use the PIF templates that were approved during the SRR of Phase I.
- Per Bob Onsgard the loadmaster crew is having a difficult time fitting the OBVP pipping into the door plug. A ¼ inch moveable room between the plug and piping would be ideal. Bob is going to send RDS pictures of the wear on the inside of the door plug.
- SRR will take place December 16, 2015. Members of the SPO and (b)(6) will travel to Huntsville, AL to attend the meeting.
- Discussed the 20G crew seat. Per (b)(6) there are no known programs using a seat with the 20G crash rating (b)(6) is going to get with Josh Gallo to find out if the BAE seat has completed testing and is qualified.
- Discussed the requirements for the exterior warning strobe light. Bob Onsgard and (b)(6) were unaware of any requirements. If possible the light would need to be shielded from the loadmasters inside of the aircraft. (b)(6) is going to check and see if there are any requirements for the light.
- Discussed the amps to millivolts conversion. Ray Currier needs to know how many amps are being drawn during startup. (b)(6) and (b)(6) are going to look for any data regarding Ray's question.
- (b)(6) confirmed with (b)(6) that the compressors will stay onboard the aircraft.
- RDS would like to have a Logistics POC for Robins AFB to establish a delivery process. (b)(6) is going to check to see who the POC should be.
- Bob Onsgard stated that pallet rails and skids have warped and caused problems on previous units. Chris Palmiter stated that they are aware of the situation and it was discussed in Phase I.
- Per Bob Onsgard a hydraulic line has cracked on one of the current MAFFS II units. He will be sending RDS pictures of the damaged line.
- Bob Onsgard is going to send RDS the MAFFS II installation instructions.

### **Action Items Added:**

1. Strata-G to review the attachment of the bellows to the door plug - Bob Onsgard to send pictures of the worn door plug.
2. (b)(6) will check to see if there are requirements for flash-rate/color requirements for the exterior warning strobe light.
3. Timothy Nettles will look into establishing a Logistics POC at Robins AFB.
4. (b)(6) to talk with his POC to make sure the BAE is fully qualified



**Action Items Closed:**

- AI#2 Review drawings for formatting and standards for upload to JEDMICS.

**NEXT IPT MEETING:**

Hosted by: RDS, Research Dr. / Phone Bridge

Date: October 7, 2015 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9111 / CODE: 117#

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AVIATION, INC.  
INTERNATIONAL

## Meeting Minutes

Meeting: PDR for Improved Modular Airborne Fire Fighting System (IMAFFS) Phase II

Date of Meeting: 03 May 2016

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during PDR May 03, 2016.

- Discussed the inlet port redesign. The tubing will still be the same size as the MAFFS II design, the outer layer has been reduced in diameter in order to save weight.
- Discussed pressure testing for the Main Tank:
  - Yuba City will proof test by taking measurements in areas to make sure the tank has not yielded.
  - RDS will perform fatigue testing analysis on the main tank.
  - Per RDS will perform cycle testing analysis of the tank.
  - Per RDS the tank will not be operating at 195 psi but at a much lower psi.
- Correction was made on slide 111, "The critical pressure load case for the I-MAFFS foam tank is the burst pressure load case 375 psi."
- Discussed the new fill station for the left side of the aircraft. RDS will perform a drag analysis on the new left side station.
- Discussed the forward control panel – e-stop distribution. Per RDS if we drop DC it will not run the display only the e-dump. Per (b) (6) it does not make a lot of sense to drop the DC power.
- Per RDS the Skynode GPS/SAT unit is considered GFE and the USFS will determine where to mount the unit.
- Discussed the I-MAFFS forward and main controller. RDS will request a MIL-STD-461 report from NAI.
- Discussed the cockpit drop pendant. RDS would like to find a route for the cord instead of having it dropped on the floor.
- Per RDS the filling station will be mounted under the seat and one on the outside of the aircraft.

- Discussed the e-stop. Per RDS if the emergency stop button is pressed a system reboot would be required.
- Per RDS the new strobe light will be flashing when the system is armed and will shut off 90 seconds after the pintle is opened.
- Discussed the HSI-SAR on slide 203. RDS will add a bullet for the Cabin Control Box with a description similar to the other bullets.

Discussed the SDP, SRS, and STP on 5/5/16:

- The SPO would like more clarification regarding metrics captured related to software defects. Per RDS Corrective actions are addressed in Section 5.16 of the SDP, and CSCI Qualification Testing is address in Section 5.8. Clarification will be added regarding the operation of the CCB and how defects are handled. The goal is to provide zero defects in the delivered software, so any defects found during Software Verification will be investigated and assessed for their impact, but will ultimately be fixed, unless specified via direction from RDS or the PIF. Changes will be reflected in final delivery of SDP.
- Per RDS the Requirements Traceability Matrix will be found in the Software Test Description (PIF-DOC-02163). This will contain the derived software requirements with traceability to SRD requirements, software design, software implementation, and software test.
- Per RDS TBD's in the SRS will be resolved before exiting the Requirements Analysis Phase and will be reflected in the final delivery of the SRS.
- The SPO would like clarification in the STP how the STP ties together with test procedures and requirements. RDS will provide clarification for this in the final delivery of the STP.
- Discussed who would have sign-off authority for software. RDS will sign off on the software prior to delivering it to the PIF. Final functional sign off of I-MAFFS will occur with the FQT at a Systems Level. CDI will provide clarification for this in the STP. Changes will be reflected in final delivery of STP.

#### **Action Items Added:**

72. SPO to send RDS the criteria for the fatigue testing analysis for the main tank and the foam tank.
73. StrataG to perform fatigue testing analysis on main tank
74. StrataG to perform fatigue testing analysis on foam tank
75. RDS to find out if the Skynode GPS/SAT is MIL-STD-461 certified

#### **Action Items Closed:**

66. What are the operating conditions for each aircraft modified that RDS is assessing I-MAFFS against.

NEXT IPT MEETING:

Hosted by: RDS, Research Dr. / Phone Bridge

Date: May 18, 2016 Wednesday

Time: 0900 – 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#

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## **Meeting Minutes**

Meeting: **IMAFFS System Requirements Review (SRR).**

Date of Meeting: 16 December 2015

Location: Blackhawk CR/Via Phone Bridge

Organizer: RDS Kristin Lauer

Attendees: See attached list.

Minutes: The following is a list of the discussions that were held during the IMAFFS Phase II SRR.

### **Engineering**

- Lt Col (b) (6) AMC A3/A3F from AMC had a question asking if the foam tanks will be removable. Per RDS the foam tanks will be removable.
- Discussed the e-dump and if it could accidentally be set off while the aircraft is on the ground. It was agreed by the IPT to leave the e-dump switch in its current configuration. The switch is guarded, there are no known inadvertent on-ground discharges. We want to retain the ability to activate the system on the ground. Per RDS the e-dump is a gravity dump so it is unpressurized in case of set off.
- (b) (6) USFS asked about the rear pallet system being unbalanced, with the right rear corner lifting off the rollers, and has RDS done anything to try and mitigate this. RDS has looked into options to balance the system. A shim could be added between the C-130 cargo rail system and the top surface of the aft pallet rail interface.
- The SPO asked if there was any empty space in the main tank. Per RDS the physical volume of the main tank is 3900 gallons and the operating limitation is 3300 gallons which allows for ullage.

### **Software Design**

- Lt Col (b) (6) asked about the software interfacing with the aircraft. RDS stated that the system will be a federated system and will not be tied into the aircraft systems.

### **Requirements Verification**

- (b) (6) questioned what the drop pendants will be called. Per RDS they will be called "drop control pendants" (SRD 3.1.2.2)
- Discussed the internal battery. IMAFFS backup battery shall maintain and e-dump functionality for 5 days. How will this be captured in operator's manual/checklist? What method will alert the aircrew as to the condition of the battery? Ryan Becker stated that on MAFFS II the batteries are changed every season.
- The SPO requested for RDS to add more description to SRD 3.1.4.3.
- Lt Col (b) (6) questioned the verification method SRD 3.2.1.2 of the Maximum Expected Operating Pressure (MEOP). RDS will perform an analysis and verify with a demo.

- (b) (6) SPO asked how to determine if the IMAFFS system generator were to loose power. Per RDS a signal in the breakout panel will determine if a generator has lost power.
- Discussed the ICS connector for the left side of the aircraft. The SPO did not see a reason for adding a left side ICS since there is an ICS connector near the paratroop door. Crew members on the ground will normally have 50ft ICS cables. RDS will get with Bob Onsgard to determine the reasoning for adding a left side ICS connector.
- Discussed SRD 3.11.1. (b) (6) SPO asked if the main tank will stay pressurized for 2 hours. Per RDS if the pressure drops in the tank while in an armed state, the compressors will turn on to pressurize the tank.

### **Logistics**

- Discussed the C-130J TO 1C-130J-2-90 and TO-1C-130J-2-90JG-10-1S-XS. Per (b) (6) the documents for the J model do not exist. They are included in the H model TO's.
- Discussed the IMAFFS total weight with crew for the H and J model. Per the SPO the weight for the H model will be 40,000 lbs. and the maximum allowable weight for the J model is undetermined. (b) (6) (NGB) and the SPO will work with the SPO Chief Engineer (b) (6) (b) (6) to get the final correct weights in writing for both models.

### **Program Management**

- RDS will update the Risk Management Methodology chart to the latest version.
- RDS will add an Engineering Guidance Conference to the program milestones.
- Discussed table top drawing reviews. Per the SPO it would be better for them to travel to Huntsville, AL for the reviews.
- For SRR exit criteria the delivery date for the System Traceability Matrix has changed to 5 Feb 16 and the USG review will occur during the 10-11 Feb 16 engineering conference.

### **Action Items Added:**

29. SPO to provide info for rail system loads C-130 H & J
30. RDS to organize tabletop reviews for drawings.
31. RDS to review wording on SRD 3.2.2.7 & 3.2.3.7
32. RDS to send SPO the NEMA III classification or add Mil Std for weather proofing.
33. SPO to find out if the 30 ms is an aircraft requirement. If not what is the correct time (coupler drop out)
34. Bob Onsgard to provide justification for left side fill port ICS
35. SPO to supply ICS connector P/Ns if we add a left side ICS port
36. RDS needs the egress requirements for the aircraft and main tank
37. SPO to provide parameters for "safety of flight"
38. (b) (6) to provide RDS correct value for non-operational low storage temperature
39. SPO to provide reduced weight limits for the H and J model if applicable
40. SPO to provide chart E (CG envelope) for H and J-30 model
41. Better define "operational reaction loads"

- 42. Rework to include a "shall" statement for SRD 3.7.1.6.1
- 43. Reword TO requirement SRD 3.15.1.1
- 45. Update telemetry TBDs in the SRD 3.3.1.1.13
- 46. Update forklift spacing TBDs in the SRD 3.3.1.3.4

**Action Items Closed:**

- 28. Coordinate site visit to McClellan AFB for JAN 2016. Changed to Channel Island.
- 44. RDS to check if the AFI has the aircraft limit ton pressurization while IMAFFS is installed. Sent out to the stakeholders.

**NEXT IPT MEETING:**

Hosted by: RDS, Research Dr. / Phone Bridge

Date: January 6, 2016 Wednesday

Time: 0900 – 1000 CST

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**Date:** Wednesday, September 21, 2016 5:14:23 PM

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(b) (6), Lt Col, USAFR

302 AW MAFFS Program Manager

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Cell (b) (6)

From: Erin Owens [<mailto:Erin.Owens@yms-hsv.com>]

Sent: Wednesday, September 21, 2016 1:49 PM

To: (b) (6) Maj USAF ANG 146 OPERATIONS SUPPORT SQ/DOF  
(b) (6) @us.af.mil; (b) (6) ang.af.mil; Bob Osengard (usfs789@gmail.com) <usfs789@gmail.com>; bob.allman@stratag-inc.com; (b) (6) CIV (US) @mail mil; (b) (6) @mail mil; Chris Palmiter (chris.palmiter@stratag-inc.com) <chris.palmiter@stratag-inc.com>; (b) (6) NH-03 USAF AFMC AFLCMC/WLNEB (b) (6) @us.af.mil; Christopher Reeves <chris.reeves@stratag-inc.com>; (b) (6) GS-12 USAF AFMC AFLCMC/WLNCC (b) (6) @us.af.mil; Curt Lawson <curt.Lawson@craftdesigns.net>; Cynthia Hamrick <Cynthia.Hamrick@yms-hsv.com>; (b) (6) Lt Col USAF ANG 153 AIRCRAFT MAINT SQ/CC <(b) (6) @us.af.mil>; Derek Simmer <Derek.simmer@stratag-inc.com>; Erin Owens <Erin.Owens@yms-hsv.com>; (b) (6) GS-13 USAF ANG ANG READINESS FO/A4RXU (b) (6) @us.af.mil; (b) (6) CTR USAF AFMC AFLCMC/WLNCC <(b) (6) @us.af.mil>; (b) (6) Lt Col USAF ANG 156 AIRLIFT SQ/CC <(b) (6) @us.af.mil>; (b) (6) CMSgt USAF ANG 145 OPERATIONS SUPPORT SQ/DOLM (b) (6) @us.af.mil; (b) (6) Lt Col USAF ANG U S AIR FORCE HQ/A5PS (b) (6) @us.af.mil; (b) (6) NH-03 USAF AFMC AFLCMC/WLN

(b) (6) @us.af mil>; (b) (6) Capt USAF ANG 152 OPERATIONS SUPPORT  
SQ/152OSS/OSK <(b) (6) @us.af mil>; Jeff Bullington (jeffery.bullington@stratag-inc.com)  
<jeffery.bullington@stratag-inc.com>; Jeremiah Schock <Jeremiah.Schock@yms-hsv.com>; (b) (6)  
(b) (6) GS-12 USAF ANG ANG READINESS FO/A3M (b) (6) @us.af mil>; Jim Maples <Jim.Maples@yms-  
hsv.com>; Joe Thomas <joe.thomas@stratag-inc.com>; (b) (6) @fs fed.us; (b) (6) NH-03  
USAF AFMC AFLCMC/WLNEA (b) (6) @us.af mil>; (b) (6) @mail mil)  
(b) (6) @mail mil>; Kristin Lauer <Kristin.Lauer@yms-hsv.com>; Larry Roseke  
<Larry.Roseke@yms-hsv.com>; (b) (6) CIV (US) (b) (6) @mail mil)  
(b) (6) @mail mil>; (b) (6) CTR USAF AFMC AFLCMC/WLNCC  
(b) (6) r@us.af.mil>; (b) (6) Lt Col USAF AFRC 302 AW/CS  
<(b) (6) @us.af mil>; Mandy Johnson <Mandy.Johnson@yms-hsv.com>; Mark Reed <Mark.Reed@yms-  
hsv.com>; (b) (6) NH-03 USAF AFMC AFLCMC/WLNEA (b) (6) @us.af mil>;  
(b) (6) MSgt USAF ANG 153 OPERATIONS SUPPORT SQ/DOLA  
<(b) (6) @us.af mil>; (b) (6) NH-03 USAF AFMC AFLCMC/WLNEA  
(b) (6) @us.af mil>; (b) (6) SMSgt USAF ANG 146 OPERATIONS GP/OGV  
(b) (6) @us.af mil>; (b) (6) GS-13 USAF AFRC HQ AFRC/A5R  
(b) (6) us.af mil>; Richard Montecalvo <Richard.Montecalvo@yms-hsv.com>; (b) (6)  
(b) (6) USAF AFMC AFLCMC/WLNCC (b) (6) @us.af.mil>; Ron Craft  
(rcraft@craftdesigns.net) <rcraft@craftdesigns.net>; Russ Kerl (russ.kerl@stratag-inc.com) <russ.kerl@stratag-  
inc.com>; (b) (6) fs fed.us>; Sara Roe <Sara.Roe@yms-hsv.com>; (b) (6)  
<(b) (6) @us.army mil>; Wayne Craft (r.wayne.craft@craftdesigns net)  
<r.wayne.craft@craftdesigns net>  
Subject: IMAFFS IPT 27 Meeting Minutes 21SEPTEMBER2016

ALCON,

The Meeting Minutes from IMAFFS IPT 27 September 21, 2016 are attached. Please let me know if you have any questions.

Next IPT MEETING:

Hosted by: RDS, Woodmont 2845 Wall Triana Hwy/ Phone Bridge

Date: October 5, 2016 Wednesday

Time: 0900- 1000 CST

PHONE BRIDGE: (256) 885-9106 / CODE: 592#

Erin Owens

Project Assistant

Yulista Aviation

256-319-4312

erin.owens@yms-hsv.com

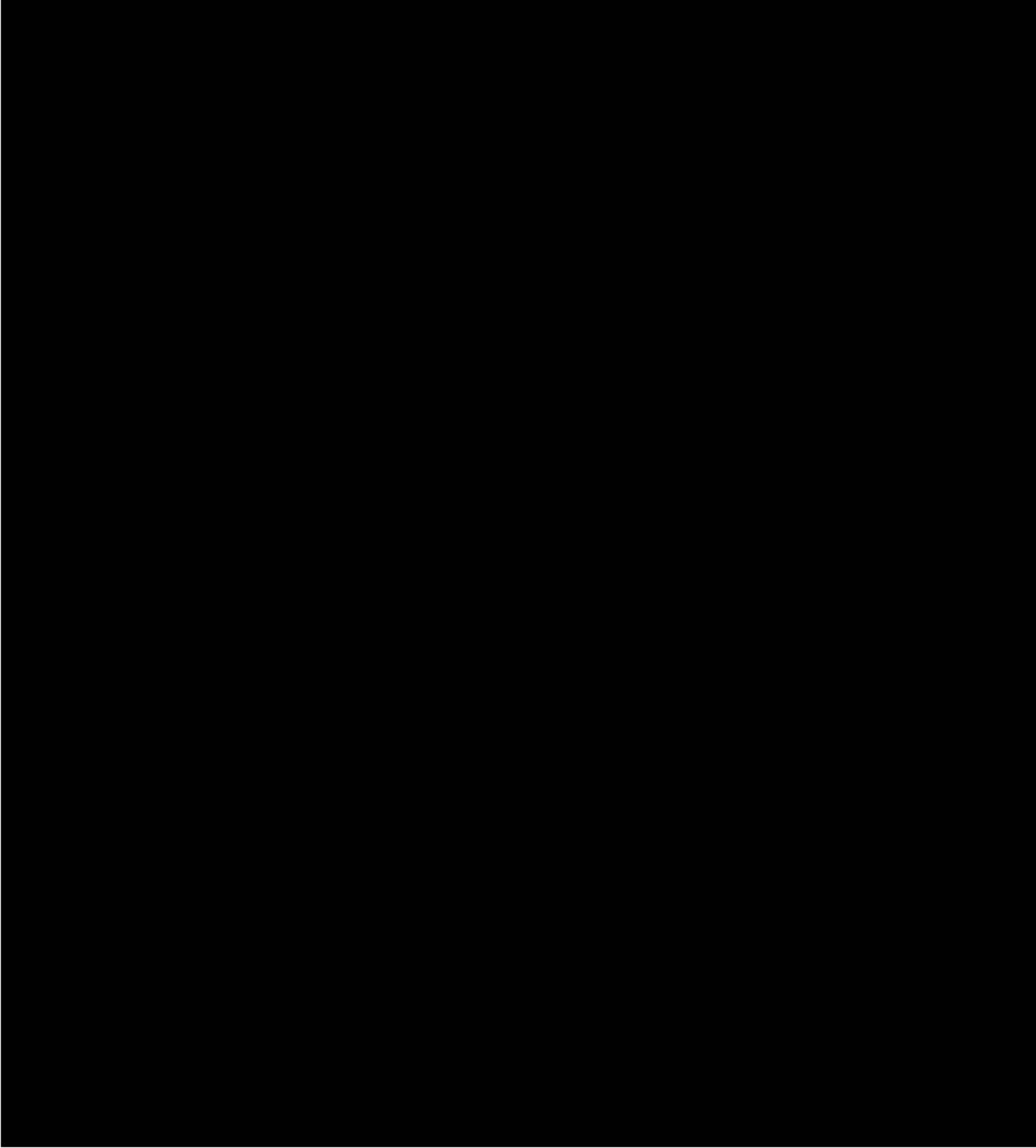
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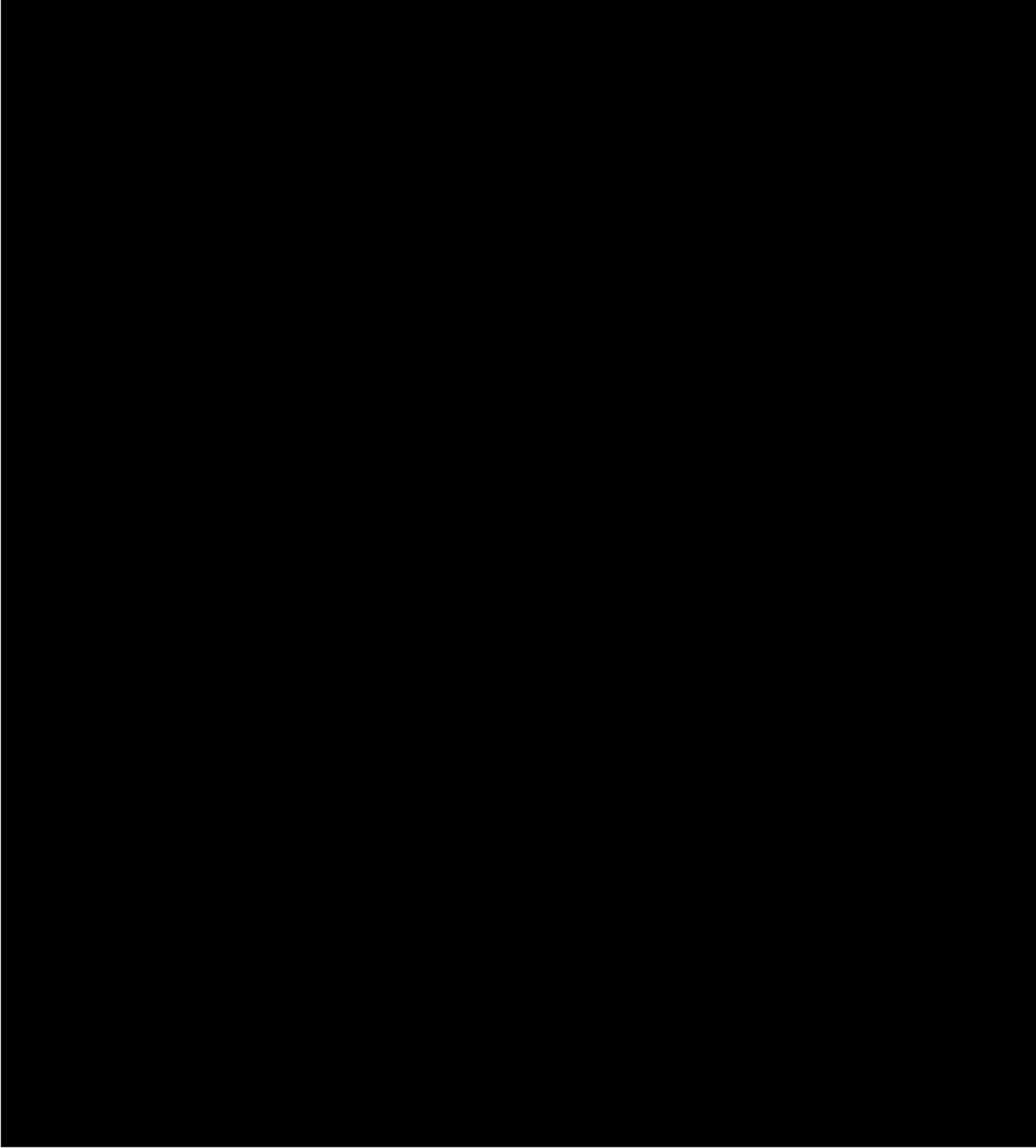
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“22 CFR Part 125.4 (b) (9) applicable.”

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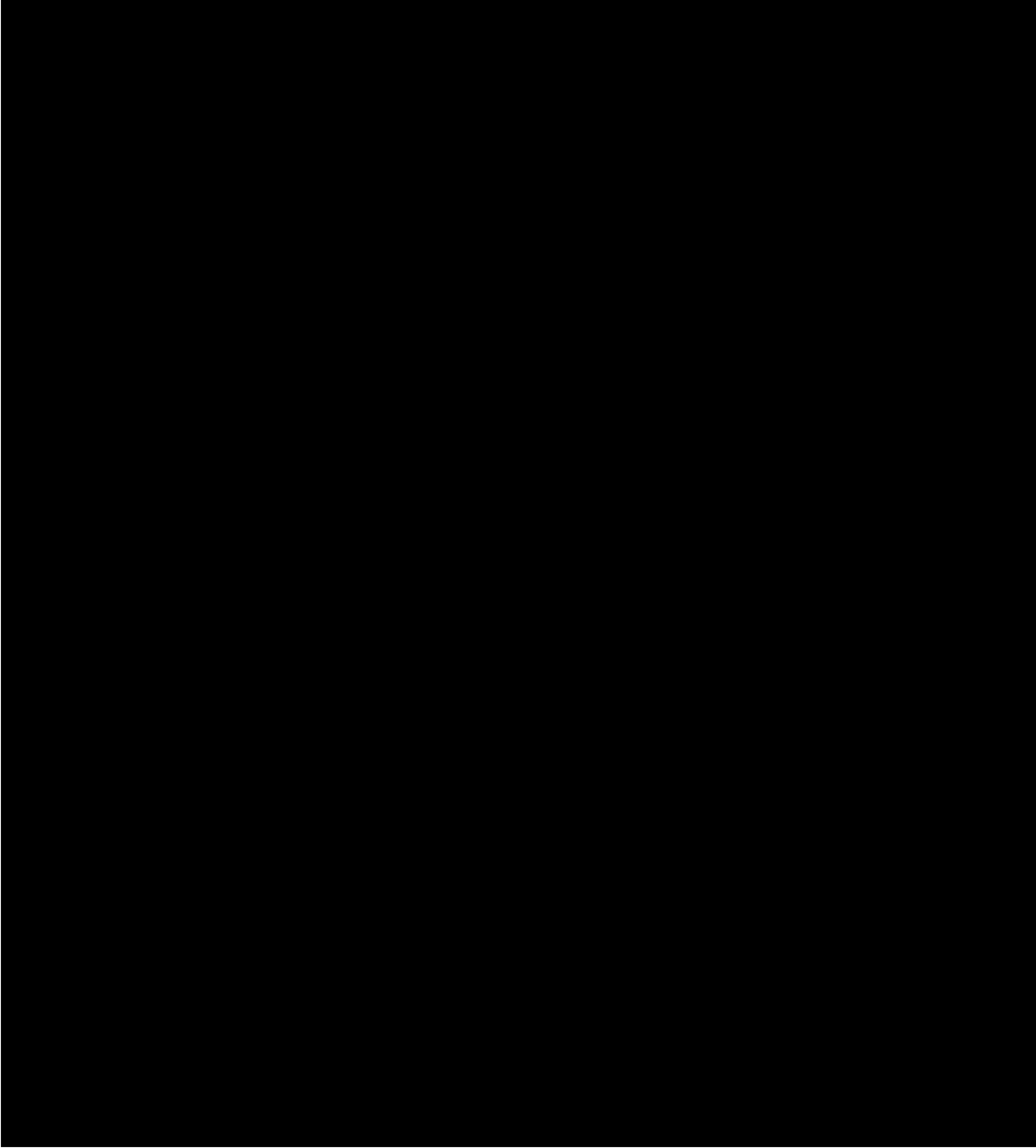


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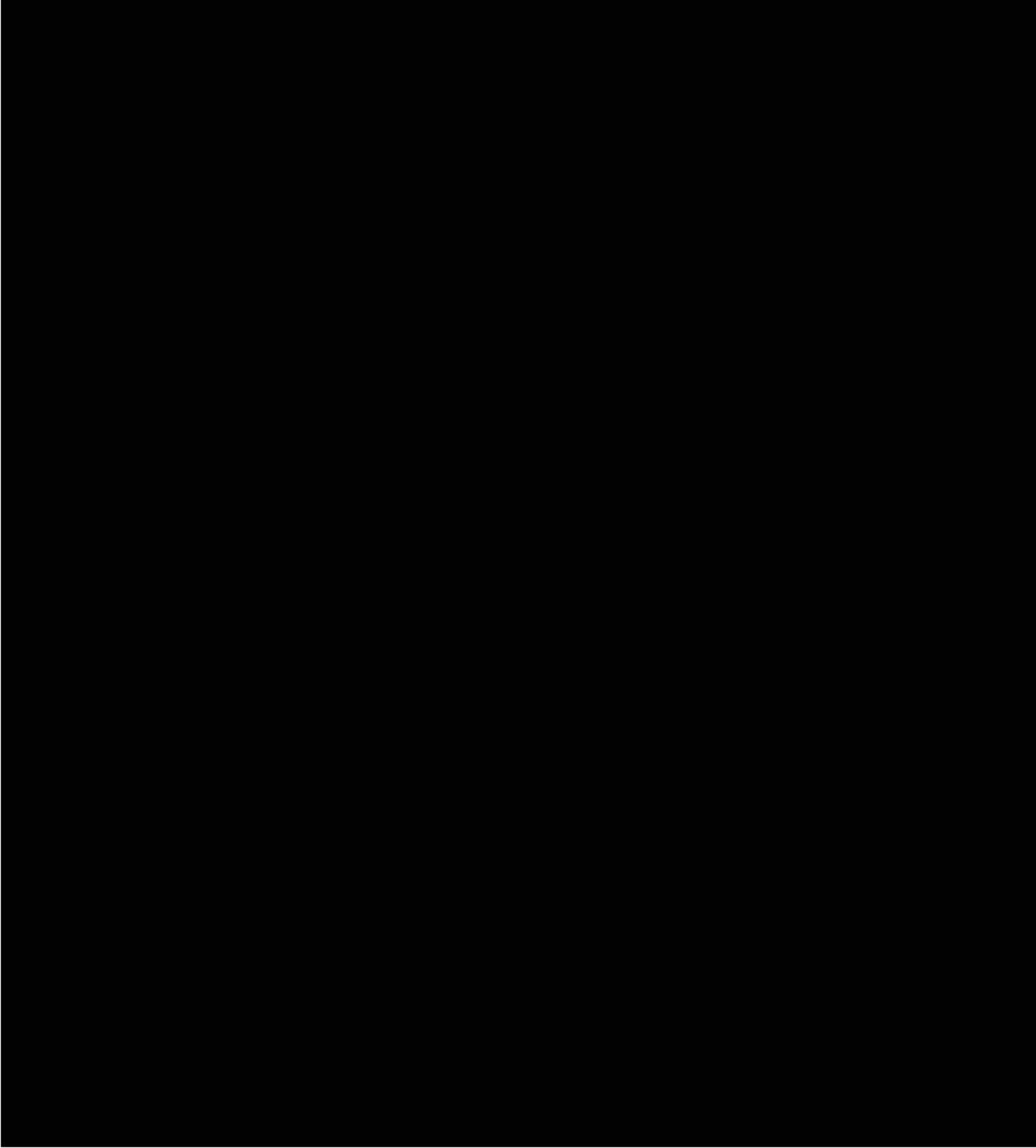




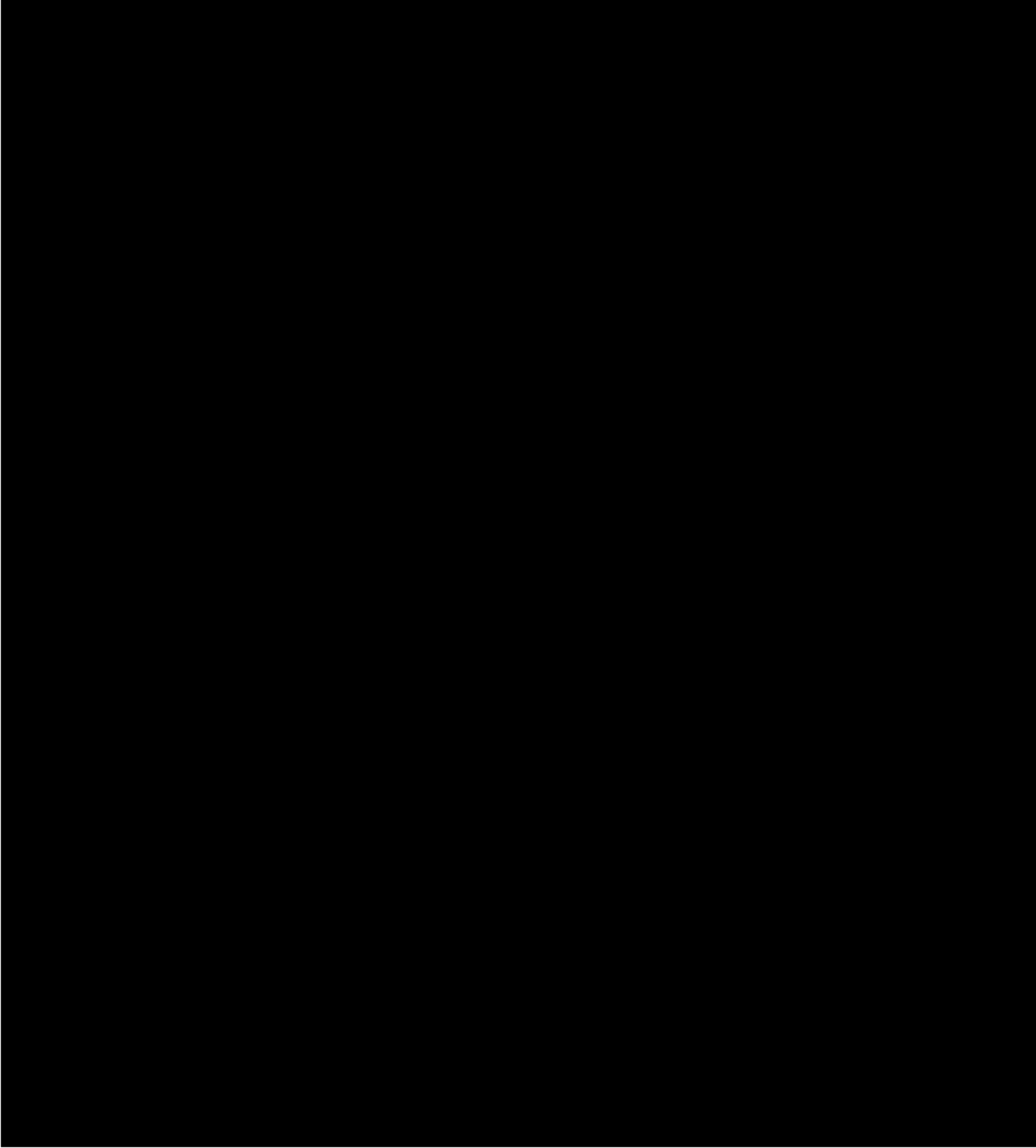
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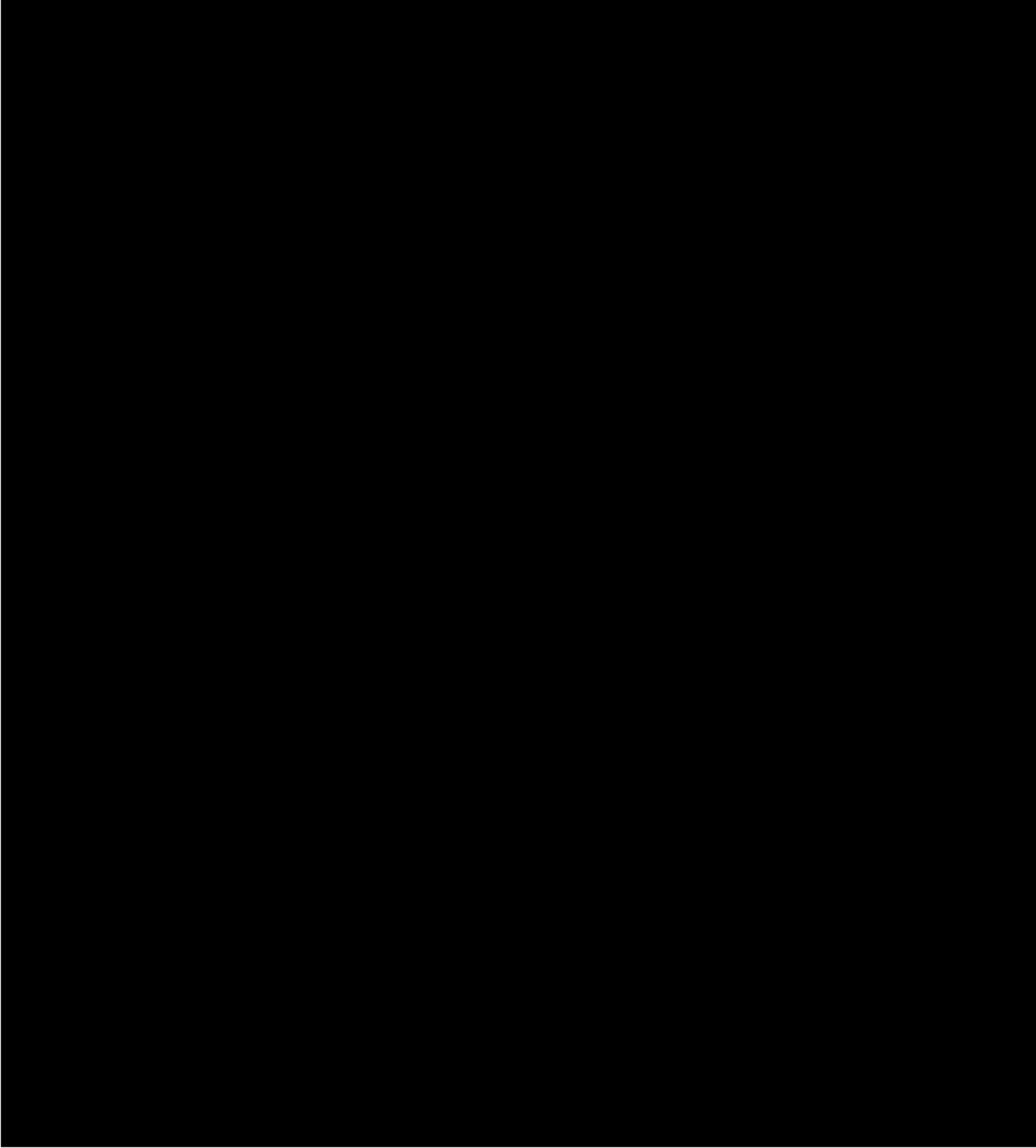
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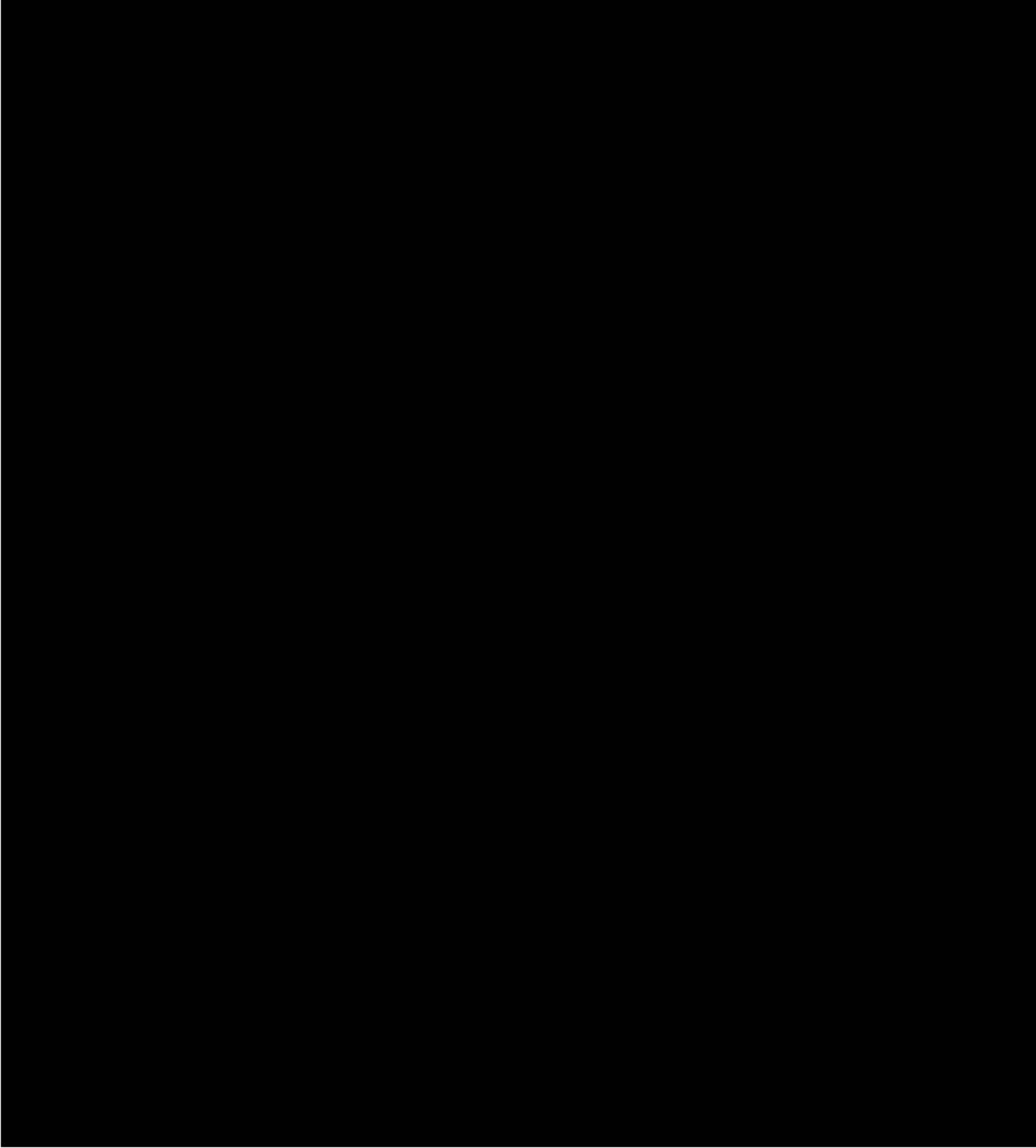
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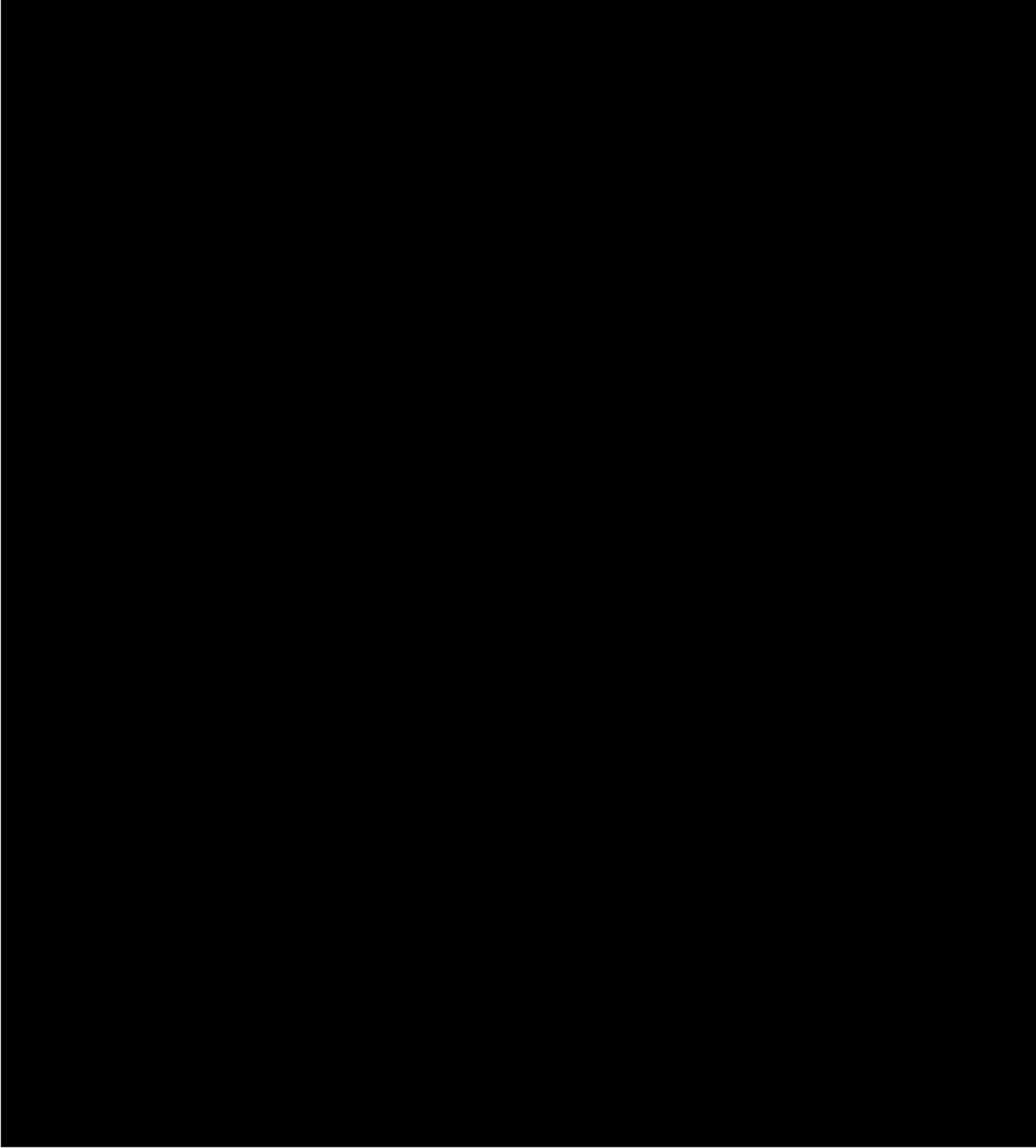
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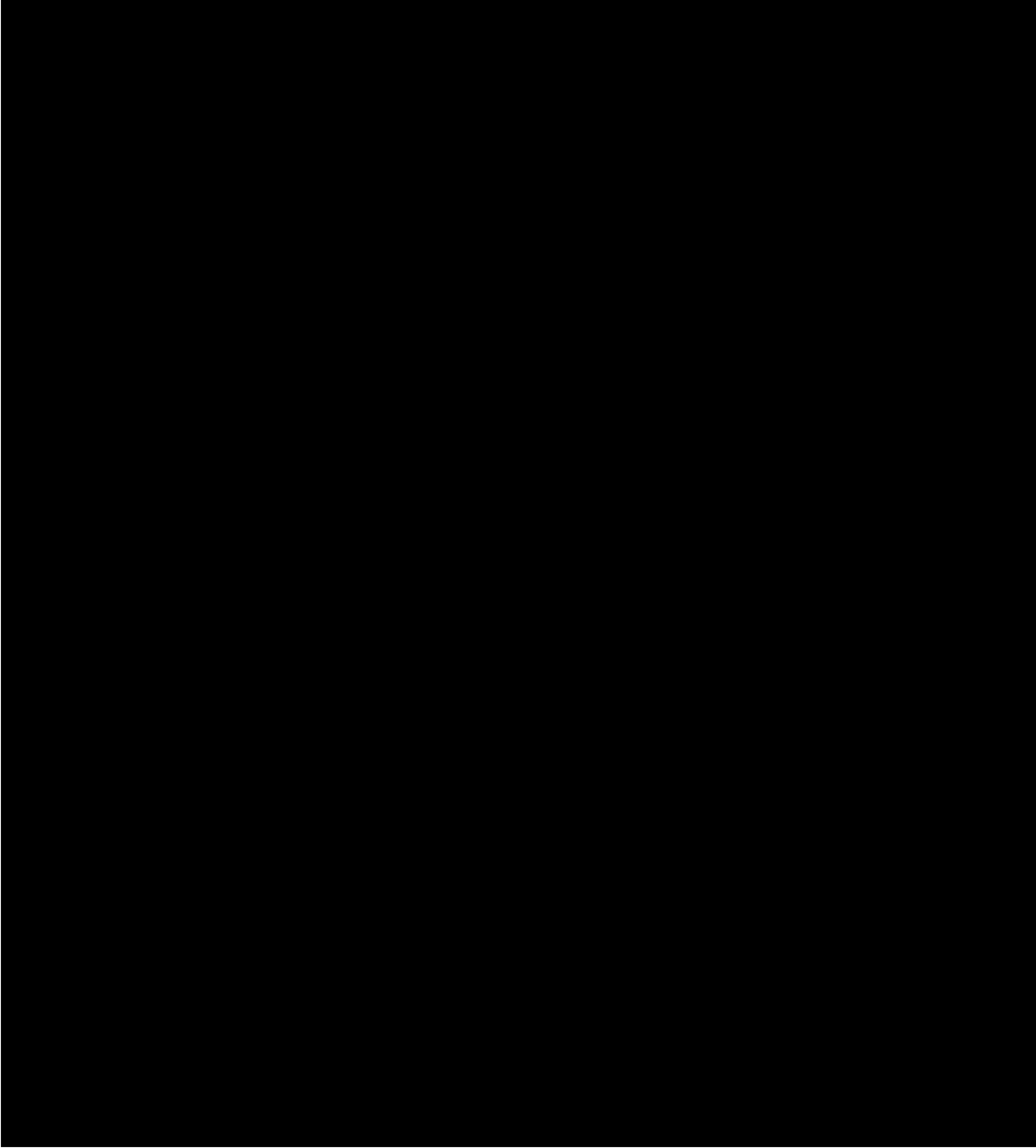


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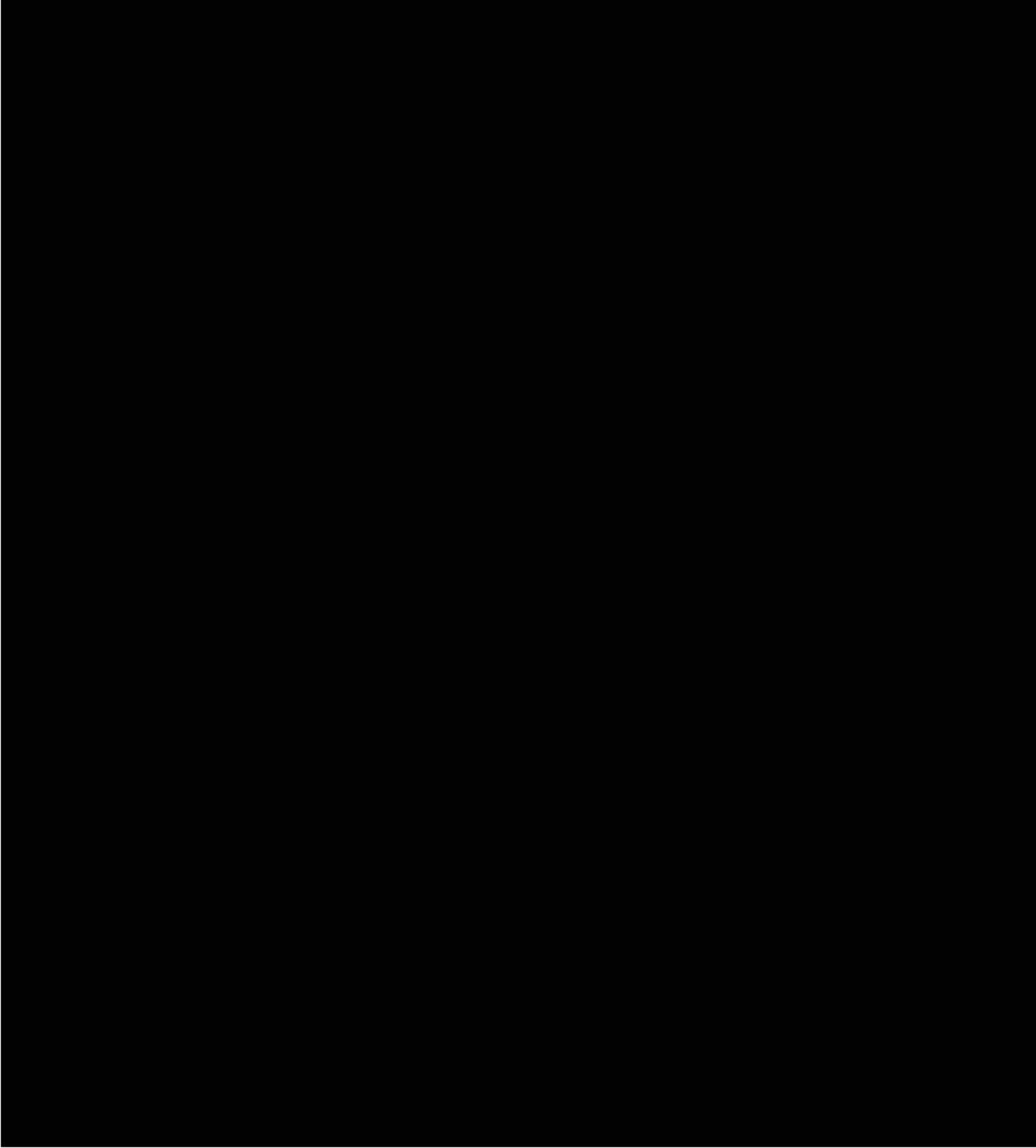




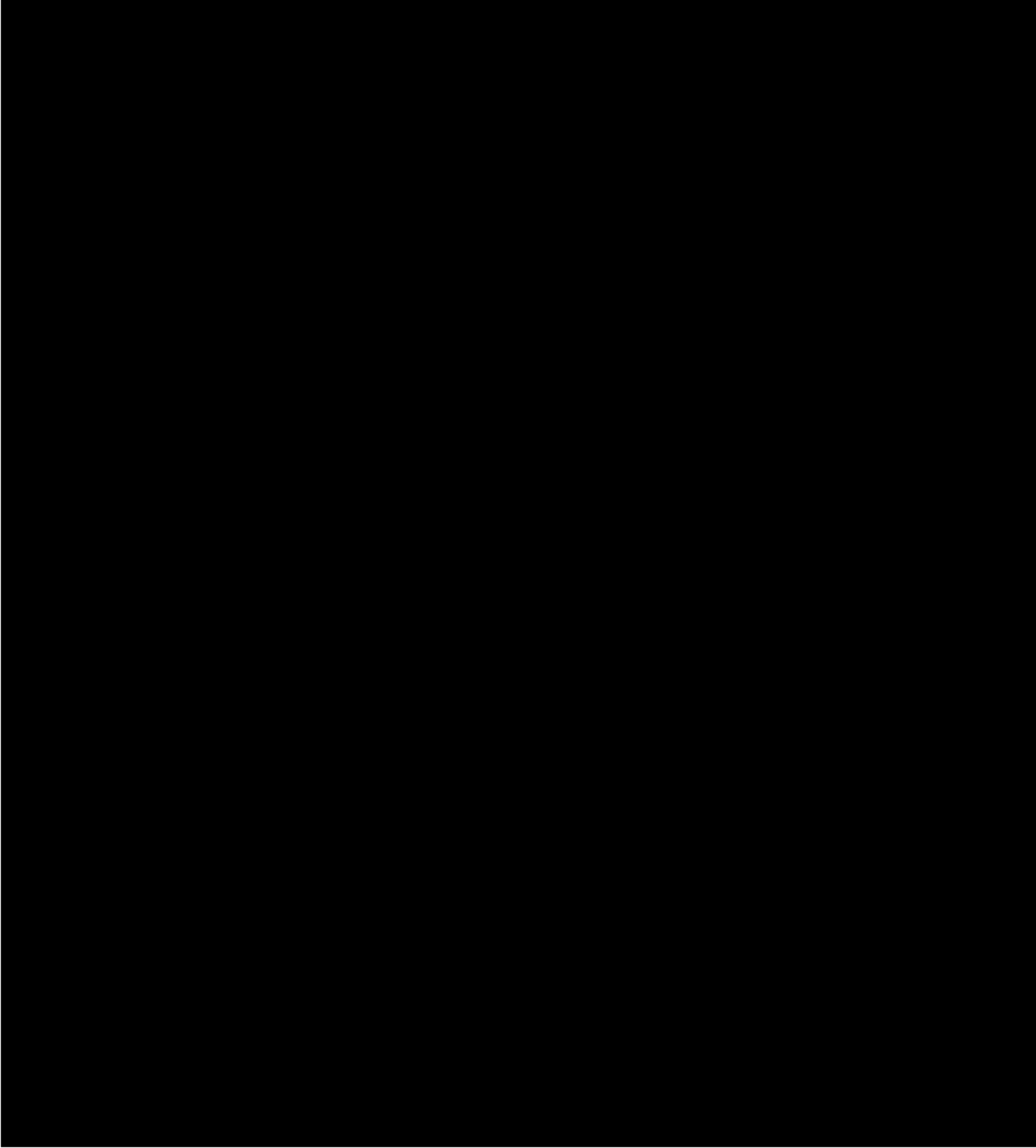
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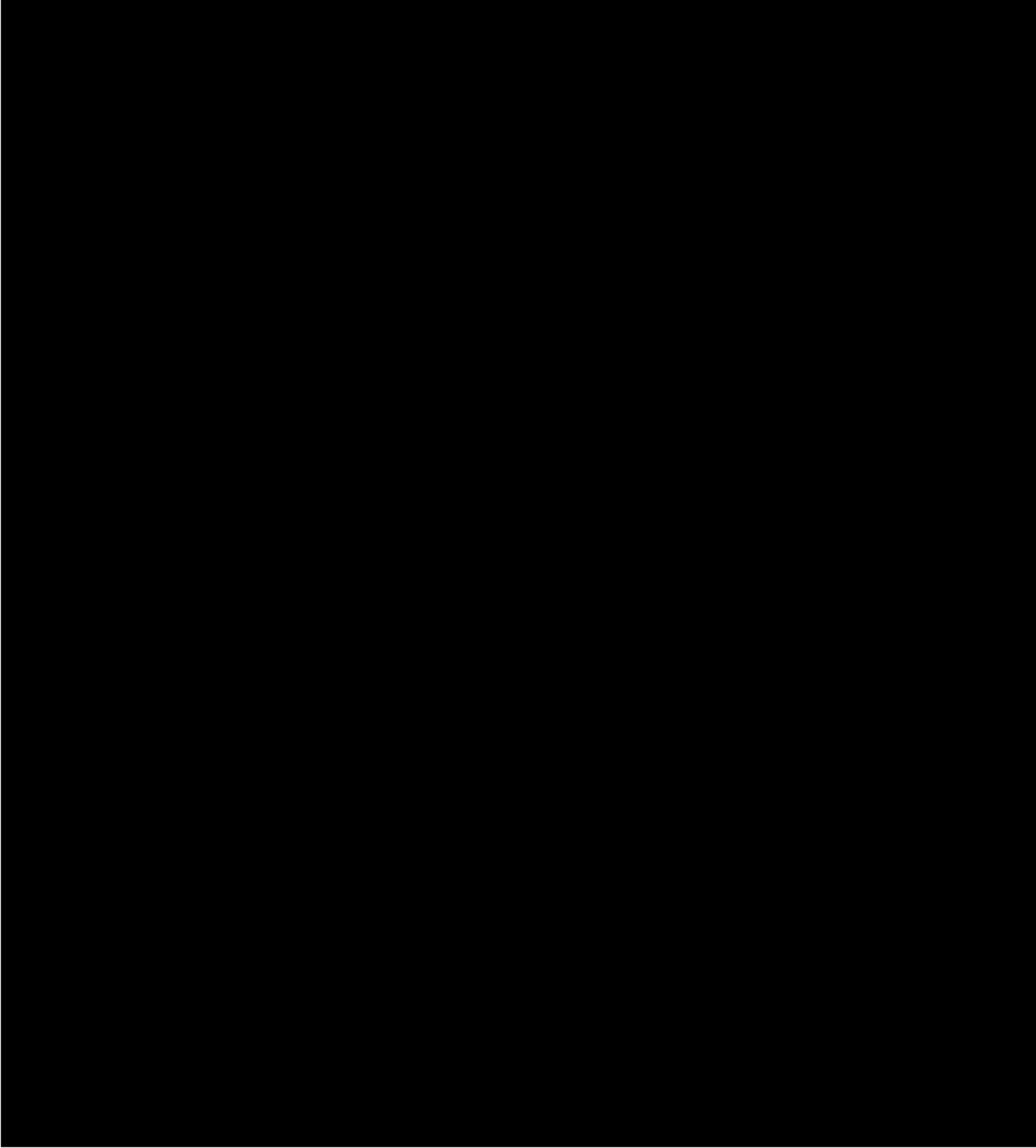
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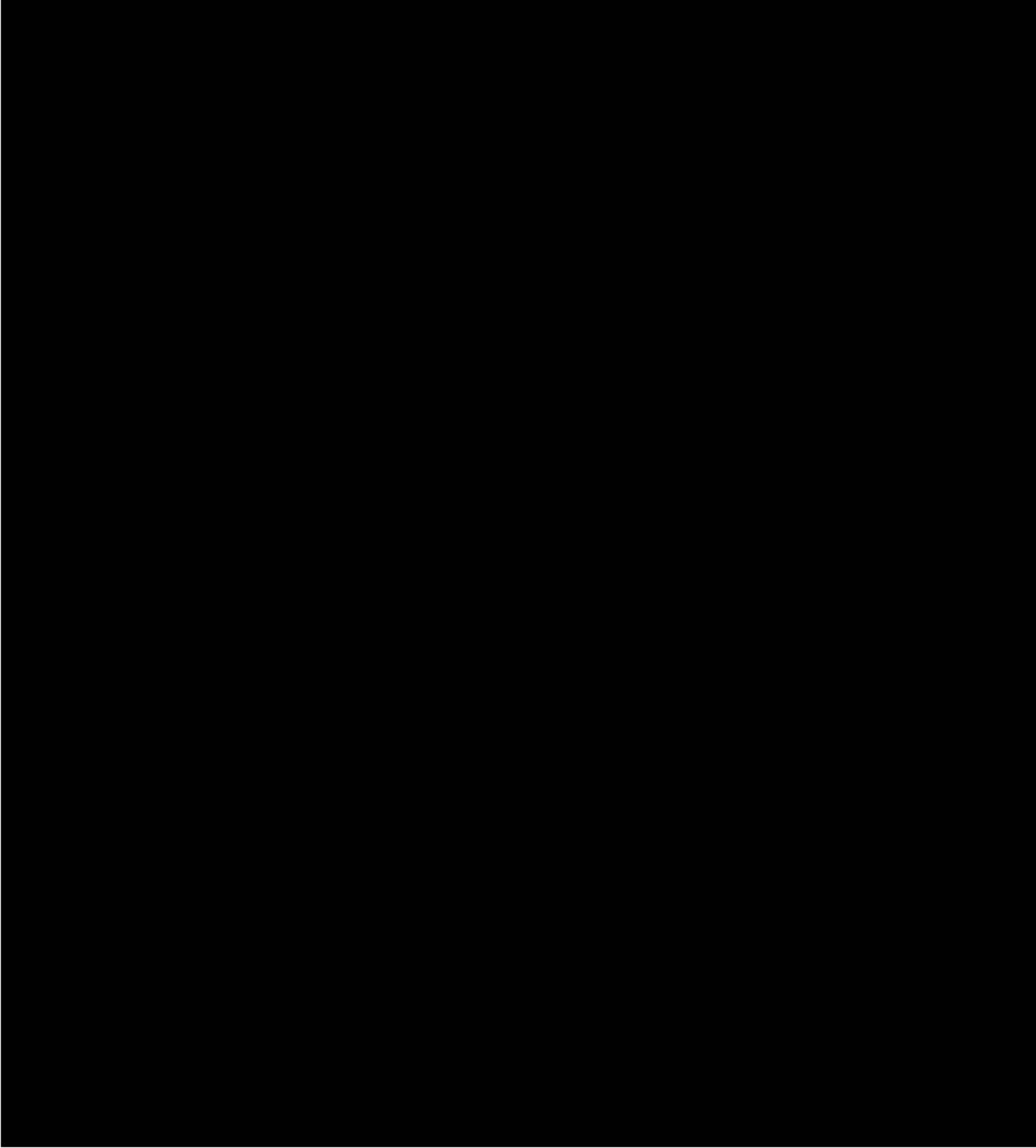
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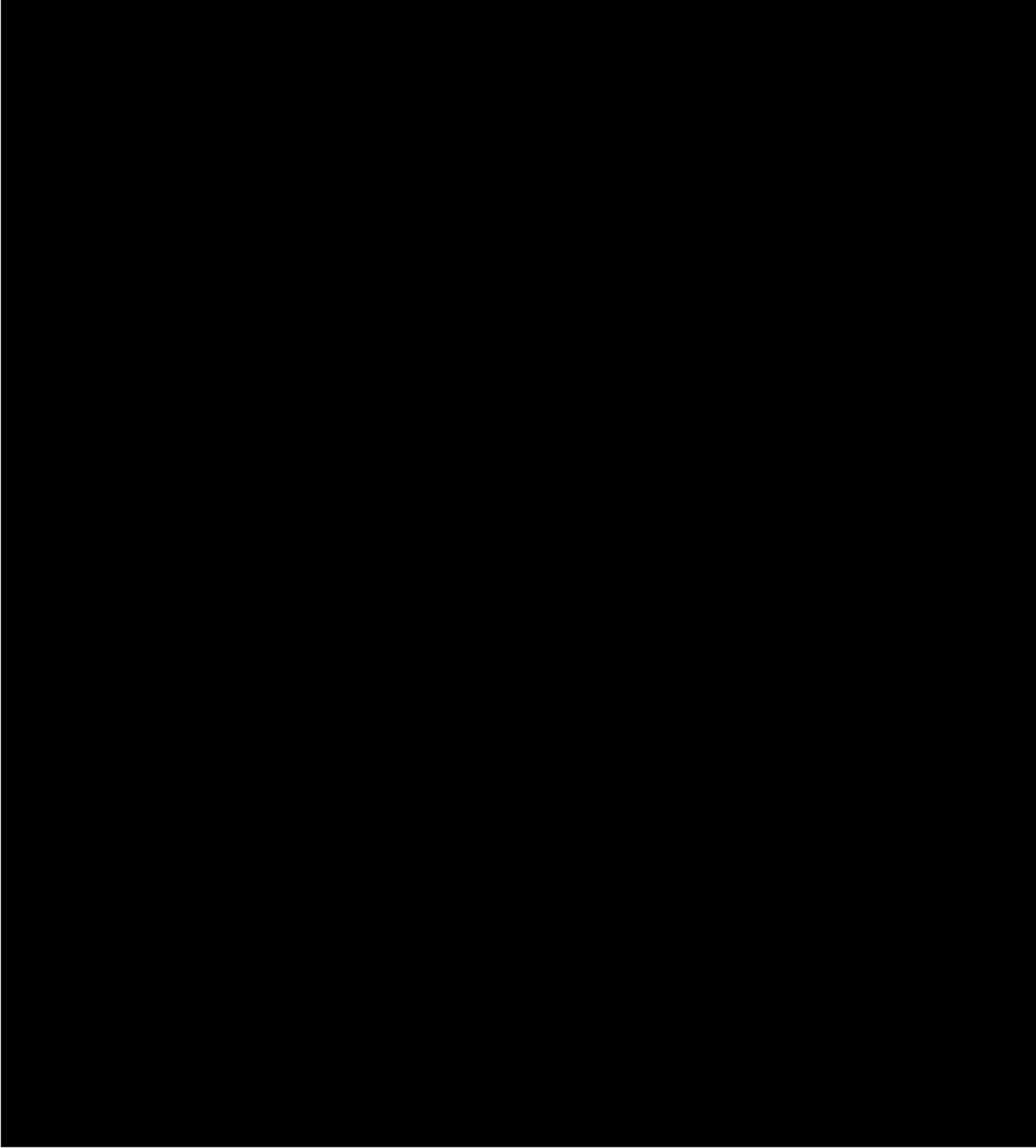
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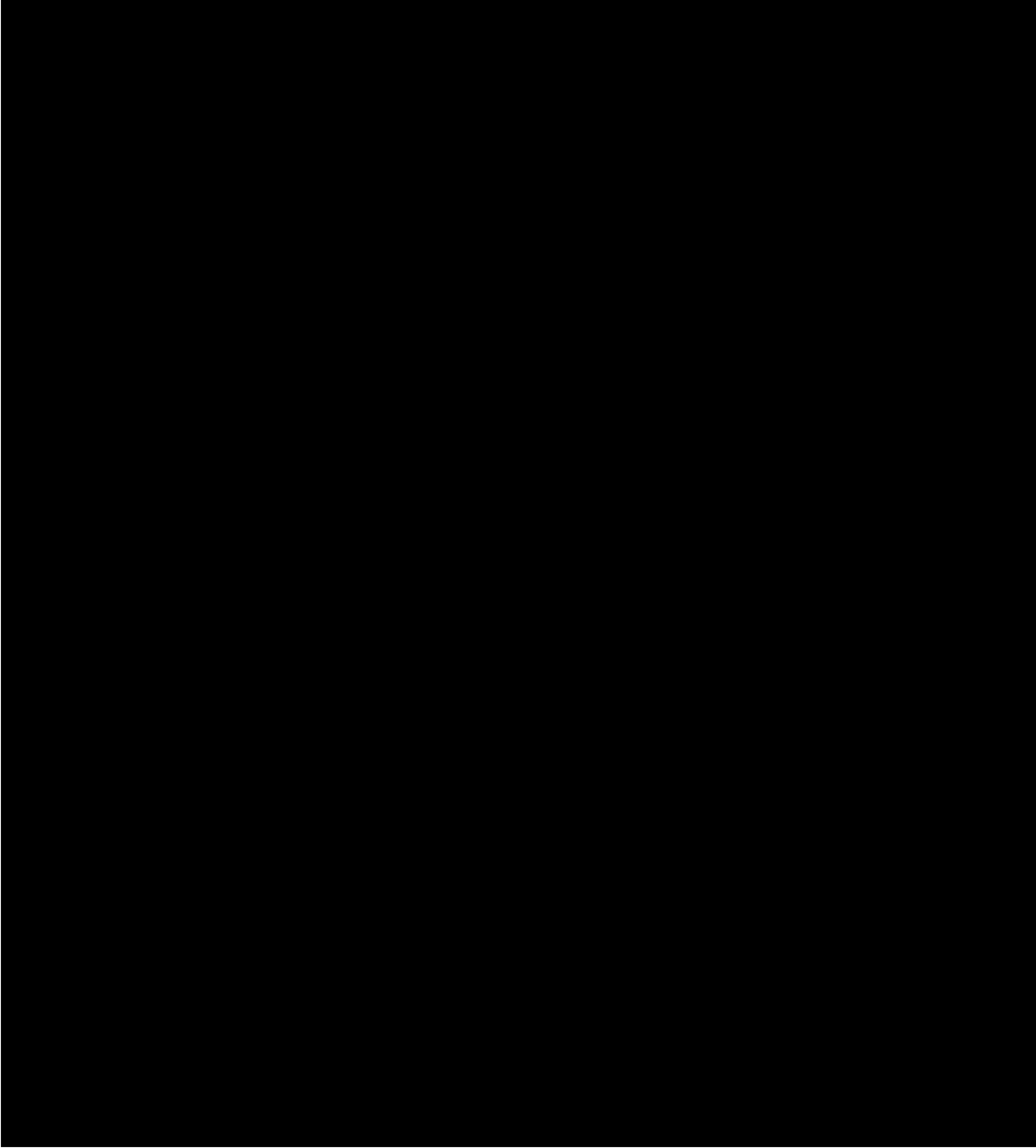


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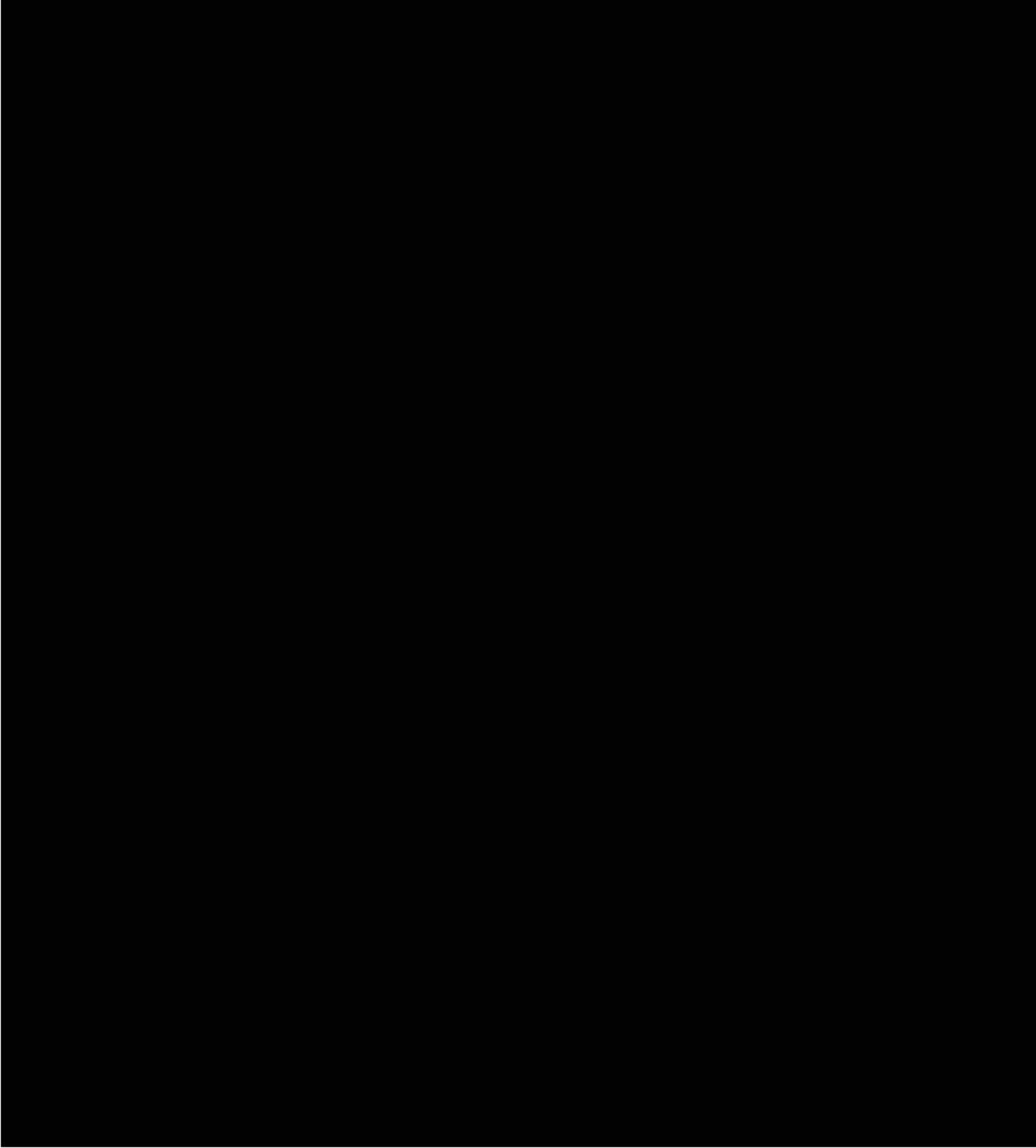




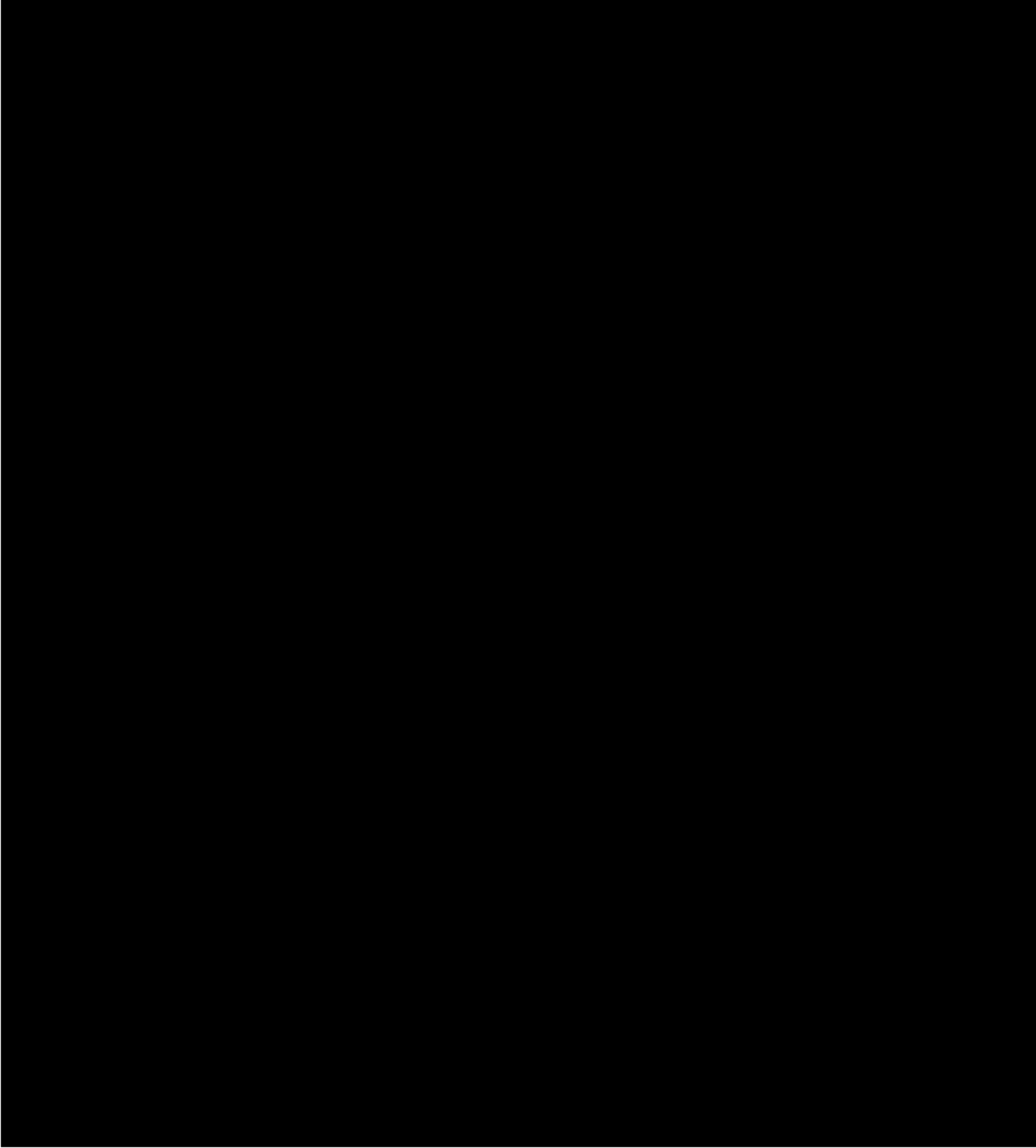
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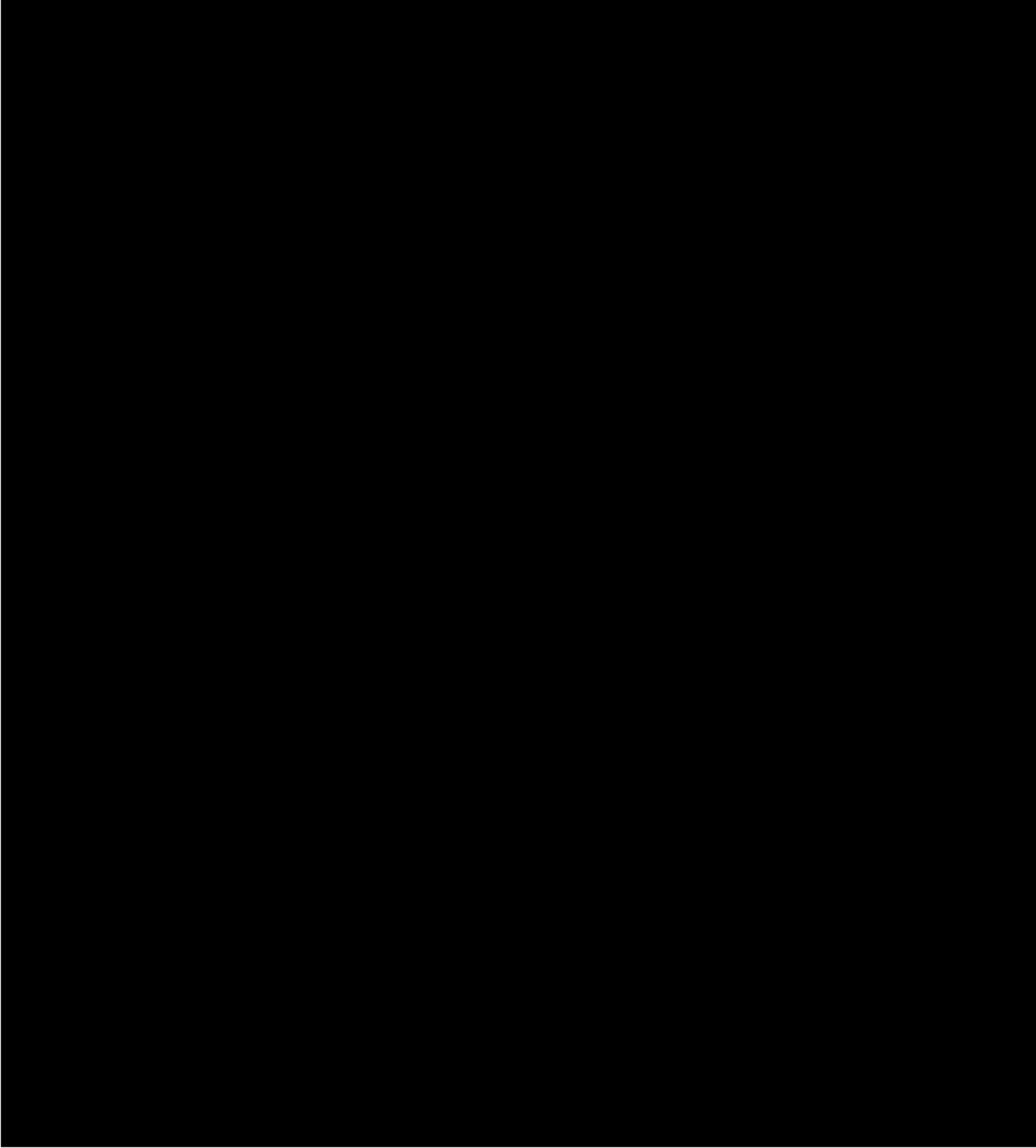
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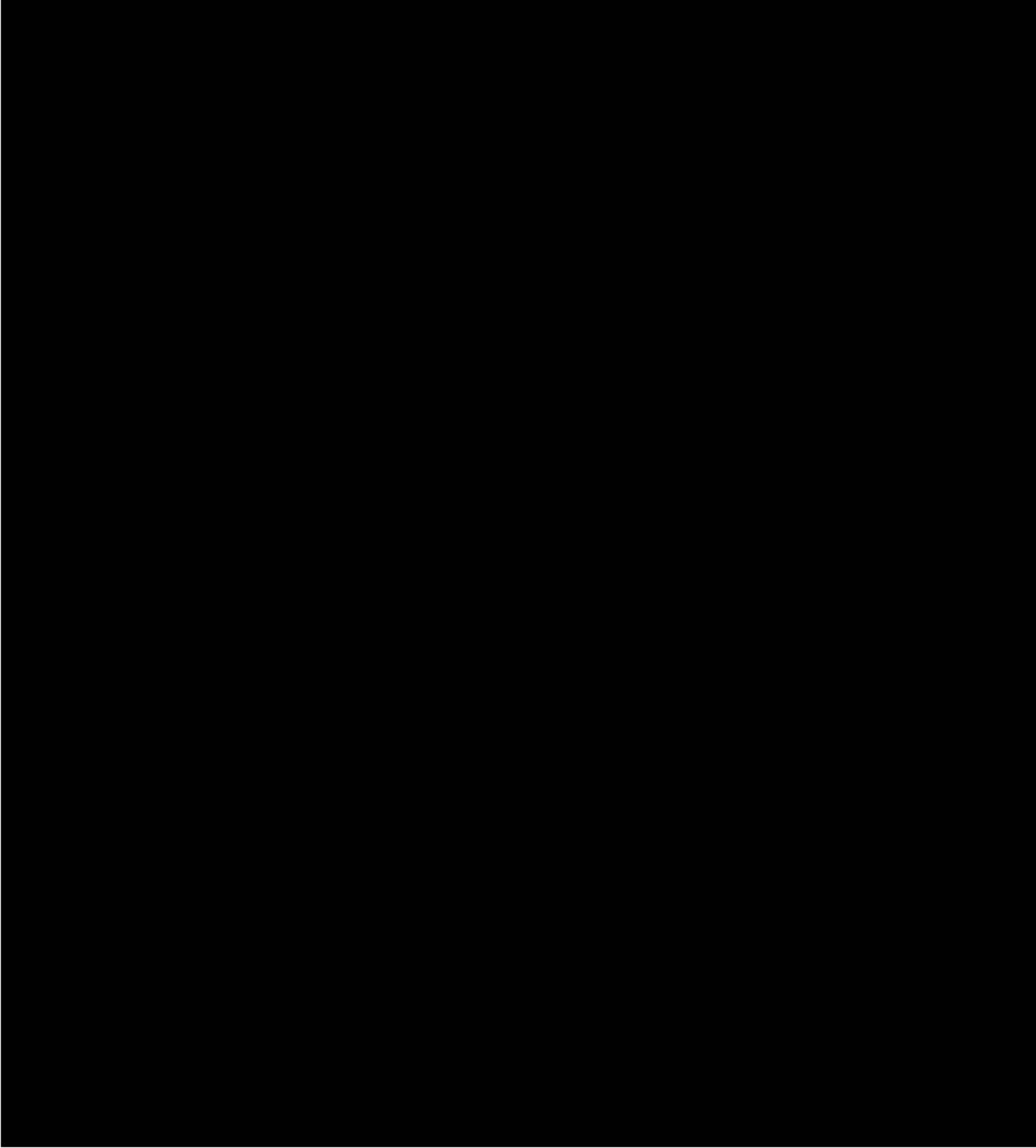
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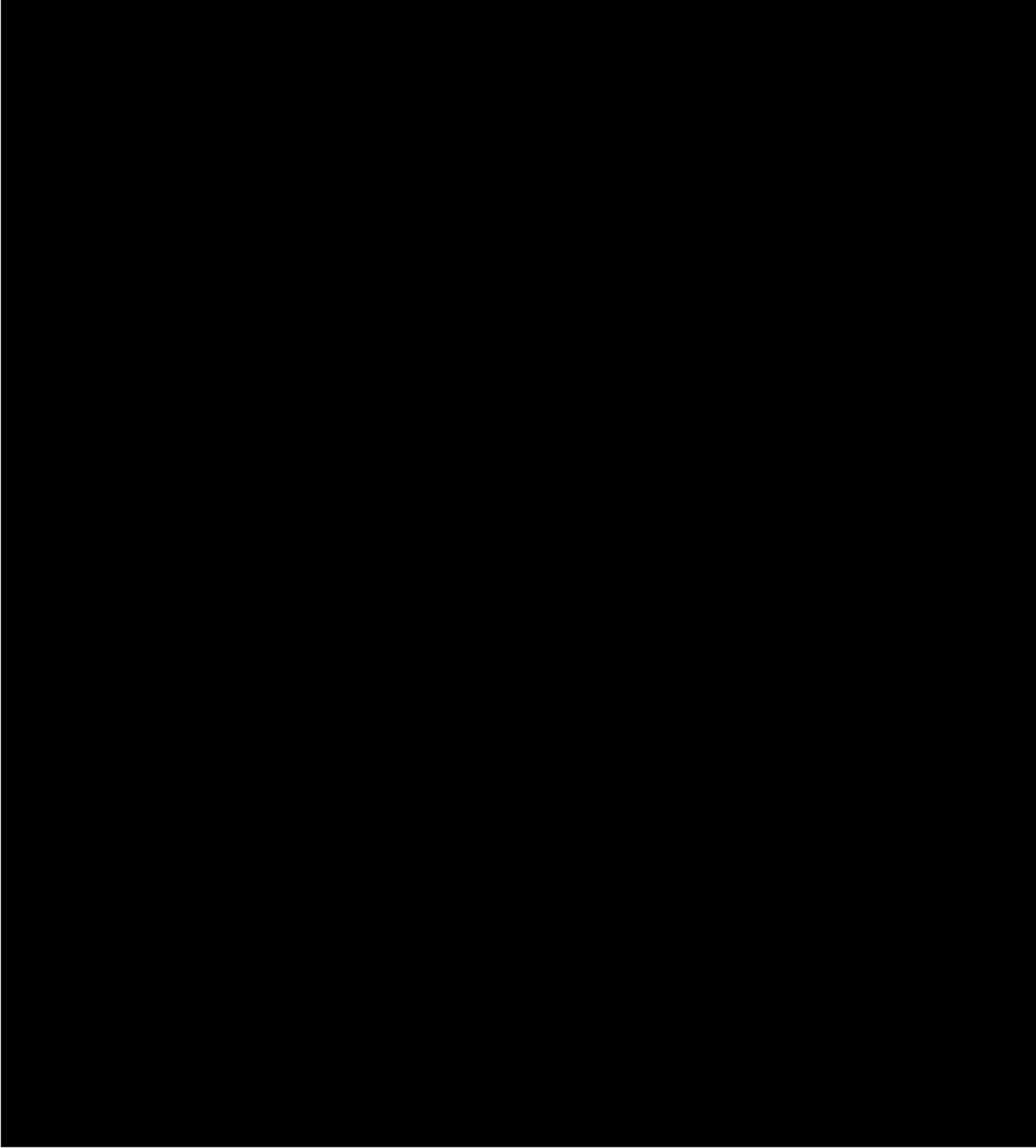
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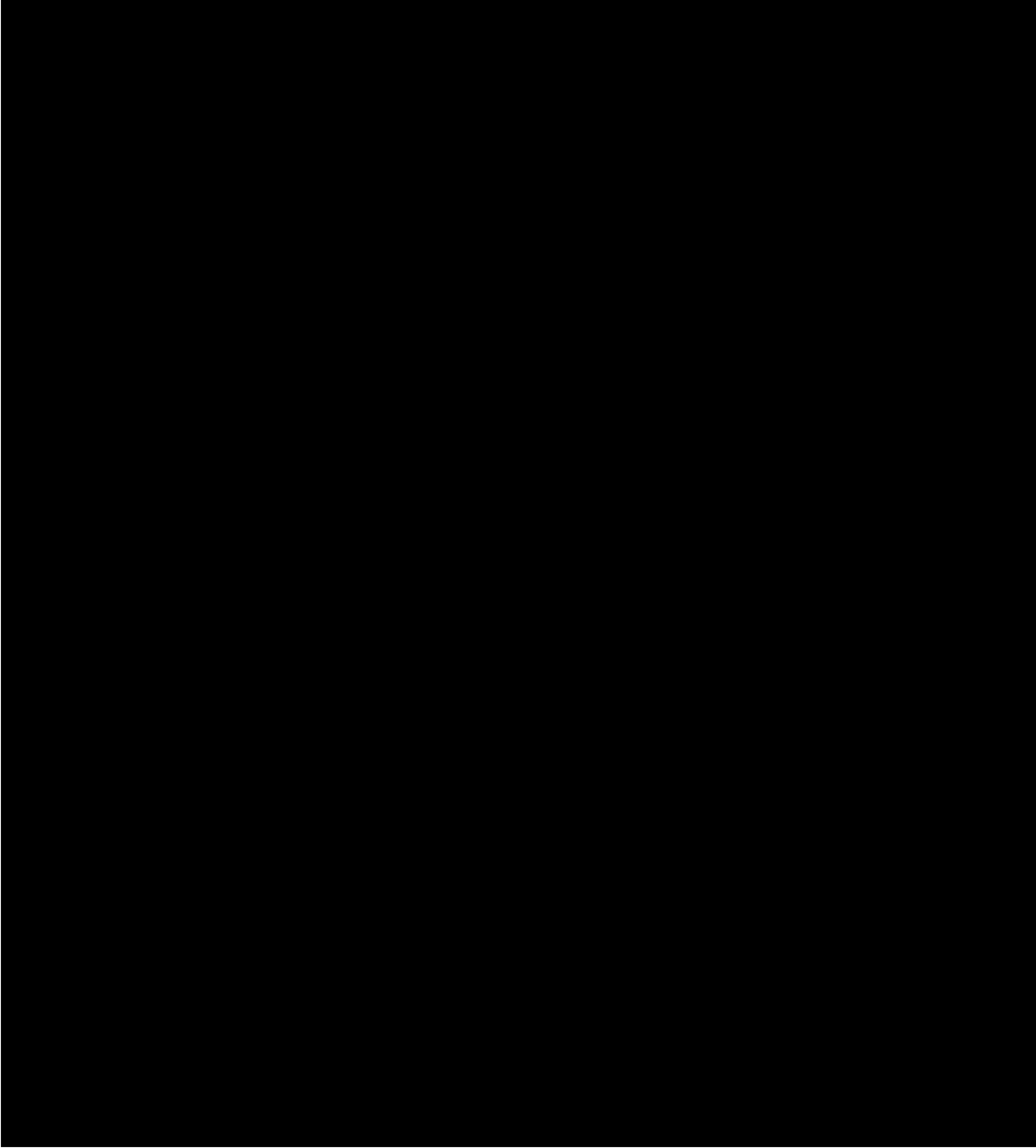


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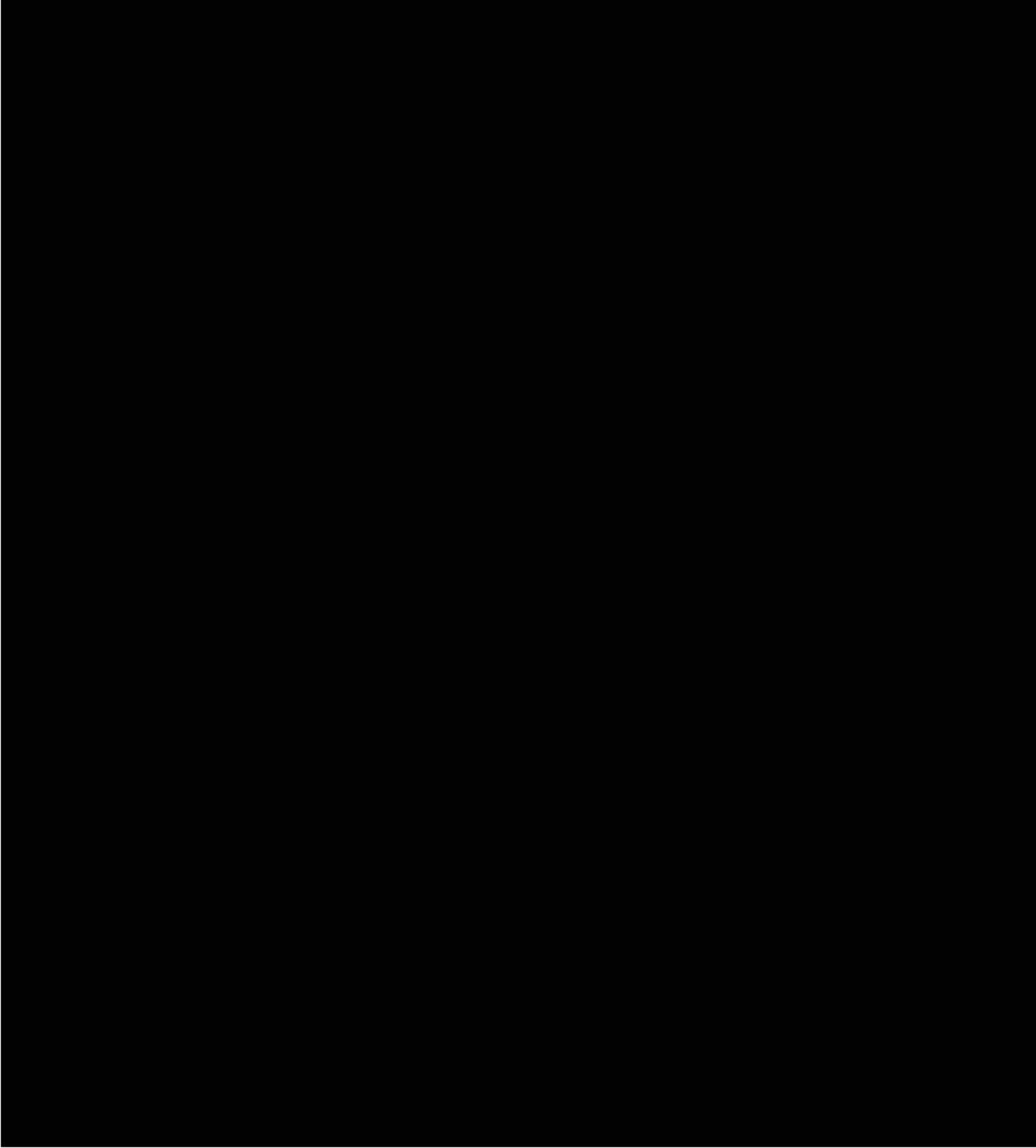




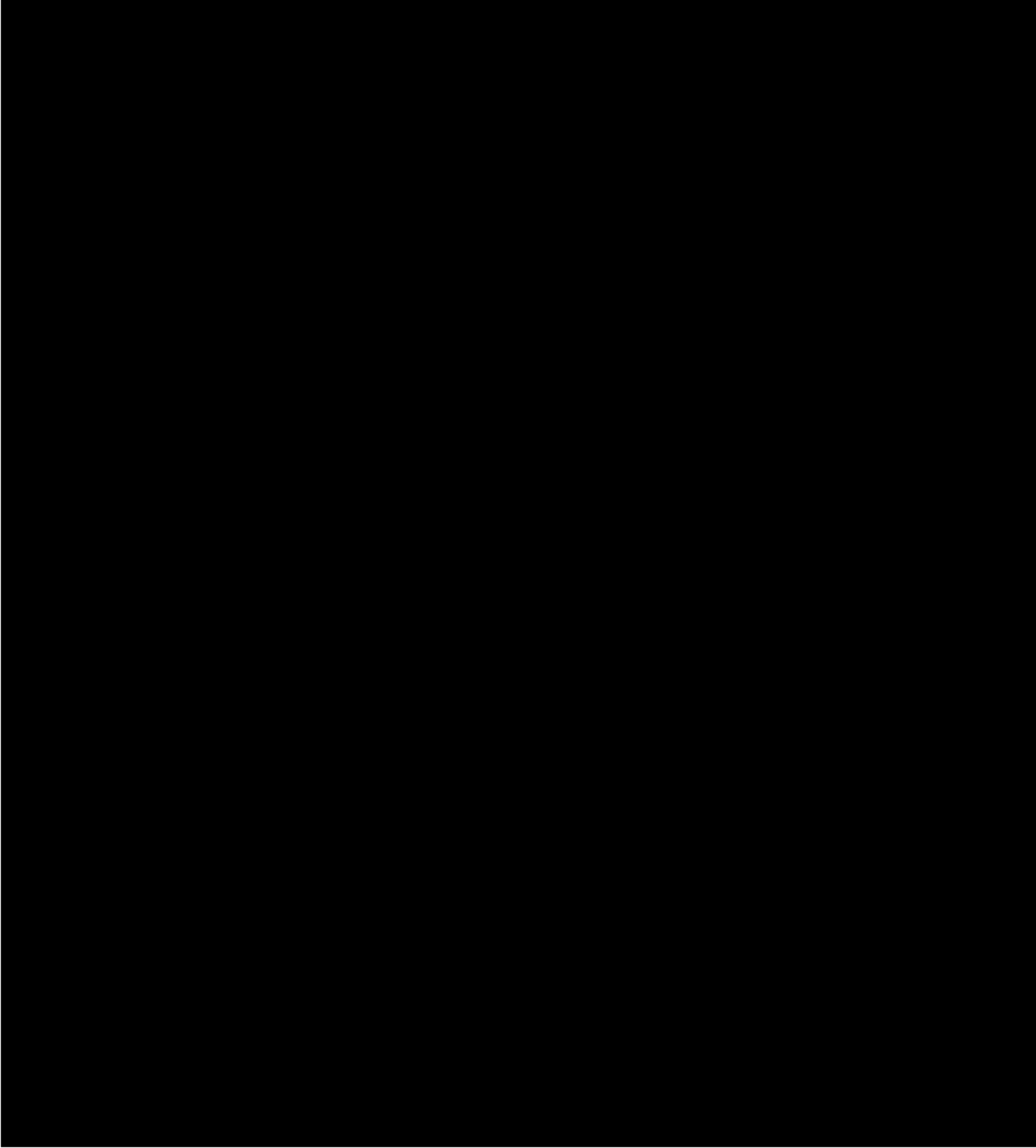
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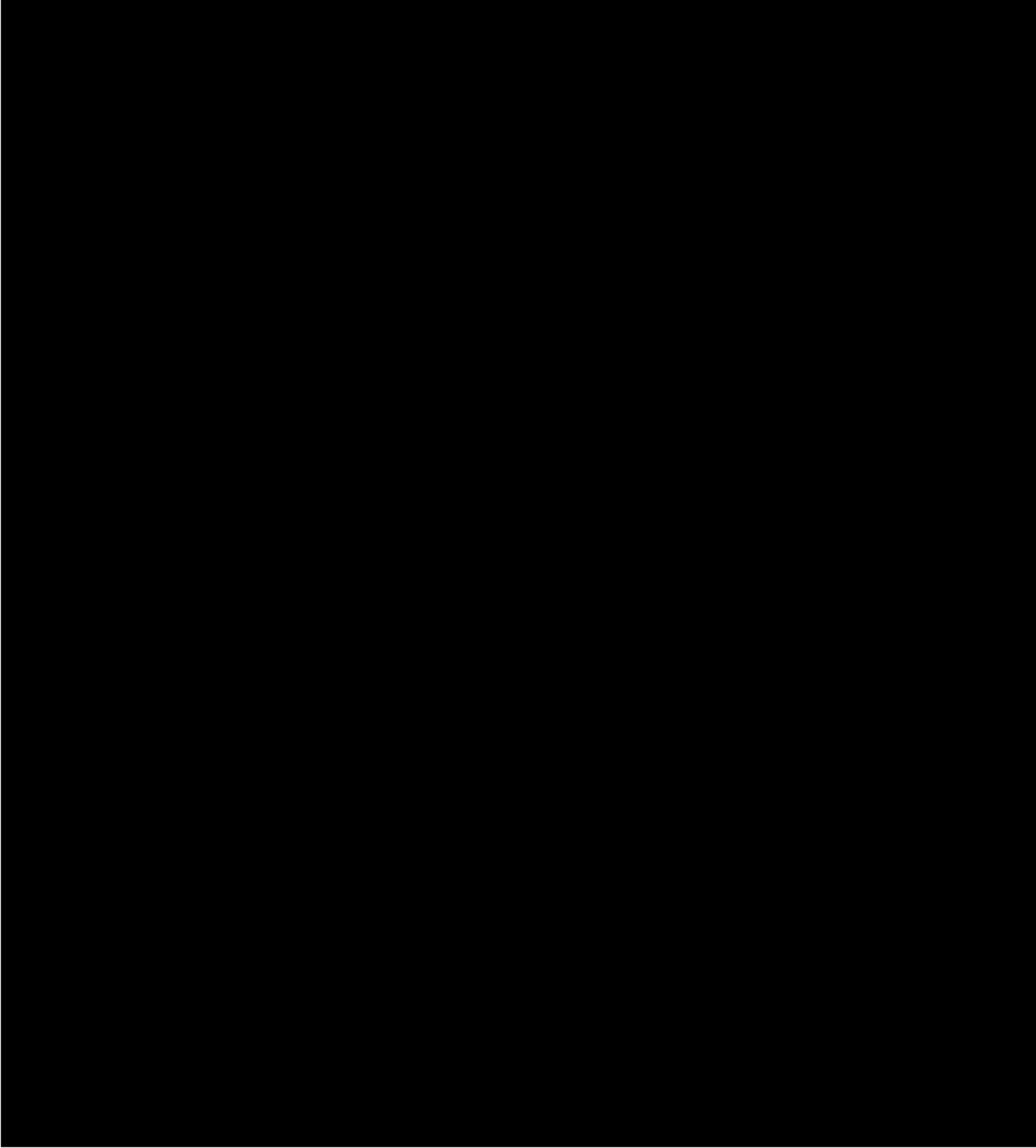
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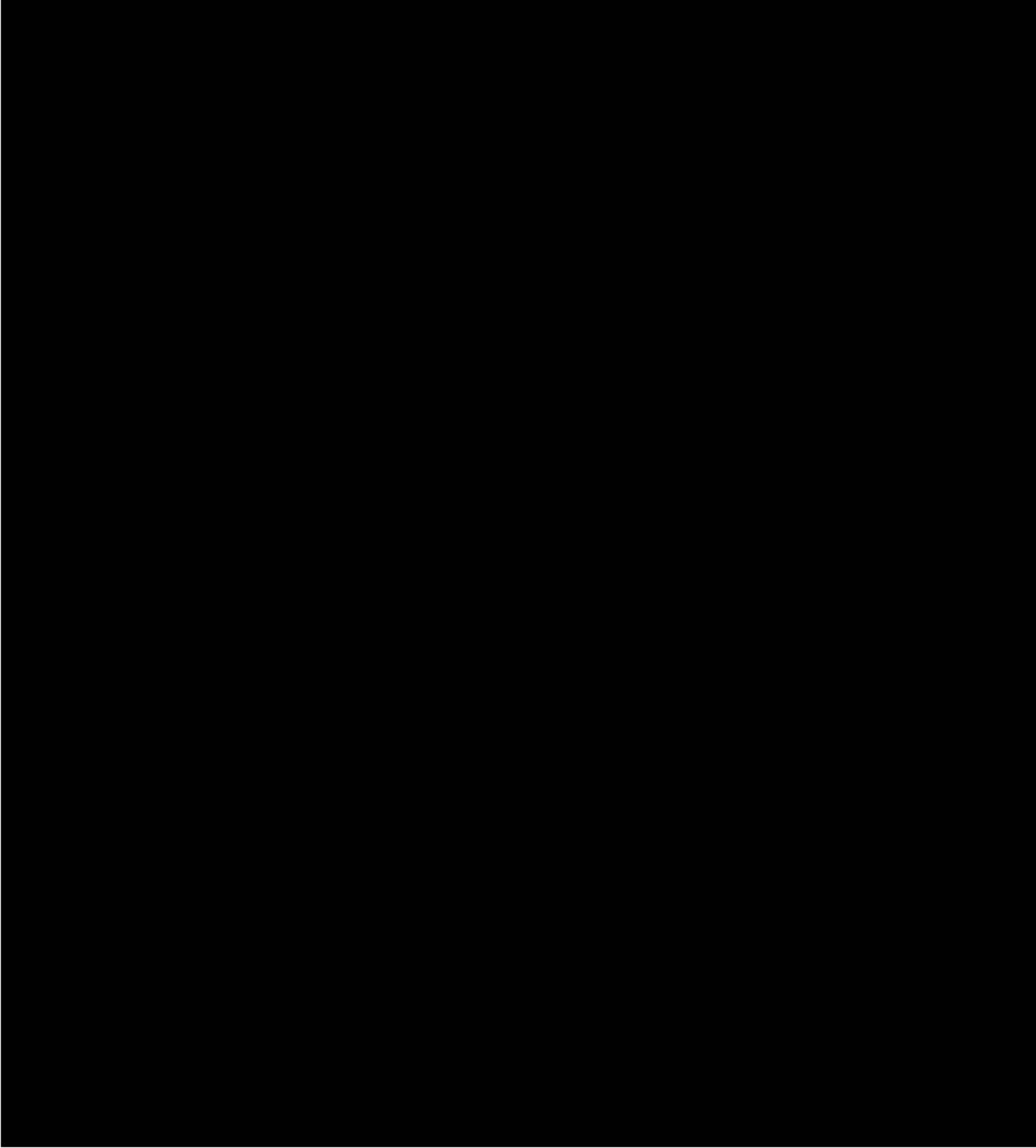
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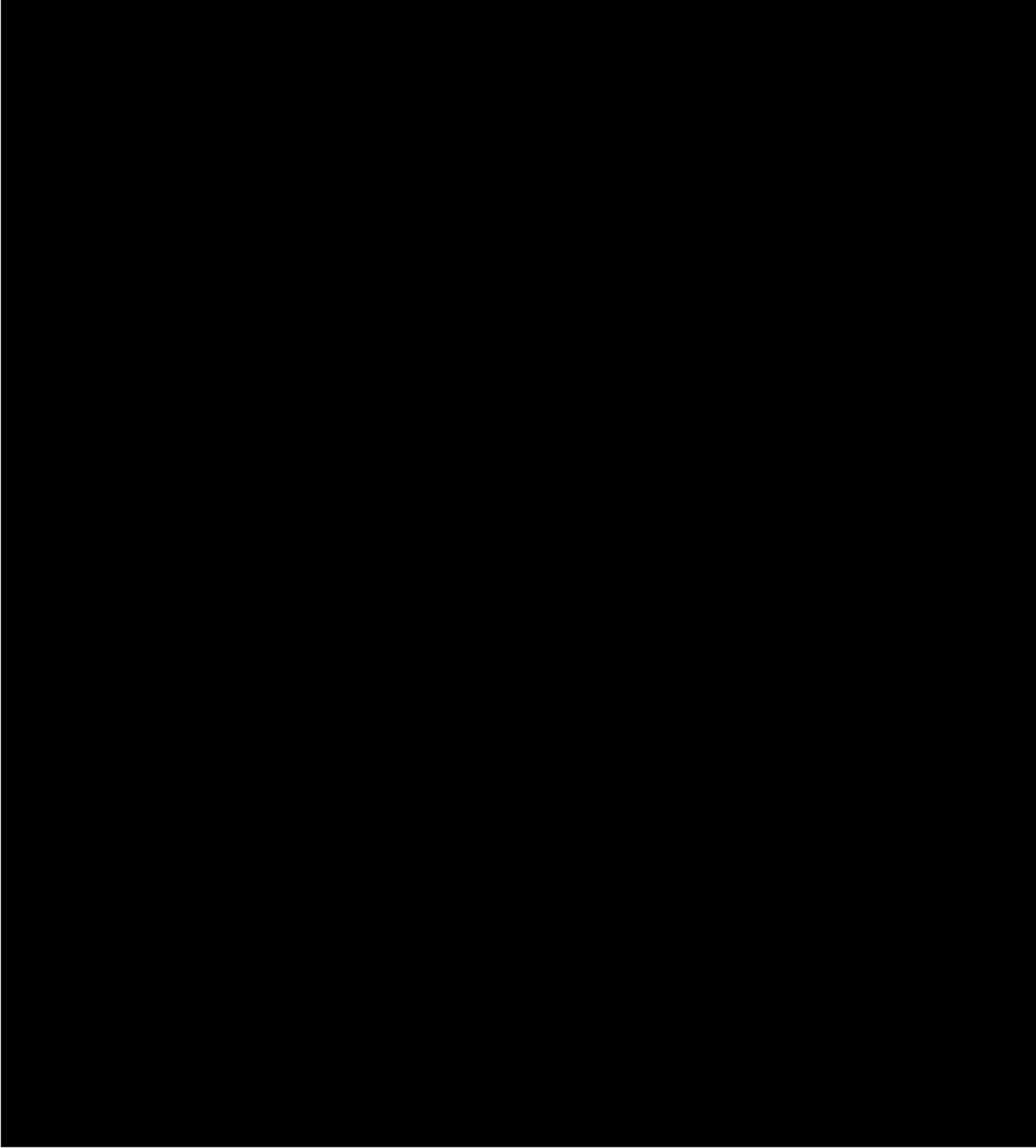
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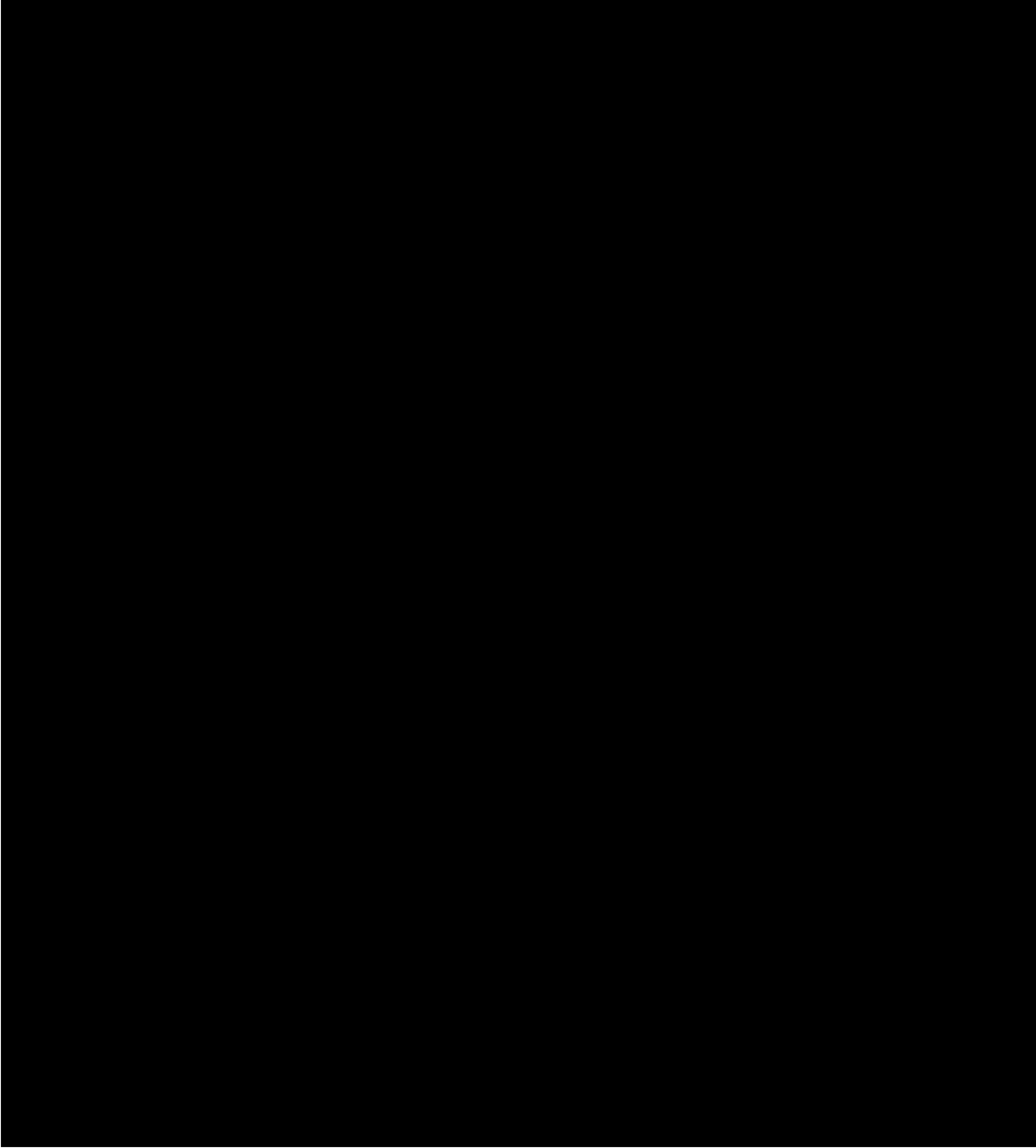


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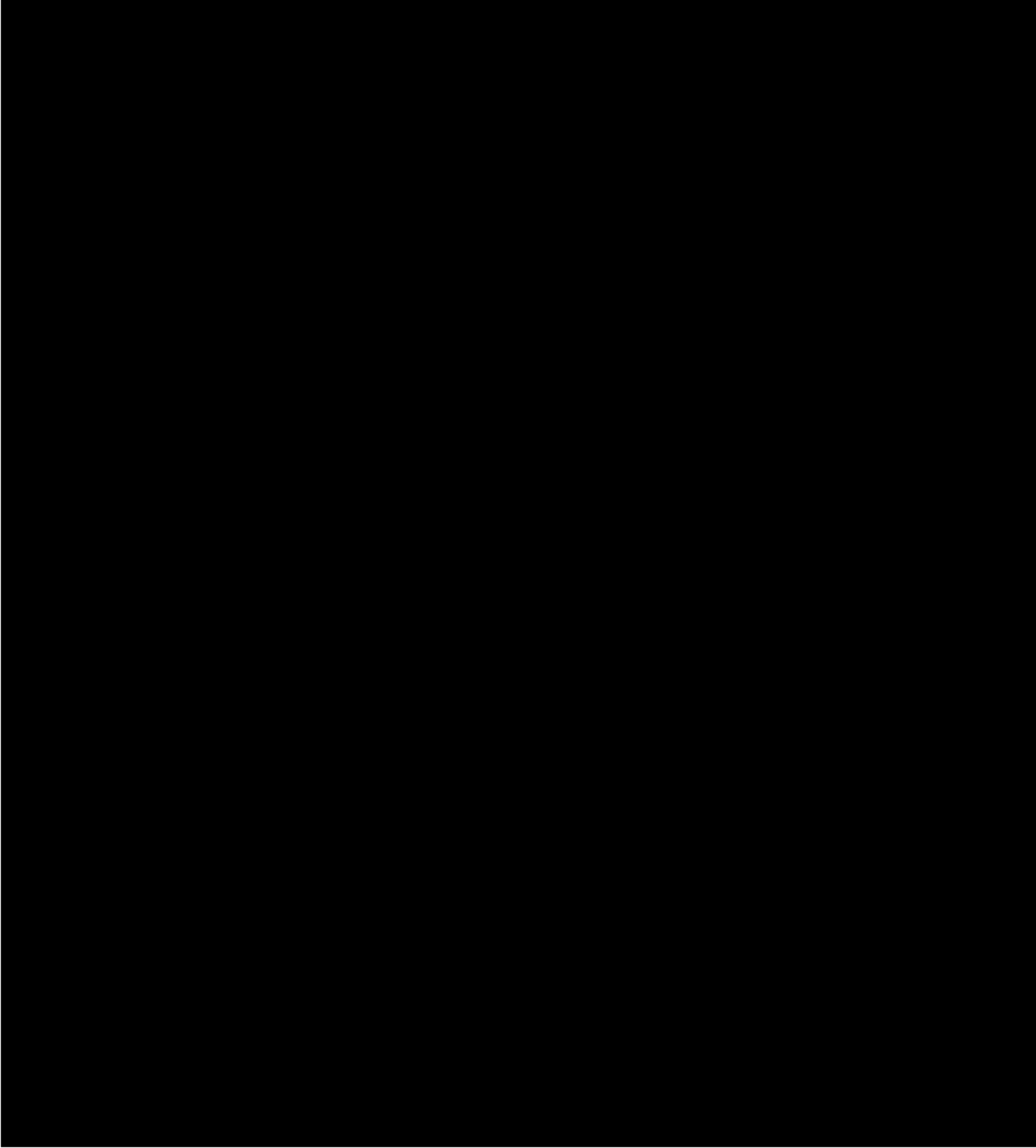


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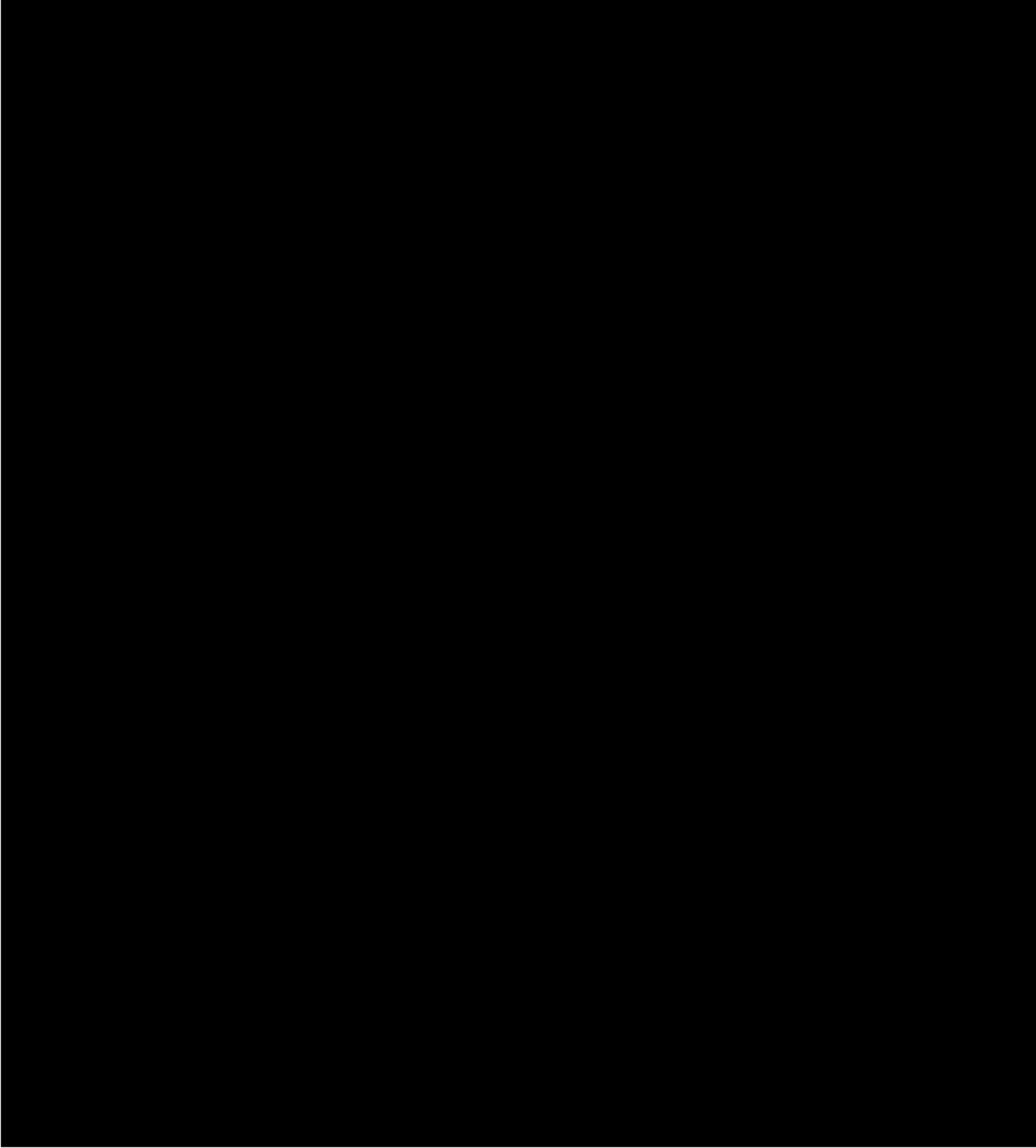


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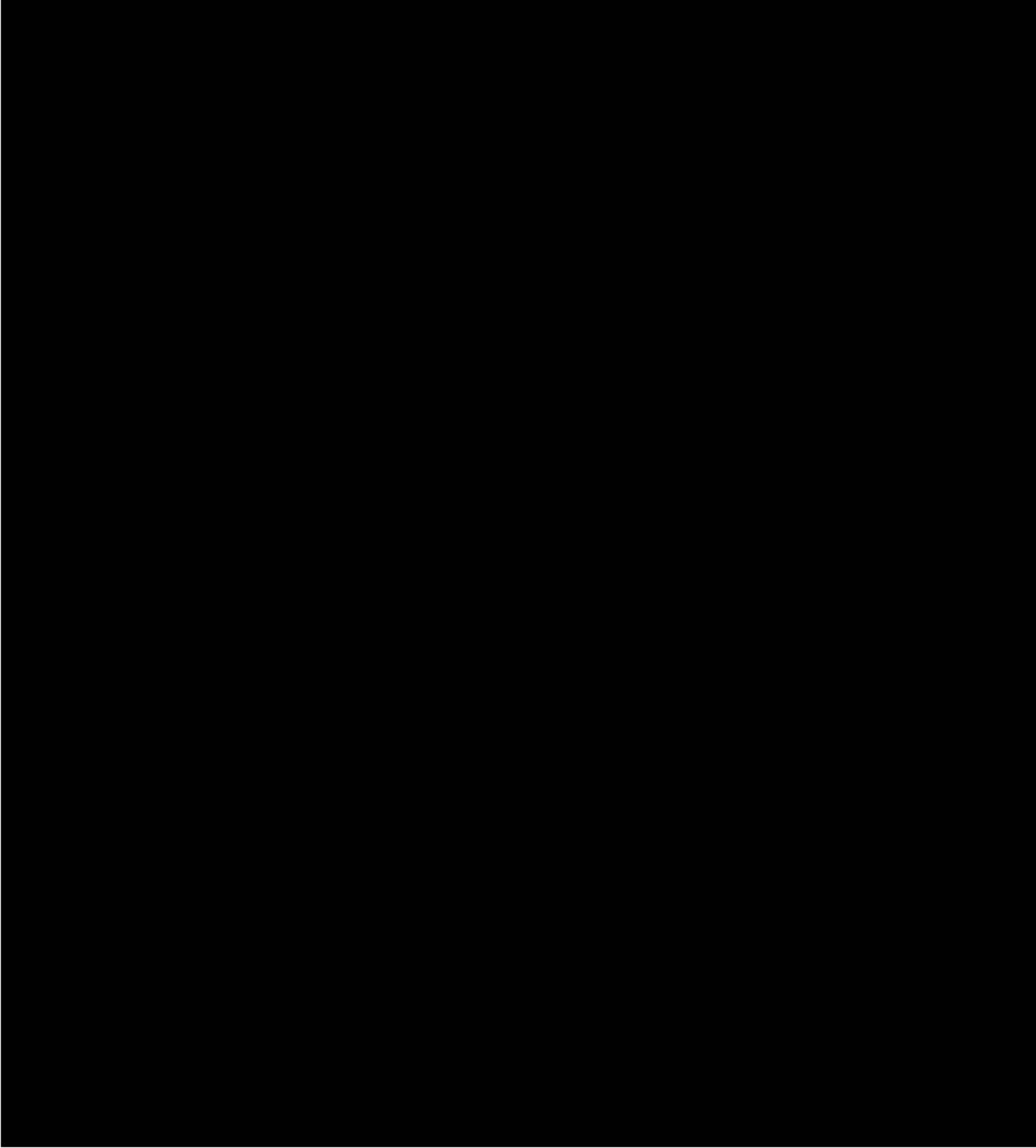
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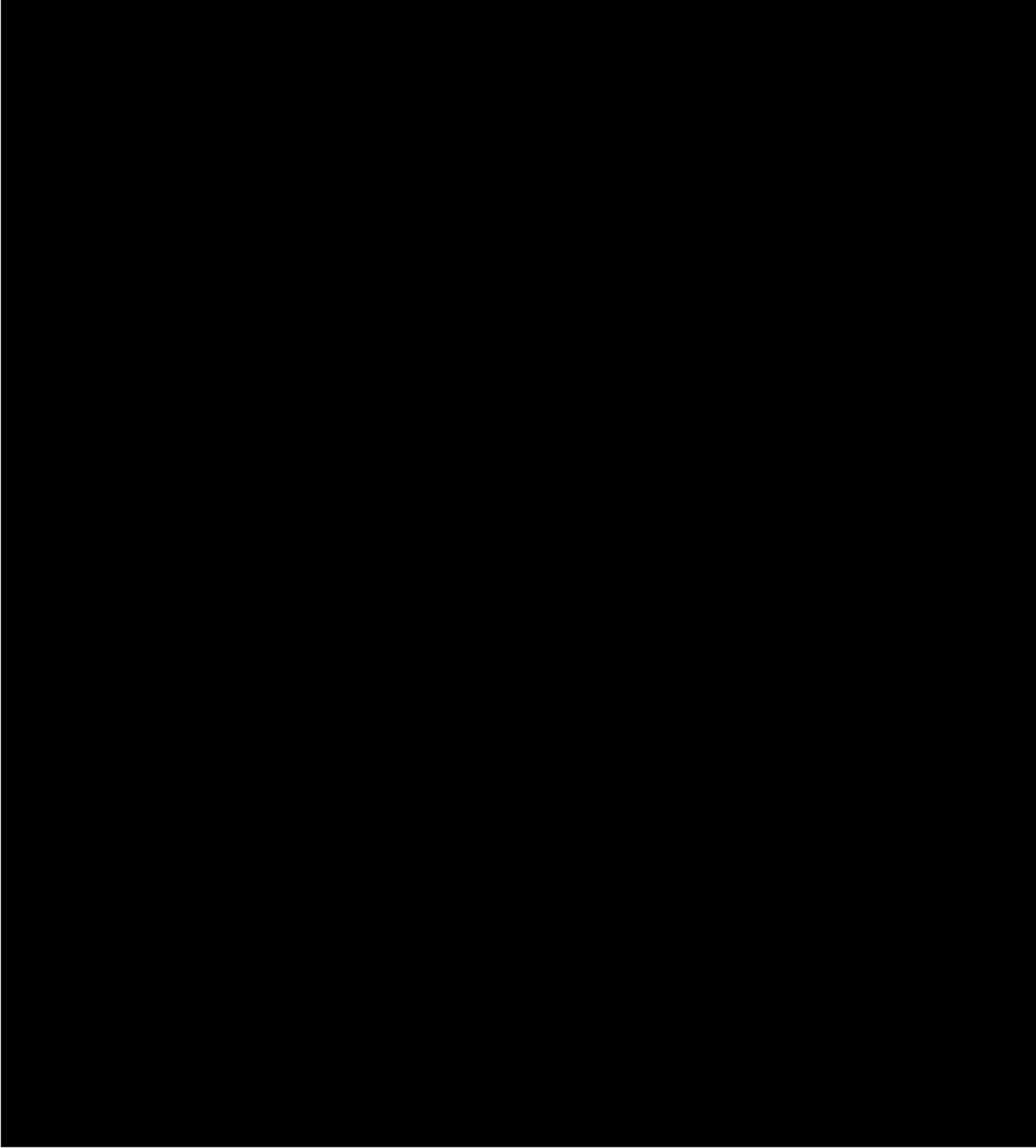
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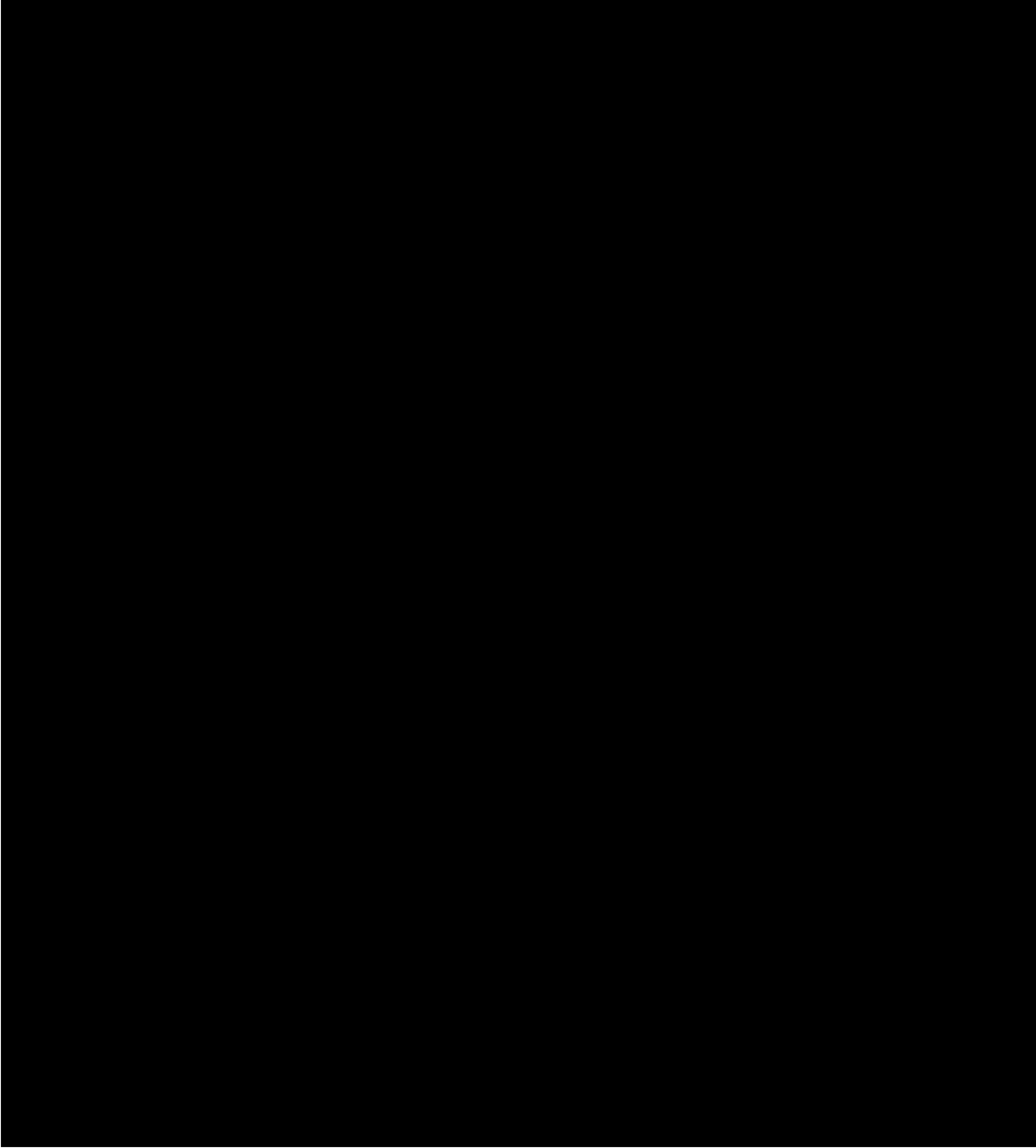


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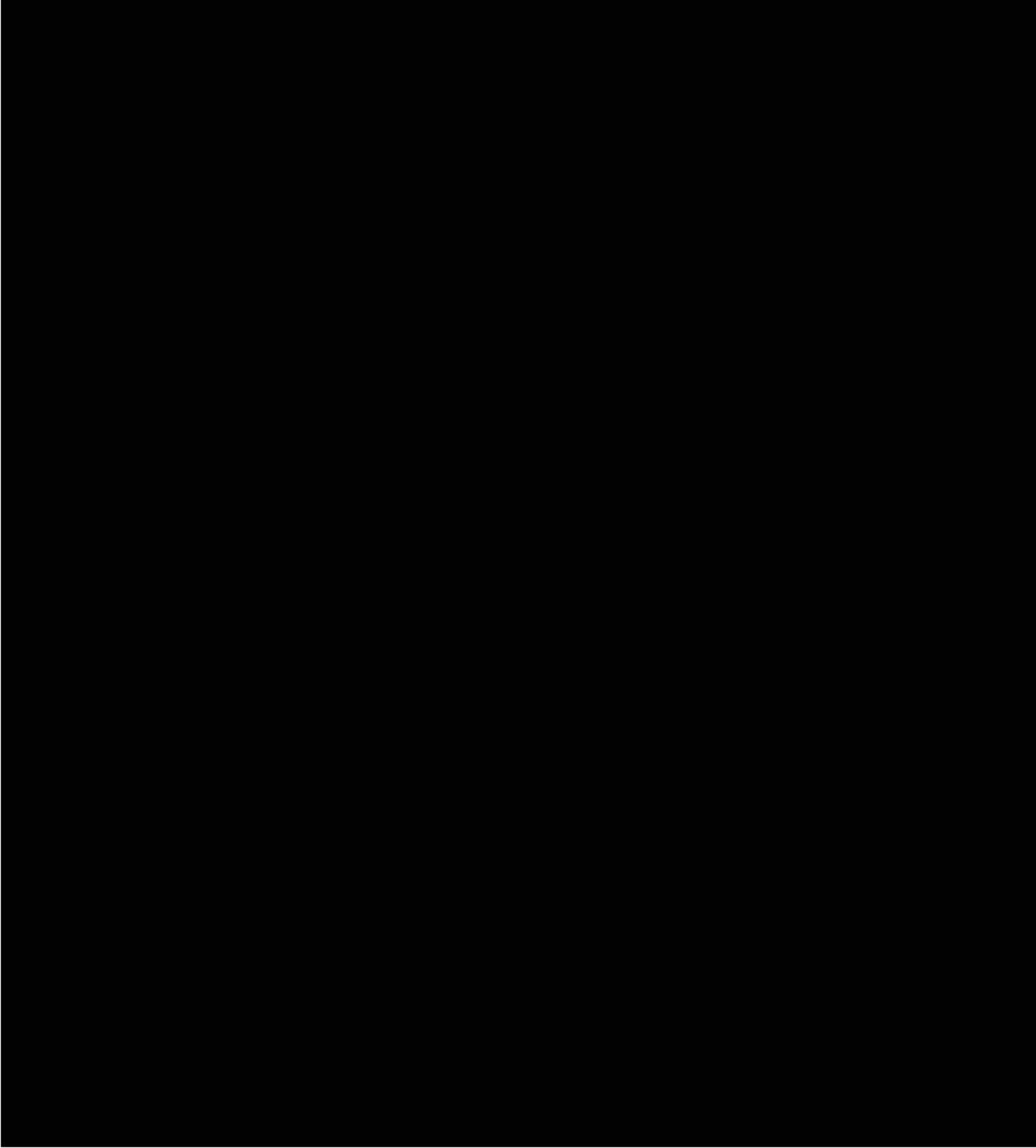




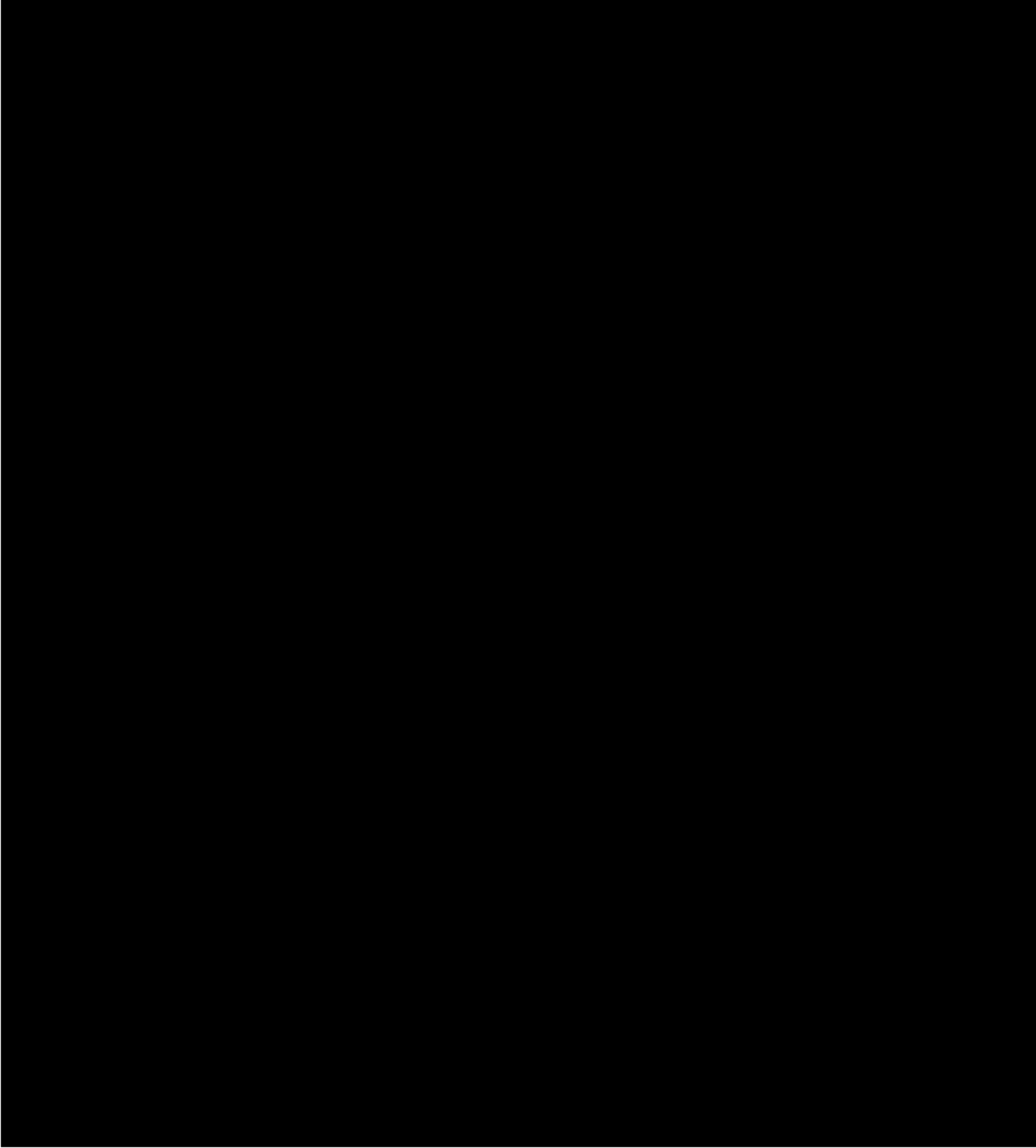
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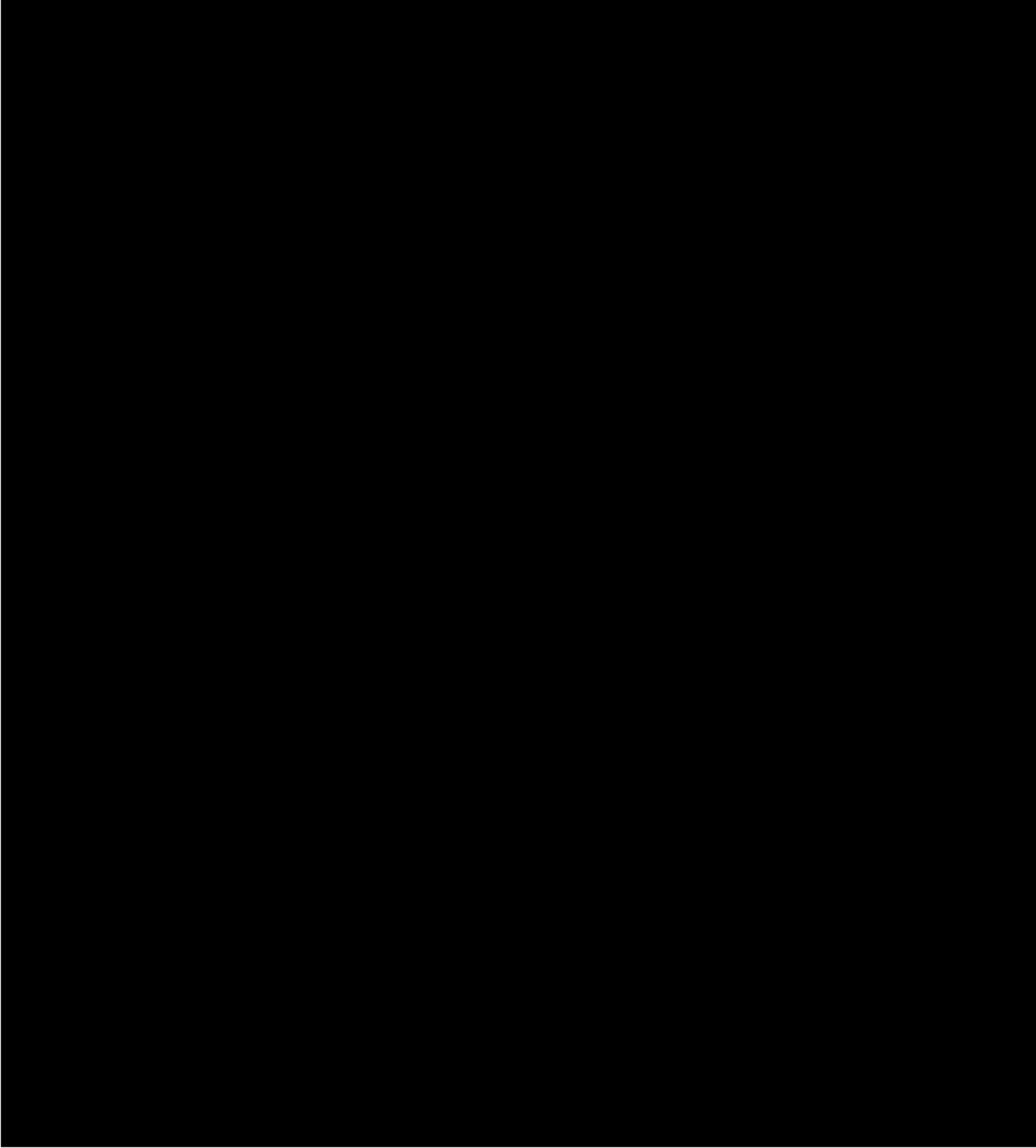
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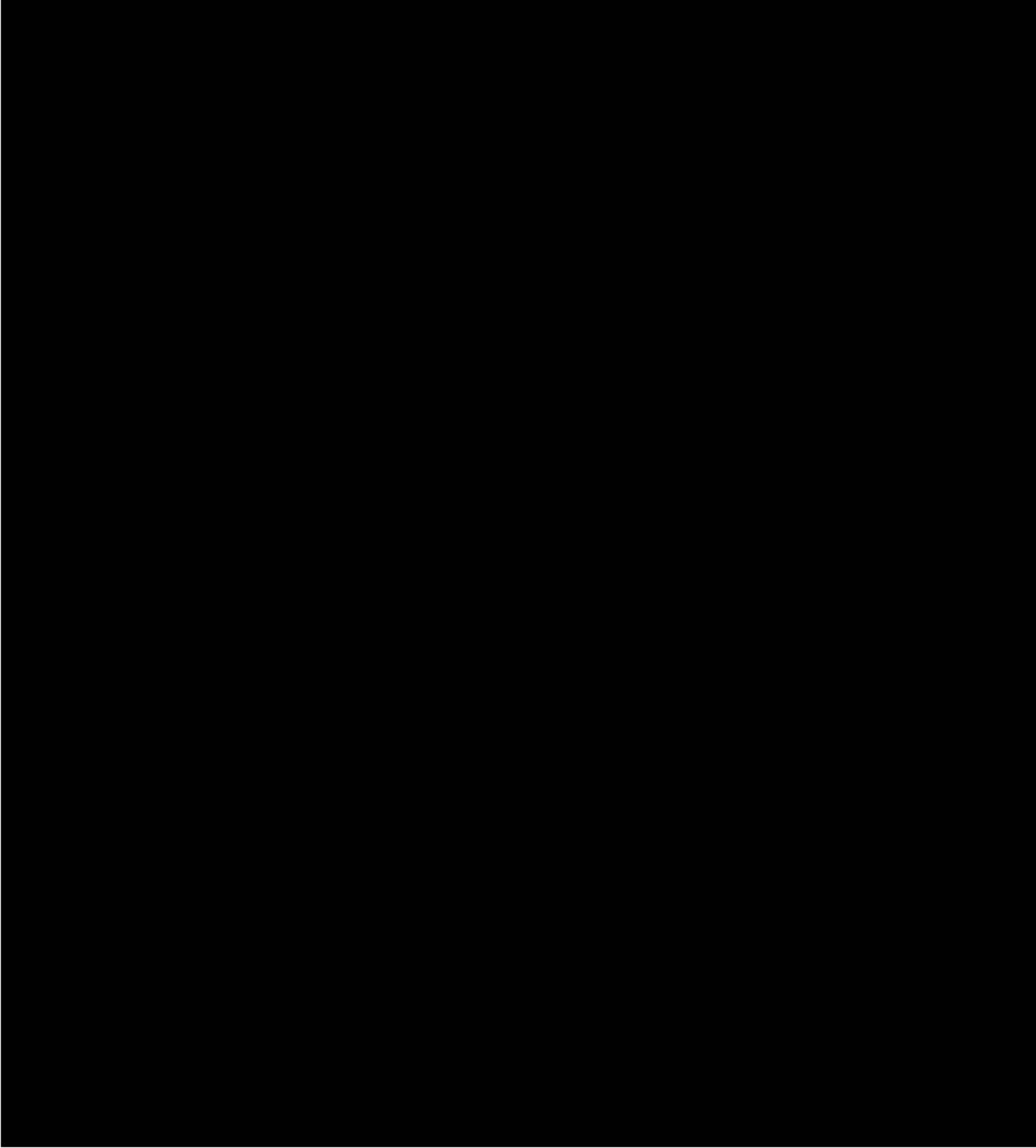
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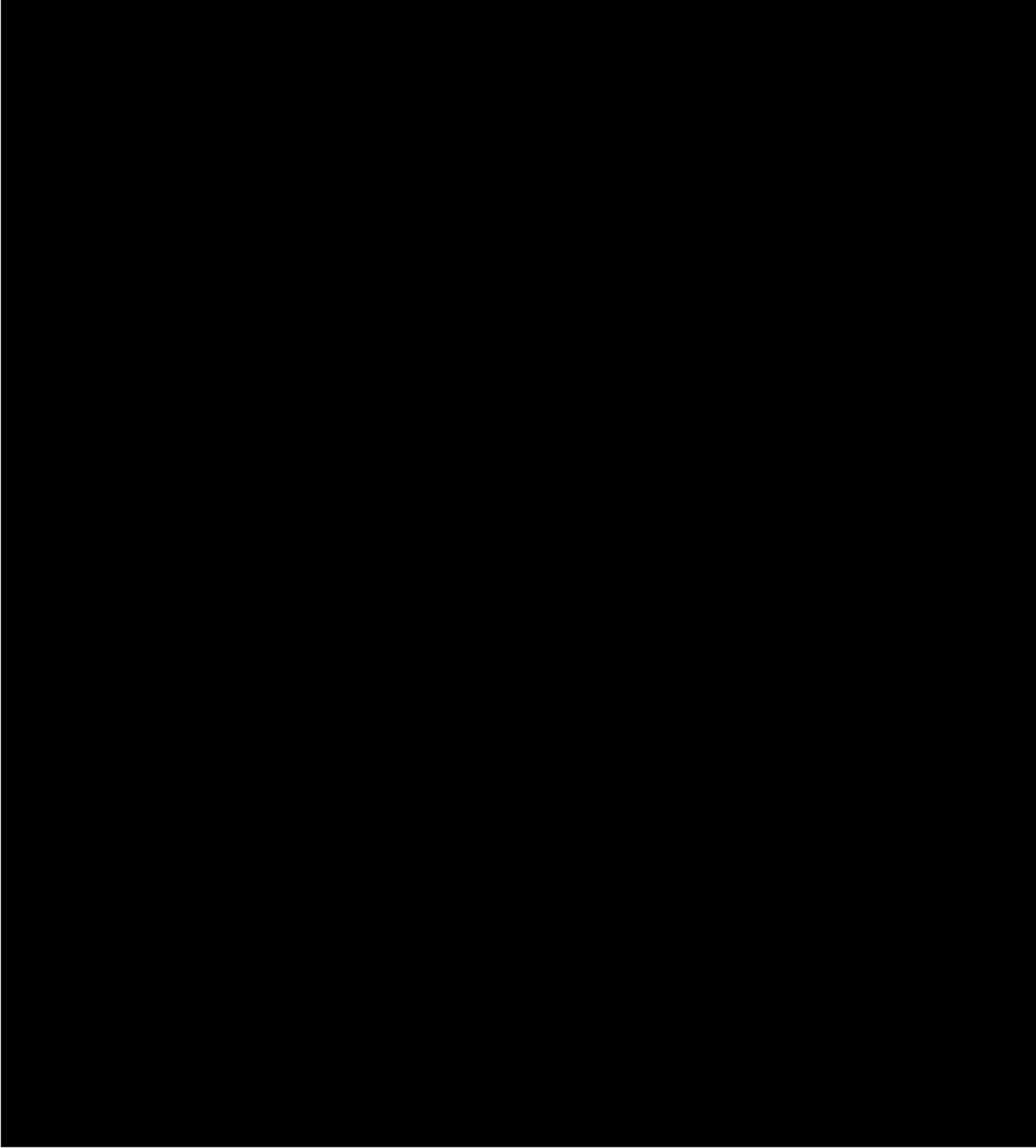
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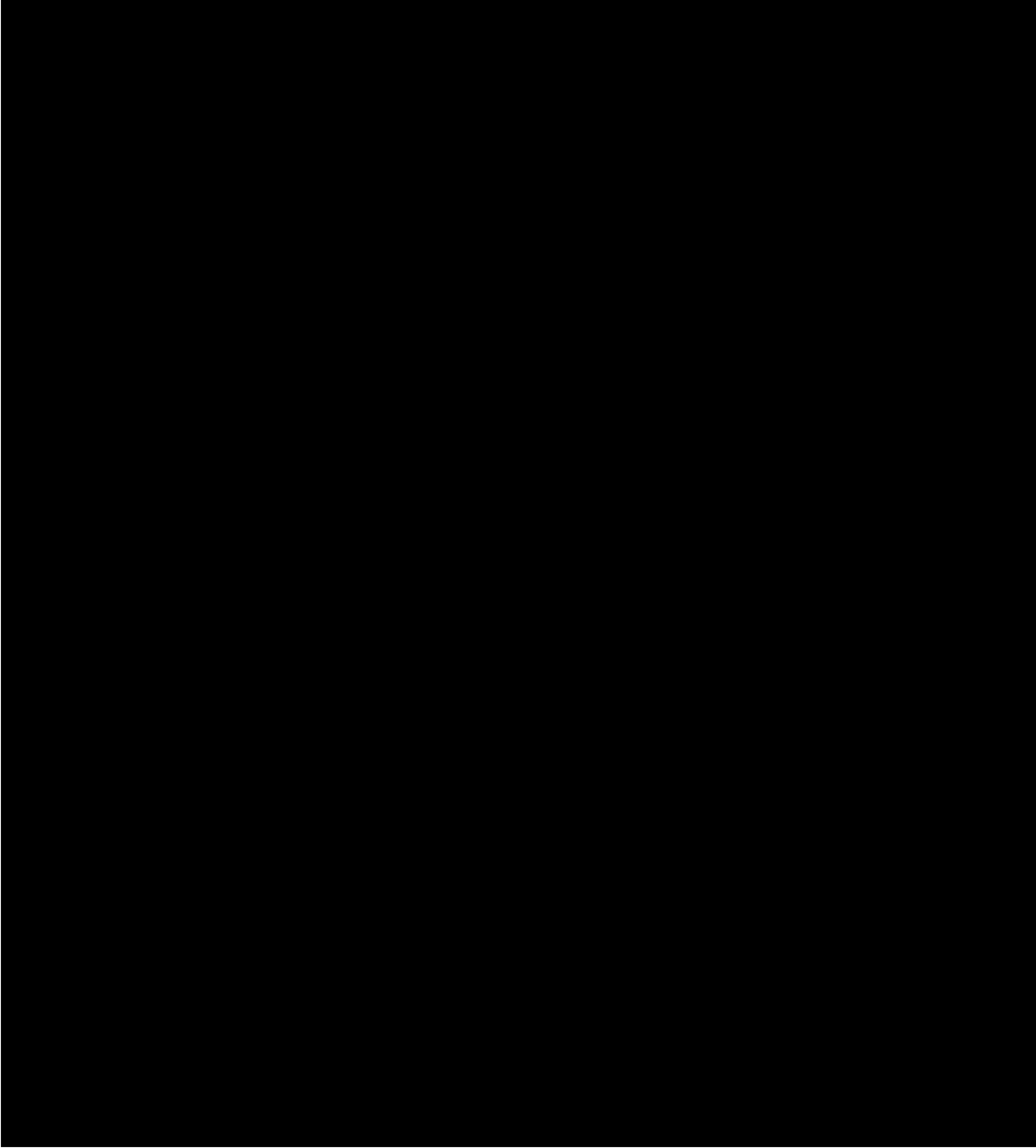


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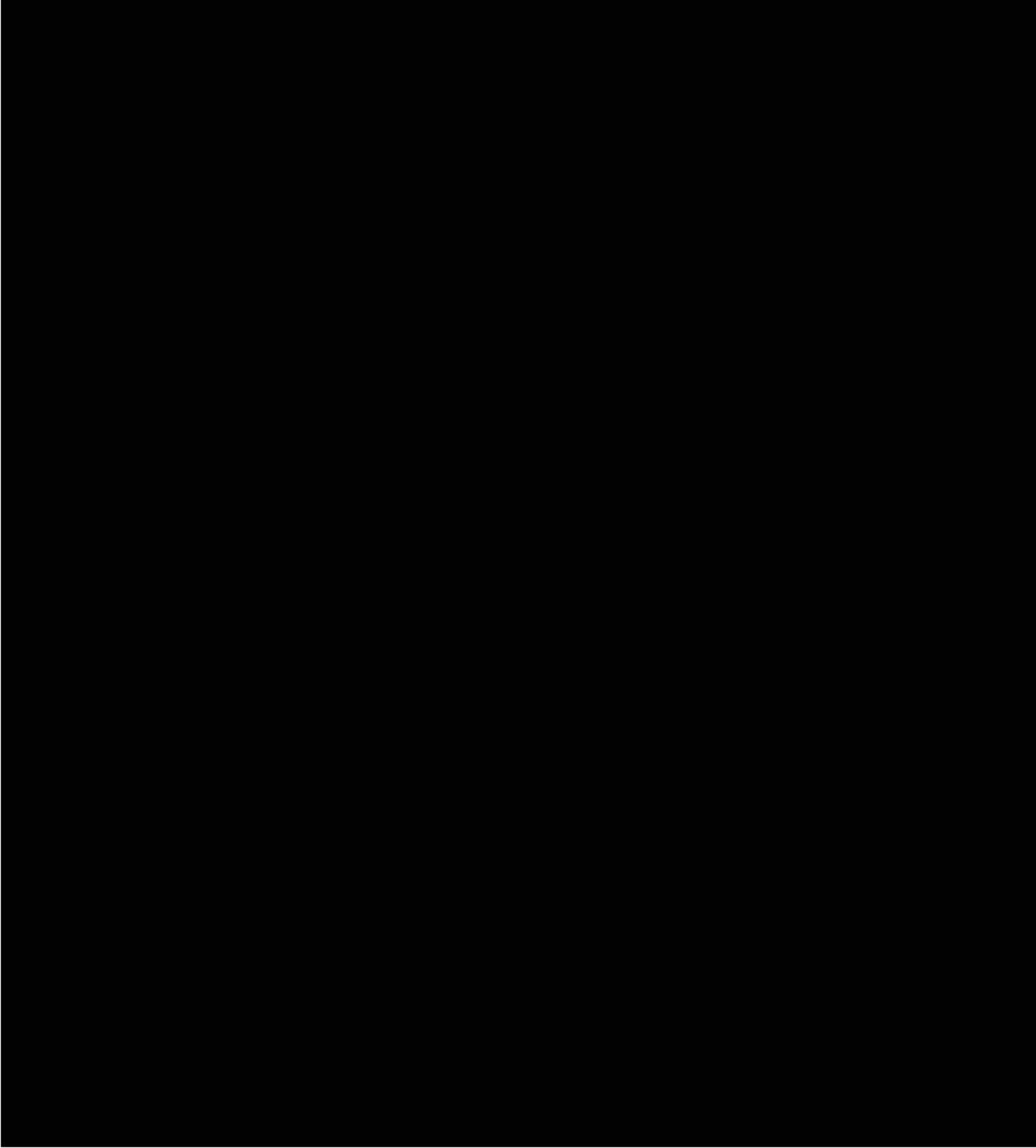




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**Modular Airborne Fire Fighting System Duty Status WG**

**Recommendations Addressing Impediments to Title 10, U.S.  
Code Duty Status for Modular Airborne Fire Fighting  
System Support**

**August 1, 2013**

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**Enclosure 3, Meeting Schedule**

Type	Date	Time	Location
Main	Thursday, May 23	14:00-16:00	Pentagon CC, M4
Main/Sub	Thursday, May 30	14:00-17:00	Pentagon CC, B8
Main/Sub	Tuesday, June 4	15:00-17:00	Pentagon CC, B3
SSG	Monday, June 10	14:30-16:00	Pentagon, 3D921
Main/Sub	Thursday, June 13	14:00-17:00	Pentagon CC, B9
Main/Sub	Wednesday, June 19	14:00-17:00	Pentagon CC, B8
Main/Sub	Thursday, June 27	14:00-17:00	Pentagon CC, B5
Main/Sub	Thursday, July 11	14:00-17:00	Pentagon CC, M3
Main/Sub	Thursday, July 18	10:00-12:00	Pentagon CC, M3
SSG	Wednesday, July 24	14:30-16:00	Pentagon, 3D921
Main/Sub	Thursday, July 25	14:00-17:00	Pentagon CC, M4
Main/Sub	Thursday, August 1	14:00-17:00	Pentagon CC, M4



# **Enclosure 4, WG Members**

Organization	Name	E-Mail Address	Phone Number
USD(P) Co-Chair	Mr. (b) (6)	osd.mil	571-256-8353
JS J5 Co-Chair	Col (b) (6)	@mail.mil	703-697-0479
<b>OSD</b>			
USD(P)	Mr. (b) (6)	osd.mil	571-256-8315
USD(P)	Mr. (b) (6)	@osd.mil	256-571-8317
USD(P&R)	COL (b) (6)	osd.mil	571-256-4579
OASD(RA)	Col (b) (6)	@osd.mil	703-695-4126
OASD(RA)	Col (b) (6)	osd.mil	703-693-2241
OASD(RA)	LTC (b) (6)	@osd.mil	703-693-2191
OASD(RA)	LTC (b) (6)	osd.mil	703-571-3164
OASD(RA)	Mr. (b) (6)	@osd.mil	703-693-7479
OUSD(C)	Ms. (b) (6)	osd.mil	703-614-7522
OUSD(C)	Ms. (b) (6)	@osd.mil	703-695-8152
OUSD(C)	Maj (b) (6)	osd.mil	703-614-7144
OUSD(C)	LTC (b) (6)	@osd.mil	703-697-1681
<b>SecAF/Air Staff</b>			
SAF/MRR	Col (b) (6)	pentagon.af.mil	703-697-6429
AF/REXX	Mr. (b) (6)	us.af.mil	703-695-5017
AF/REXP	Lt Col (b) (6)	pentagon.af.mil	703-695-5059
AF/REPP	Lt Col (b) (6)	@pentagon.af.mil	703-614-0650
AF/REPP	CMSGT (b) (6)	pentagon.af.mil	703-614-0654
SAF/FM	Mr. (b) (6)	us.af.mil	
SAF/AAH	Lt Col (b) (6)	erdman@pentagon.af.mil	571-432-1564
SAF/GCI	Mr. (b) (6)	pentagon.af.mil	703-614-6361
SAF/GCI	Mr. (b) (6)	pentagon.af.mil	703-697-0189
AF-A1	Lt Col (b) (6)	@pentagon.af.mil	703-697-1821
AF-A3O-AH	Mr. (b) (6)	pentagon.af.mil	DSN: 297-3415
<b>Joint Staff</b>			
JS J-1	CAPT (b) (6)	@mail.mil	757-203-5448
JS J-1	SMSGT (b) (6)	mail.mil	703-614-9150
JS J-3	LTC (b) (6)	@mail.mil	703-693-5446
JS J-34	MAJ (b) (6)	mil@mail.mil	703-614-7969
JS-NGRM	Lt Col (b) (6)	@mail.mil	703-571-9505
JS-NGRM	COL (b) (6)	mail.mil	703-571-9504
<b>National Guard Bureau</b>			
NG-J1	Mr. (b) (6)	@mail.mil	703-607-3652
NG-J1	Mr. (b) (6)	us.army.mil	703-607-1476
NG-J1	Col (b) (6) (T32)	@mail.mil	703-607-5419
NG-J1-TN	Mr. (b) (6)	mail.mil	703-601-2980
NG-J3	Col (b) (6)	@mail.mil	703-607-1724
NG-J3	Maj (b) (6)	mail.mil	703-607-1803
NG-J3	Col (b) (6)	mail.mil	703-607-7506
NG-J5	Mr. (b) (6)	mail.mil	703-601-2674
NG-JA	COL (b) (6)	@us.army.mil	703-607-2697
NG-LL	Lt Col (b) (6)	mail.mil	703-614-4798
NG-A1	Maj (b) (6)	@ang.af.mil	703-612-9138
NG-A3	Col (b) (6)	ang.af.mil	240-612-9656
NG-A3	Mr. (b) (6)	@ang.af.mil	240-612-9304
NG-A3	Maj (b) (6)	diehl@ang.af.mil	240-612-9874
NG-A5	Mr. (b) (6)	ang.af.mil	703-612-9353

Organization	Name	E-Mail Address	Phone Number
<b>AFRC</b>			
HQ AFRC	Col (b) (6)	@us.af.mil	DSN 497-1580
<b>MAFFS Airlift Wings</b>			
302nd AW (USAFR)	Lt Col (b) (6)	us.af.mil	DSN 834-6613
145 AW (NCNG)	Col (b) (6)	@ang.af.mil	DSN 231-4956
145 AW (NCNG)	Lt Col (b) (6)	ang.af.mil	704-398-4725
146 AW (CANG)	Lt Col (b) (6)	@ang.af.mil	805-986-7790
153 AW (WYNG)	Col (b) (6)	ang.af.mil	307-772-6153
153 AW (WYNG)	Lt (b) (6)	@ang.af.mil	307-772-6320
153 AW (WYNG)	Maj (b) (6)	ang.af.mil	DSN 388-6790
<b>USNORTHCOM</b>			
NORTHCOM J-1	Mr. (b) (6)	@northcom.mil	DSN 692-0833
NORTHCOM J-3	Mr. (b) (6)	northcom.mil	DSN 692-9609
NORTHCOM J-3	Mr. (b) (6)	@northcom.mil	DSN 834-8227
NORTHCOM J-3	Mr. (b) (6)	northcom.mil	719-554-7221
NORTHCOM J-5	LTC (b) (6)	@northcom.mil	DSN 834-8610
NORTHCOM J-5	Mr. (b) (6)	northcom.mil	719-554-0767
<b>USNORTHCOM Washington Office</b>			
N-NC/WO	Mr. (b) (6)	@northcom.mil	703-697-2751
N-NC/WO	CDR (b) (6)	northcom.mil	703-695-4579
<b>AFNORTH</b>			
AFNORTH	Lt Col (b) (6)	us.af.mil	850-283-2625
AFNORTH	Maj (b) (6)	tyndall.af.mil	850-283-0690
<b>USTRANSCOM/AMC</b>			
TRANSCOM J-3	Lt Col (b) (6)	ustranscom.mil	DSN 770-7706
TRANSCOM J-3	LTC (b) (6)	@ustranscom.mil	DSN 770-7706
TRANSCOM J-3	Lt Col (b) (6)	ustranscom.mil	DSN 770-7708
AMC/A3V	Lt Col (b) (6)	us.af.mil	618-229-3665

**Enclosure 5, Senior Steering Group Members**

Organization	Name
USD(P), Co-Chair	DASD Bob Salesses
Joint Staff J5, Co-Chair	Maj Gen Randy Kee Brig Gen Peter Gersten
USD(P&R)	Mr. Paul Patrick
OASD(RA)	Mr. Robert Smiley
OUSDC	Mr. Kevin Lannon
SAF/MRR	Mr. Bill Booth
AF/REX (AFR)	BG Kenneth Lewis
Joint Staff J34	Maj Gen Brian Neal
Joint Staff NG-RM	MG W. Scott Gorske
NGB J3	MG Gerry Ketchum
NGB J1	Mr. Kevin Crowley
ANG A3	Brig Gen Scott Williams
USNORTHCOM J3	Brig Gen Don McGregor
USNORTHCOM J5	BG Joseph Whitlock
USTRANSCOM	Brig Gen James Muscatell
NC NG	MG Gregory Lusk
CA NG	MG David Baldwin
WY NG	Brig Gen Harold Reed

**Modular Airborne Fire Fighting System Duty Status Working Group**

**Recommendations Addressing Impediments to Title 10, U.S.  
Code, Duty Status for Modular Airborne Fire Fighting  
System Support**

**August 15, 2013**

(b)(5)

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## Appendix C, Meeting Schedule

Type	Date	Time	Location
Main	Thursday, May 23	14:00-16:00	Pentagon CC, M4
Main/Sub	Thursday, May 30	14:00-17:00	Pentagon CC, B8
Main/Sub	Tuesday, June 4	15:00-17:00	Pentagon CC, B3
SSG	Monday, June 10	14:30-16:00	Pentagon, 3D921
Main/Sub	Thursday, June 13	14:00-17:00	Pentagon CC, B9
Main/Sub	Wednesday, June 19	14:00-17:00	Pentagon CC, B8
Main/Sub	Thursday, June 27	14:00-17:00	Pentagon CC, B5
Main/Sub	Thursday, July 11	14:00-17:00	Pentagon CC, M3
Main/Sub	Thursday, July 18	10:00-12:00	Pentagon CC, M3
SSG	Wednesday, July 24	14:30-16:00	Pentagon, 3D921
Main/Sub	Thursday, July 25	14:00-17:00	Pentagon CC, M4
Main/Sub	Thursday, August 1	14:00-17:00	Pentagon CC, M4

## Appendix D, WG Members

Organization	Name	E-Mail Address	Phone Number
USD(P) Co-Chair	Mr. (b)(6)	(b)(6)@osd.mil	571-256-8353
JS J5 Co-Chair	Col (b)(6)	(b)(6)@mail.mil	703-697-0479
<b>OSD</b>			
USD(P)	Mr. (b)(6)	(b)(6)@osd.mil	571-256-8315
USD(P)	Mr. (b)(6)	(b)(6)@osd.mil	256-571-8317
USD(P&R)	COL (b)(6)	(b)(6)@osd.mil	571-256-4579
OASD(RA)	Col (b)(6)	(b)(6)@osd.mil	703-695-4126
OASD(RA)	Col (b)(6)	(b)(6)@osd.mil	703-693-2241
OASD(RA)	LTC (b)(6)	(b)(6)@osd.mil	703-693-2191
OASD(RA)	LTC (b)(6)	(b)(6)@osd.mil	703-571-3164
OASD(RA)	Mr. (b)(6)	(b)(6)@osd.mil	703-693-7479
OUSDC(C)	Ms. (b)(6)	(b)(6)@osd.mil	703-614-7522
OUSDC(C)	Ms. (b)(6)	(b)(6)@osd.mil	703-695-8152
OUSDC(C)	Maj (b)(6)	(b)(6)@osd.mil	703-614-7144
OUSDC(C)	LTC (b)(6)	(b)(6)@osd.mil	703-697-1681
<b>SecAF/Air Staff</b>			
SAF/MRR	Col (b)(6)	(b)(6)@pentagon.af.mil	703-697-6429
AF/REXX	Mr. (b)(6)	(b)(6)@us.af.mil	703-695-5017
AF/REXP	Lt Col (b)(6)	(b)(6)@pentagon.af.mil	703-695-5059
AF/REPP	Lt Col (b)(6)	(b)(6)@pentagon.af.mil	703-614-0650
AF/REPP	CMSGT (b)(6)	(b)(6)@pentagon.af.mil	703-614-0654
SAF/FM	Mr. (b)(6)	(b)(6)@us.af.mil	
SAF/AAH	Lt Col (b)(6)	(b)(6)@pentagon.af.mil	571-432-1564
SAF/GCI	Mr. (b)(6)	(b)(6)@pentagon.af.mil	703-614-6361
SAF/GCI	Mr. (b)(6)	(b)(6)@pentagon.af.mil	703-697-0189
AF-A1	Lt Col (b)(6)	(b)(6)@pentagon.af.mil	703-697-1821
AF-A3O-AH	Mr. (b)(6)	(b)(6)@pentagon.af.mil	DSN: 297-3415
<b>Joint Staff</b>			
JS J-1	CAPT (b)(6)	(b)(6)@mail.mil	757-203-5448
JS J-1	SMSGT (b)(6)	(b)(6)@mail.mil	703-614-9150
JS J-3	LTC (b)(6)	(b)(6)@mail.mil	703-693-5446
JS J-34	MAJ (b)(6)	(b)(6)@mail.mil	703-614-7969
JS-NGRM	Lt Col (b)(6)	(b)(6)@mail.mil	703-571-9505
JS-NGRM	COL (b)(6)	(b)(6)@mail.mil	703-571-9504
<b>NGB</b>			
NG-J1	Mr. (b)(6)	(b)(6)@mail.mil	703-607-3652
NG-J1	Mr. (b)(6)	(b)(6)@us.army.mil	703-607-1476
NG-J1	Col (b)(6) (T32)	(b)(6)@mail.mil	703-607-5419
NG-J1-TN	Mr. (b)(6)	(b)(6)@mail.mil	703-601-2980
NG-J3	Col (b)(6)	(b)(6)@mail.mil	703-607-1724
NG-J3	Maj (b)(6)	(b)(6)@mail.mil	703-607-1803
NG-J3	Col (b)(6)	(b)(6)@mail.mil	703-607-7506
NG-J5	Mr. (b)(6)	(b)(6)@mail.mil	703-601-2674
NG-JA	COL (b)(6)	(b)(6)@us.army.mil	703-607-2697
NG-LL	Lt Col (b)(6)	(b)(6)@mail.mil	703-614-4798
NG-A1	Maj (b)(6)	(b)(6)@ang.af.mil	703-612-9138
NG-A3	Col (b)(6)	(b)(6)@ang.af.mil	240-612-9656
NG-A3	Mr. (b)(6)	(b)(6)@ang.af.mil	240-612-9304
NG-A3	Maj (b)(6)	(b)(6)@ang.af.mil	240-612-9874
NG-A5	Mr. (b)(6)	(b)(6)@ang.af.mil	703-612-9353



Organization	Name	E-Mail Address	Phone Number
<b>AFRC</b>			
HQ AFRC	Col (b)(6)	(b)(6)(b)(6)@us.af mil	DSN 497-1580
<b>MAFFS Airlift Wings</b>			
302nd AW (USAFR)	Lt Col (b)(6)	(b)(6)@us.af mil	DSN 834-6613
145 AW (NCNG)	Col (b)(6)	(b)(6)@ang.af mil	DSN 231-4956
145 AW (NCNG)	Lt Col (b)(6)	(b)(6)@ang.af.mil	704-398-4725
146 AW (CANG)	Lt Col (b)(6)	(b)(6)@ang.af mil	805-986-7790
153 AW (WYNG)	Col (b)(6)	(b)(6)@ang.af.mil	307-772-6153
153 AW (WYNG)	Lt Col (b)(6)	(b)(6)@ang.af mil	307-772-6320
153 AW (WYNG)	Maj (b)(6)	(b)(6)@ang.af.mil	DSN 388-6790
<b>USNORTHCOM</b>			
NORTHCOM J-1	Mr. (b)(6)	(b)(6)@northcom.mil	DSN 692-0833
NORTHCOM J-3	Mr. (b)(6)	(b)(6)@northcom.mil	DSN 692-9609
NORTHCOM J-3	Mr. (b)(6)	(b)(6)@northcom.mil	DSN 834-8227
NORTHCOM J-3	Mr. (b)(6)	(b)(6)@northcom.mil	719-554-7221
NORTHCOM J-5	LTC (b)(6)	(b)(6)@northcom.mil	DSN 834-8610
NORTHCOM J-5	Mr. (b)(6)	(b)(6)@northcom.mil	719-554-0767
<b>USNORTHCOM Washington Office</b>			
N-NC/WO	Mr. (b)(6)	(b)(6)@northcom.mil	703-697-2751
N-NC/WO	CDR (b)(6)	(b)(6)@northcom mil	703-695-4579
<b>AFNORTH</b>			
AFNORTH	Lt Col (b)(6)	(b)(6)@us.af mil	850-283-2625
AFNORTH	Maj (b)(6)	(b)(6)@tyndall.af.mil	850-283-0690
<b>USTRANSCOM/AMC</b>			
TRANSCOM J-3	Lt Col (b)(6)	(b)(6)@ustranscom.mil	DSN 770-7706
TRANSCOM J-3	LTC (b)(6)	(b)(6)@ustranscom mil	DSN 770-7706
TRANSCOM J-3	Lt Col (b)(6)	(b)(6)@ustranscom mil	DSN 770-7708
AMC/A3V	Lt Col (b)(6)	(b)(6)@us.af.mil	618-229-3665



## Appendix E, Senior Steering Group Members

Organization	Name
USD(P), Co-Chair	DASD Bob Salesses
Joint Staff J5, Co-Chair	Maj Gen Randy Kee Brig Gen Peter Gersten
USD(P&R)	Mr. Paul Patrick
OASD(RA)	Mr. Robert Smiley
OUSD(C)	Mr. Kevin Lannon
SAF/MRR	Mr. Bill Booth
AF/REX (AFR)	BG Kenneth Lewis
Joint Staff J34	Maj Gen Brian Neal
Joint Staff NG-RM	MG W. Scott Gorske
NGB J3	MG Gerry Ketchum
NGB J1	Mr. Kevin Crowley
ANG A3	Brig Gen Scott Williams
USNORTHCOM J3	Brig Gen Don McGregor
USNORTHCOM J5	BG Joseph Whitlock
USTRANSCOM	Brig Gen James Muscatell
NC NG	MG Gregory Lusk
CA NG	MG David Baldwin
WY NG	Brig Gen Harold Reed

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(b)(5), (b)(6)



(b)(5), (b)(6)

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(b)(5), (b)(6)

**From:** (b)(6) CIV NG NGB (US)  
**To:** (b)(6) CTR USAF NGB A5 (US)  
**Subject:** FW: [Non-DoD Source] IMAFFS IPT 17 Slides 09MAR2016  
**Date:** Tuesday, March 08, 2016 12:34:00 PM  
**Attachments:** [image003.png](#)  
[MAFFS PHII IPT 17 09MAR2016.pptx](#)  
[Copy of MAFFS PHII Action Item Log 01JAN2016.xlsx](#)

Slides referred to Army for Processing  
Excel sheet referred to Army as originator

(b)(6)

How would this normally happen? Assigning an ATTC POC to this project? Do I request this to AATC or some other means?

Pls advise.

(b)(6), GS-13, DAFC  
NGB/A5PA  
Program Lead, Agile Combat Support/Logistics Procurement  
DSN 612-8525  
COMM: 240-612-8525  
SIPR: (b)(6) @mail.smil.mil  
NIPR: (b)(6) @mail.mil

-----Original Message-----

**From:** (b)(6) Lt Col USAF NGB A5 (US)  
**Sent:** Tuesday, March 08, 2016 12:24 PM  
**To:** (b)(6) USAF NGB A5 (US); (b)(6) CIV NG NGB (US)  
**Subject:** FW: [Non-DoD Source] IMAFFS IPT 17 Slides 09MAR2016

Per chart 12 a test center POC still needs to be IDed, is that being worked?

Sincerely,

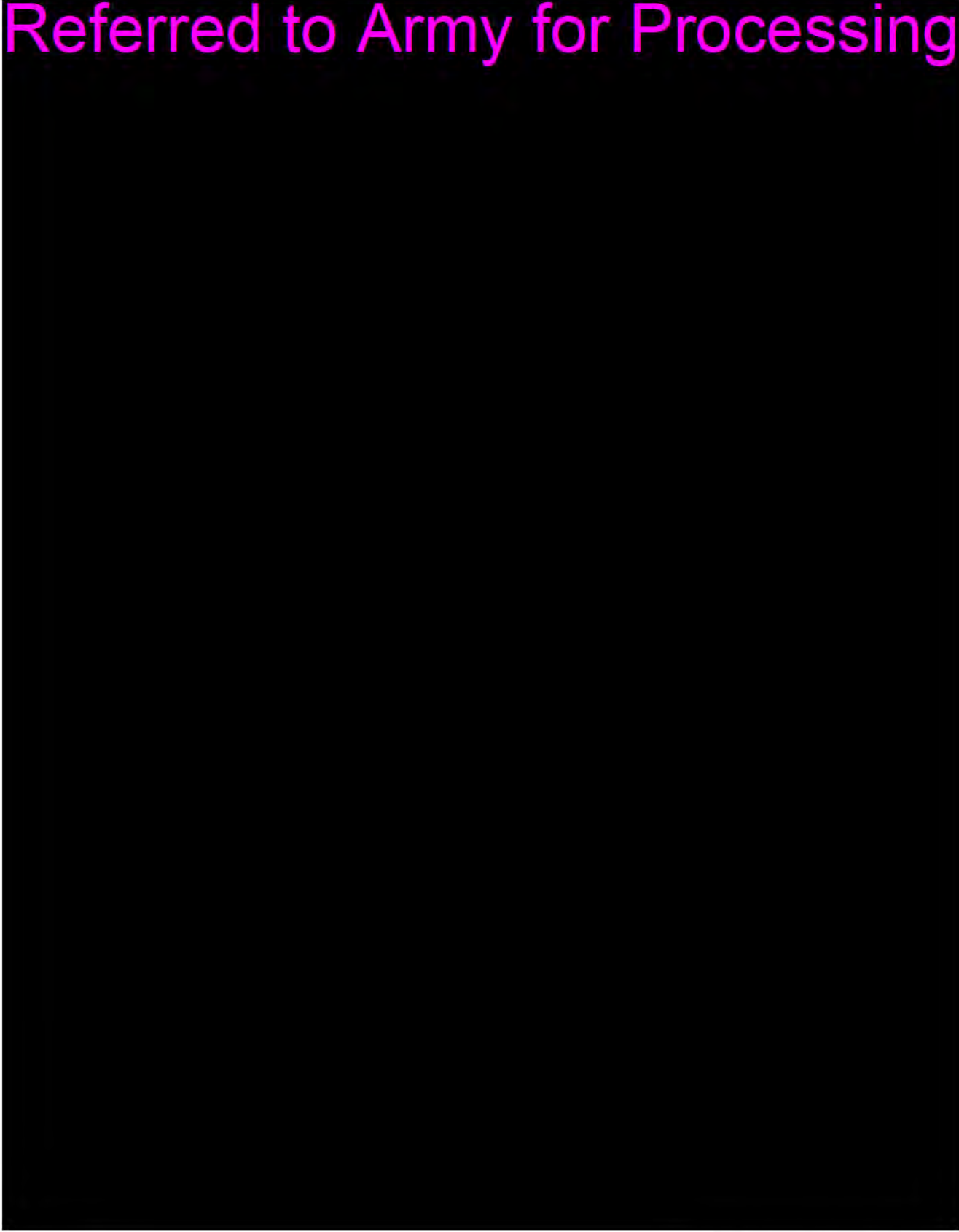
(b)(6)

(b)(6) Lt Col, USAF  
Chief, Agile Combat Support Programs Branch (NGB/A5PA)  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762  
DSN: 612-8697 COMM: 240-612-8697  
(b)(6) @mail.mil

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message without the approval of the originating office. If you received this message in error, please notify the sender by reply email and delete all copies of the message.

# Referred to Army for Processing



**From:** (b) (6) CIV NG NGB (US)  
**To:** (b) (6) CIV USAF NGB A5 (US)  
**Subject:** FW: MAFFS Phase II Kick-off Slides  
**Date:** Tuesday, August 18, 2015 6:39:33 AM  
**Attachments:** [image003.png](#)  
[MAFFS Phase II Kickoff Meeting 20150811.pdf](#)

---

(b) (6) DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
NIPR (b) (6) @mail mil  
SIPR (b) (6) @mail.smil mil

Referred to Army for Processing



**From:** (b) (6) CIV NG NGB (US)  
**To:** (b) (6) Lt Col USAF NGB A5 (US)  
**Subject:** FW: C-130H/J I-MAFFS Kickoff Brief (UNCLASSIFIED)  
**Date:** Thursday, September 17, 2015 10:31:38 AM  
**Attachments:** PIF-RDS IMAFFS Kickoff Brief (20 May 14)v3.pptx

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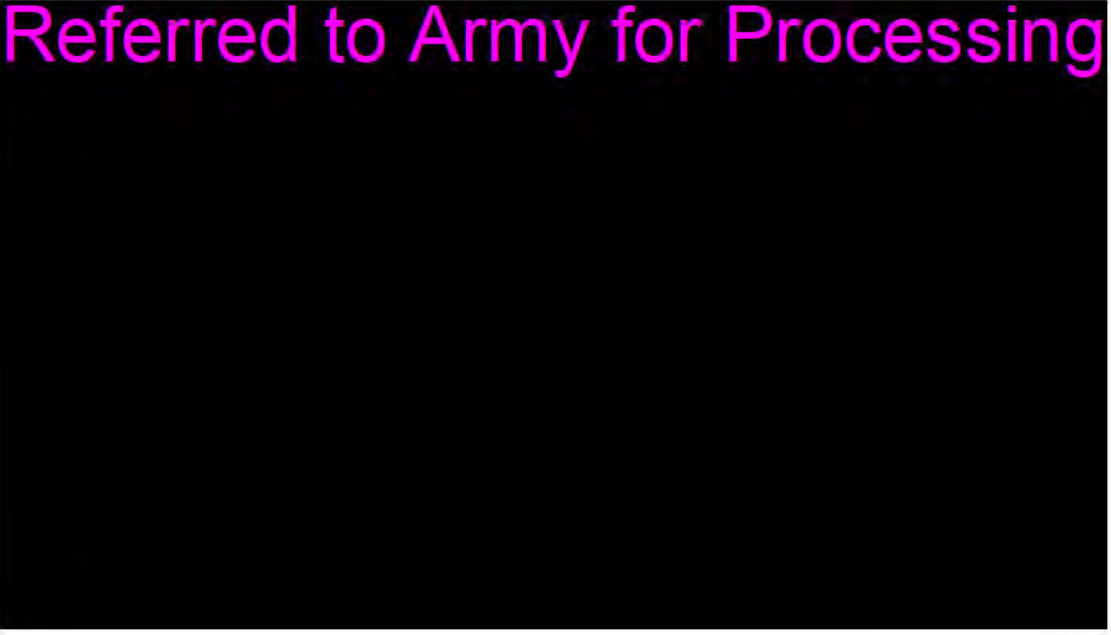
(b) (6) DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
NIPR (b) (6) @mail mil  
SIPR (b) (6) @mail.smil mil

-----Original Message-----

**From:** (b) (6) Civ USAF ANG NGB/A3M  
**Sent:** Friday, May 16, 2014 4:05 PM  
**To:** (b) (6) LtCol USAF ANG NGB/A5RM; Ballinger, Franklin F Civ  
USAF ANG NGB/A5  
**Subject:** Fw: C-130H/J I-MAFFS Kickoff Brief (UNCLASSIFIED)

(b) (6) GS  
NBG A3 MAFFS Program Manager  
ALCF/CRG FAM  
W 240-612-9304  
BE (b) (6)  
(b) (6) ang.af mil

Referred to Army for Processing





**From:** (b) (6) CIV NG NGB (US)  
**To:** (b) (6) Lt Col USAF NGB A5 (US)  
**Subject:** FW: C-130H/J I-MAFFS Kickoff Brief (UNCLASSIFIED)  
**Date:** Thursday, September 17, 2015 10:31:38 AM  
**Attachments:** PIF-RDS IMAFFS Kickoff Brief (20 May 14)v3.pptx Briefing referred to Army for processing as originator

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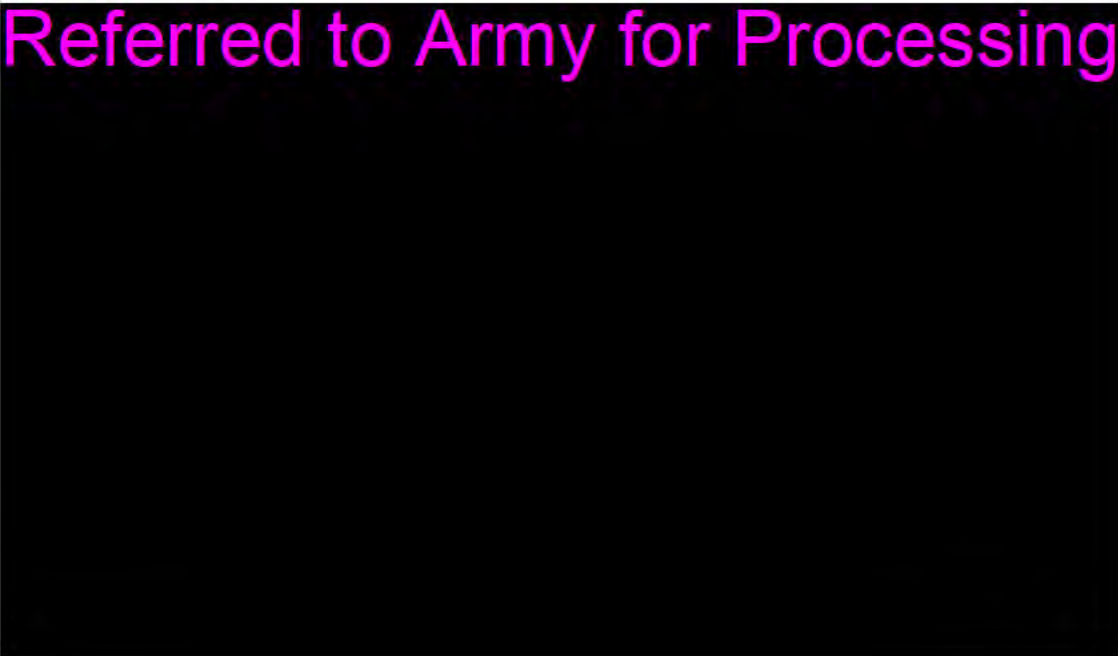
(b) (6) DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
NIPR (b) (6) @mail mil  
SIPR (b) (6) @mail.smil mil

-----Original Message-----

**From:** (b) (6) Civ USAF ANG NGB/A3M  
**Sent:** Friday, May 16, 2014 4:05 PM  
**To:** (b) (6) LtCol USAF ANG NGB/A5RM; Ballinger, Franklin F Civ  
USAF ANG NGB/A5  
**Subject:** Fw: C-130H/J I-MAFFS Kickoff Brief (UNCLASSIFIED)

(b) (6) GS  
NBG A3 MAFFS Program Manager  
ALCF/CRG FAM  
W 240-612-9304  
BE (b) (6)  
(b) (6) ang.af mil

Referred to Army for Processing



**From:** (b) (6) [CIV NG NGB \(US\)](#)  
**To:** (b) (6) [Lt Col USAF NGB A5 \(US\)](#)  
**Cc:** (b) (6) [CIV USAF NGB A5 \(US\)](#)  
**Subject:** FW: System Requirements Document (SRD) (UNCLASSIFIED)  
**Date:** Monday, November 02, 2015 7:23:24 AM  
**Attachments:** [SRD I-MAFFS 2015-10-28 final draft.docx](#)

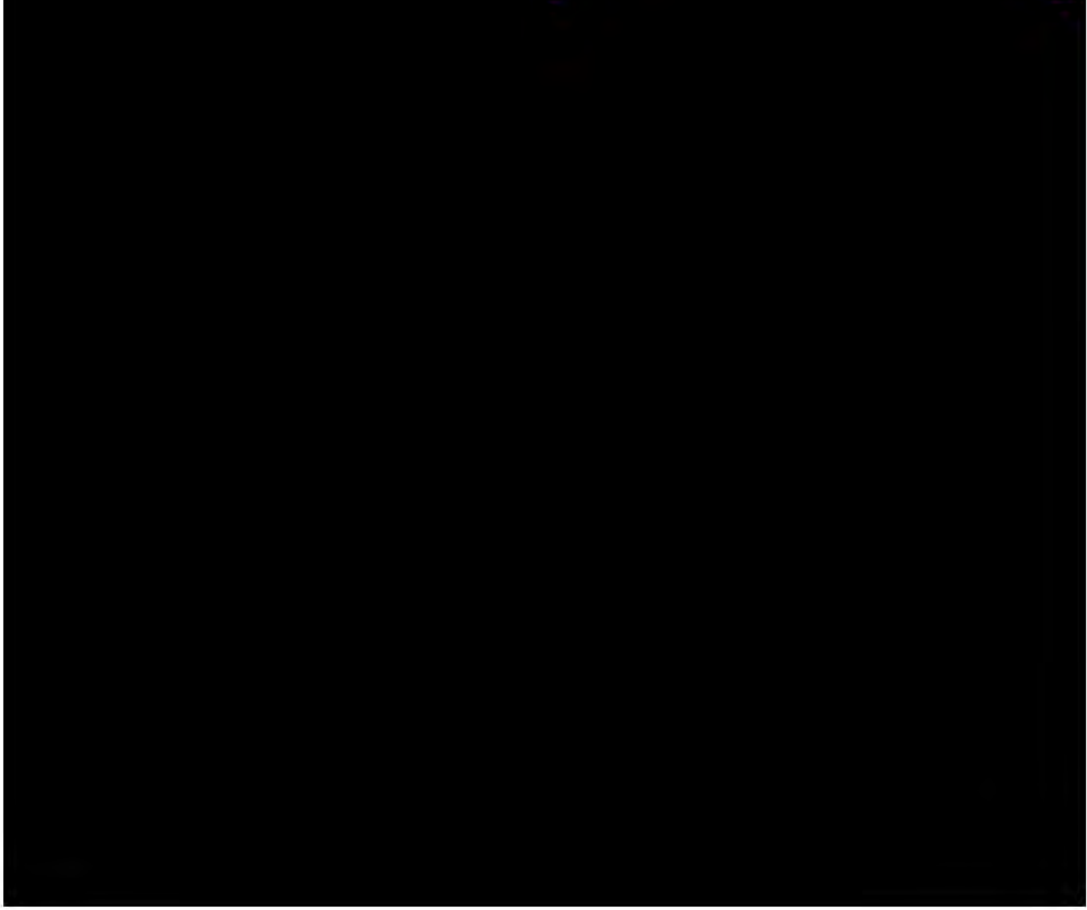
---

Sir,

Over to your expertise on this.

(b) (6), DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6)  
NIPR (b) (6) @mail mil  
SIPR (b) (6) @mail.smil mil

Referred to Army for Processing



# Referred to Army for Processing

From: (b) (6) CTR USAF NGB A5 (US)  
[mailto:(b) (6)@mail.mil]  
Sent: Friday, November 13, 2015 1:24 PM  
To: (b) (6) CIV (US); (b) (6) CIV (US)  
Subject: FW: AFRCREDNov15.pptx

(b) (6) and (b) (6),

Attached is a briefing we will get you and your folks when we come in Tuesday...

v/r  
(b) (6)

(b) (6), ANG  
AATC/DL  
Logistics Modernization Program Analyst  
(O) 573-636-2466  
(C) (b) (6)  
(b) (6)@mail.mil

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message without the approval of the originating office. If you received this message in error, please notify the sender by reply email and delete all copies of the message.

-----Original Message-----

From: (b) (6) Lt Col USAF (US)  
Sent: Friday, November 13, 2015 11:38 AM  
To: (b) (6) Lt Col USAF (US)  
Cc: (b) (6) CTR USAF NGB A5 (US)  
Subject: AFRCREDNov15.pptx

(b) (6)

Basic read ahead for next week. Some stuff may get updated as we meet with various actors next week but here are the basics.

Thanks,

CLASSIFICATION: UNCLASSIFIED

# Referred to Army for Processing

-----Original Message-----

From: (b) (6) Lt Col USAF NGB A5 (US) [mailto:(b) (6) mil@mail.mil]  
Sent: Friday, March 25, 2016 8:09 AM  
To: (b) (6) CIV (US) (b) (6) .civ@mail.mil>  
Cc: (b) (6) CIV NG NGB (US) (b) (6) .civ@mail.mil>  
Subject: RE: IMAFFS SRD and SRM Submittal

(b) (6)  
Please give (b) (6) access also.  
Sincerely,  
(b) (6)

(b) (6), Lt Col, USAF  
Chief, Agile Combat Support Programs Branch (NGB/A5PA)  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762  
DSN: 612-8697 COMM: 240-612-8697  
(b) (6) mil@mail.mil

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# Referred to Army for processing



**From:** (b) (6) CIV NG NGB (US)  
**To:** (b) (6) CTR USAF NGB A5 (US)  
**Subject:** FW: [Non-DoD Source] IMAFFS IPT 17 Slides 09MAR2016  
**Date:** Tuesday, March 08, 2016 12:34:00 PM  
**Attachments:** [image003.png](#)  
[MAFFS PHII IPT 17 09MAR2016.pptx](#)  
[Copy of MAFFS PHII Action Item Log 01JAN2016.xlsx](#)

Slides referred to Army for Processing  
Excel sheet referred to Army as originator

(b) (6)

How would this normally happen? Assigning an ATTC POC to this project? Do I request this to AATC or some other means?

Pls advise.

(b) (6), GS-13, DAFC  
NGB/A5PA  
Program Lead, Agile Combat Support/Logistics Procurement  
DSN 612-8525  
COMM: 240-612-8525  
SIPR: (b) (6) @mail.smil.mil  
NIPR: (b) (6) @mail.mil

-----Original Message-----

**From:** (b) (6) Lt Col USAF NGB A5 (US)  
**Sent:** Tuesday, March 08, 2016 12:24 PM  
**To:** (b) (6) USAF NGB A5 (US); (b) (6) CIV NG NGB (US)  
**Subject:** FW: [Non-DoD Source] IMAFFS IPT 17 Slides 09MAR2016

Per chart 12 a test center POC still needs to be IDed, is that being worked?

Sincerely,

(b) (6)

(b) (6) Lt Col, USAF  
Chief, Agile Combat Support Programs Branch (NGB/A5PA)  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762  
DSN: 612-8697 COMM: 240-612-8697  
(b) (6) @mail.mil

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message without the approval of the originating office. If you received this message in error, please notify the sender by reply email and delete all copies of the message.

# Referred to Army for Processing



**From:** (b) (6) CIV NG NGB (US)  
**To:** Lt Col USAF NGB A5 (US); (b) (6) CIV NG NGB (US)  
**Subject:** FW: [Non-DoD Source] IMAFFS Flight Test Telecom 20160725  
**Date:** Monday, July 25, 2016 11:44:18 AM  
**Attachments:** [image003.png](#)  
[IMAFFS Flight Test Telecom 20160722 \(002\).pptx](#) Slides referred to Army for processing

---

Sir,

I have a 1300 meeting today and I plan on giving the go ahead to (b) (6). This is not the trailer the MAFFS unit itself sets on, only a storage unit for the pintel.

(b) (6)

(b) (6) DAF, GS12

NGB Modular Airborne Fire Fighting System Program Manager

NGB Contingency Response Group FAM

NGB Air Lift Control Flight FAM

3500 Fetchet Ave

Joint Base Andrews, MD 20762-5157

Comm 240 612 9304

DSN 612 9304

iPhone (b) (6)

NIPR (b) (6) @mail mil <[mailto:\(b\) \(6\) @mail.mil](mailto:(b) (6) @mail.mil)>

SIPR (b) (6) @mail.smil mil <[mailto:\(b\) \(6\) @mail.smil.mil](mailto:(b) (6) @mail.smil.mil)>

SHAREPOINT: <https://gkoportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Home.aspx>  
<<https://gkoportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Home.aspx>>

# Referred to Army for Processing



**From:** (b) (6) [Civ USAF ANG NGB/A3M](#)  
**To:** (b) (6) [Civ USAF ANG NGB/ASD](#)  
**Subject:** FW: IMAFFS Program Items & Phase 1 TIM Report (UNCLASSIFIED)  
**Date:** Monday, December 08, 2014 12:44:11 PM  
**Attachments:** [RDS\\_PIF02\\_D0295\\_A085\\_TS\\_20141125zz.pdf](#)

---

Not sure if I sent this one.

This 51 page document "Project CDRL Cover Letter" and "C-130H/J Improved Modular Airborne Fire Fighting System (I-MAFFS Phase II Program Requirements Trade Study, 25 Nov 14) was referred to the Army for processing.

(b) (6), NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL (b) (6) @ang.af mil  
SIPR:

Referred to Dept of the Army for Processing



**From:** (b) (6) CIV NG NGB (US)  
**To:** Lt Col USAF NGB A5 (US); (b) (6) Maj USAF NG NGB (US); (b) (6) CIV NG NGB (US)  
**Subject:** FW: iMAFFS - Draft Documents  
**Date:** Monday, June 05, 2017 8:17:15 AM  
**Attachments:** TEMP iMAFFS.DOCX  
AFMC LDTO Designation Form - iMAFFS.DOCX Documents referred to Army for processing

---

I will not be on the call today.

All,

We have set up this meeting to include the CTA and the ANG PM. I have requested a bridge line for the meeting.

The conference call-in number is:

DSN 497-9370

COMM 478-327-9370

Your pin number is: 262-1068

V/R,

(b) (6)

Project Manager (ILG)

AFLCMC/WLNCC

235 Byron Street

Robins AFB, GA 31098

Com: 478-926-3404

Fax: 478-926-0970

(b) (6), DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6)  
NIPR (b) (6) mail mil  
SIPR (b) (6) mail.smil mil  
SHAREPOINT:  
<https://gkoportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Home.aspx>

**From:** (b) (6) [Civ USAF ANG NGB/A3M](#)  
**To:** (b) (6) [Civ USAF ANG NGB/ASD](#)  
**Subject:** FW: IMAFFS Phase II SOW (UNCLASSIFIED)  
**Date:** Monday, December 08, 2014 12:51:41 PM  
**Attachments:** [C-130 Improved MAFFS PHASE II NGB Final.docx](#)

---

Army

(b) (6), NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR:

Referred to Army for Processing

**From:** (b) (6) (b) (6) CIV NG NGB (US)  
**To:** (b) (6) W Col USAF NGB A5 (US)  
**Subject:** FW: [Non-DoD Source] Re: resend  
**Date:** Thursday, February 09, 2017 1:14:25 PM

---

Part 2

(b) (6) (6) DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6) (b) (6)  
NIPR (b) (6) (6) @mail.mil  
SIPR (b) (6) (6) @mail.smil.mil  
SHAREPOINT: <https://gkoportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Home.aspx>

## Referred to US Forest Service



> On Feb 9, 2017, at 09:58, (b) (6) (b) (6) CIV NG NGB (US) <(b) (6) (b) (6) @mail.mil> wrote:  
>  
> I would guess this is the lawyer for the company that bought MAFFS data.  
>  
> (b) (6) (6) DAF, GS12  
> NGB Modular Airborne Fire Fighting System Program Manager NGB  
> Contingency Response Group FAM NGB Air Lift Control Flight FAM  
> 3500 Fetchet Ave  
> Joint Base Andrews, MD 20762-5157  
> Comm 240 612 9304  
> DSN 612 9304  
> iPhone (b) (6) (b) (6)  
> NIPR (b) (6) (6) @mail.mil  
> SIPR (b) (6) (6) @mail.smil.mil

> SHAREPOINT:

> Caution-<https://gkoportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Cau>

> tion-Home.aspx

>

>

>

>

Referred to US Forest Service





**From:** (b) (6) (b) (6) [Civ USAF ANG NGB/A3M](#)  
**To:** (b) (6) [Civ USAF ANG NGB/ASD](#)  
**Subject:** FW: C-130 I MAFFS TIM Presentation  
**Date:** Wednesday, December 17, 2014 10:37:35 AM  
**Attachments:** [image001.png](#)

---

(b) (6) (b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6) (b) (6)  
EMAIL: (b) (6) (b) (6) ang.af mil  
SIPR:

Referred to US Forest Service



**From:** (b) (6) (b) (6) Civ USAF ANG NGB/A3M  
**To:** (b) (6) Civ USAF ANG NGB/ASD  
**Subject:** FW: Legal Rights to MAFFS  
**Date:** Thursday, December 18, 2014 2:53:22 PM  
**Attachments:** [Mod 24 and data page.pdf](#)  
[Data Rights Letter Nov 30, 2012.docx](#)

---

(b) (6) (b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR:

Referred to US Forest Service



**From:** (b) (6) (b) (6) Civ USAF ANG NGB/A3M  
**To:** (b) (6) Civ USAF ANG NGB/A5D; (b) (6) LtCol USAF ANG NGB/A5D  
**Cc:** (b) (6) Civ USAF ANG NGB/A5X  
**Subject:** FW: Legal Rights to MAFFS  
**Date:** Wednesday, December 17, 2014 8:46:07 AM  
**Attachments:** [RE Legal Rights to MAFFS \(8.62 KB\).msg](#)  
[RE Support for MAFFS \(554 KB\).msg](#)

---

Here is what I have. Recommend (b) (6) call (b) (6) in Boise Office.

(b) (6) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR:

-----Original Message-----

**From:** (b) (6) (b) (6) Civ USAF ANG NGB/A3M  
**Sent:** Tuesday, December 02, 2014 1:23 PM  
**To:** (b) (6) ogc.usda.gov'; (b) (6) fs.fed.us'  
**Subject:** Re: Legal Rights to MAFFS

No Ma'am I do not. I can have it sent if you need or want it.

(b) (6)

(b) (6) GS  
NGB A3 MAFFS Program Manager  
ALCF/CRG FAM  
W 240-612-9304  
BB (b) (6)  
(b) (6) ang.af mil

Referred to US Forest Service





Processed by US Forest Service

-----Original Message-----

From: (b) (6) Civ USAF ANG NGB/A3M

[mailto:(b) (6) ang.af.mil]

Sent: Wednesday, November 26, 2014 4:28 AM

To: (b) (6) W -FS (b) (6) - OGC

Subject: RE: Legal Rights to MAFFS

Good morning,

We have not signed any agreements for phase two yet. I have not transferred any funding either.

(b) (6),

Do you know if contracting in Boise ever found appendix 19?

(b) (6)

(b) (6) NGB/A3

NGB Modular Airborne Fire Fighting System Program Manager NGB CRG/ALCF FAM

3500 Fetchet Ave

Joint Base Andrews, MD 20762-5157

240.612.9304

DSN 612-9304

BB (b) (6)

EMAIL: (b) (6) ang.af.mil

SIPR:

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Sent: Wednesday, November 26, 2014 7:28 AM  
To: (b) (6) -FS (b) (6) - OGC  
Subject: RE: Legal Rights to MAFFS

Good morning,

We have not signed any agreements for phase two yet. I have not transferred any funding either.

(b) (6),

Do you know if contracting in Boise ever found appendix 19?

(b) (6)

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR:

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**From:** (b) (6) Civ USAF ANG NGB/A3M  
**To:** Ballinger, Franklin F Civ USAF ANG NGB/A5  
**Cc:** (b) (6) Civ USAF ANG NGB/A5X  
**Subject:** RE: Support for MAFFS  
**Date:** Thursday, November 06, 2014 9:04:27 AM  
**Attachments:** [data rights \(547 KB\).msg](#)

---

I am looking for support with this. I have sent to the FS for their input as well. I am confirming with Mike Hanke that he sent the funding yesterday.

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6)  
SIPR:

-----Original Message-----

**From:** (b) (6) Civ USAF ANG NGB/A5  
**Sent:** Thursday, November 06, 2014 8:18 AM  
**To:** (b) (6) (b) (6) Civ USAF ANG NGB/A3M  
**Cc:** (b) (6) Civ USAF ANG NGB/A5X  
**Subject:** Support for MAFFS

(b) (6)

Can you give us a list of the current POCs for the acquisition of the new MAFFS system? We're trying to provide more robust support for the effort.

(b) (6) GS-15, DAF  
Associate Director, Plans and Requirements, NGB/A5  
(b) (6) @af.smil.mil  
240-612-9351 (DSN 612-9351)  
(b) (6) (cell)

**From:** (b) (6) (b) (6) Civ USAF ANG NGB/A3M  
**To:** (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** FW: MAFFS Contract Information  
**Date:** Friday, January 09, 2015 9:14:42 AM

---

FYI

(b) (6) (b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6)  
SIPR:

Processed by US Forest Service



-----Original Message-----

**From:** (b) (6) Civ USAF ANG NGB/A3M [[mailto:\(b\) \(6\)@ang.af.mil](mailto:(b) (6)@ang.af.mil)]  
**Sent:** Friday, January 09, 2015 9:09 AM  
**To:** Linse, Paul -FS  
**Subject:** FW: MAFFS Contract Information

Wanted to make sure you guys are good with this plan. I am told Kim is out of the country. If you can have him look or if can approve we send the funding down to the PIF.

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304



DSN 612-9304  
BB: (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR:

-----Original Message-----

From: (b) (6) Civ USAF ANG NGB/A5D  
Sent: Friday, January 09, 2015 8:57 AM  
To: (b) (6) Civ USAF ANG NGB/A3M  
Subject: FW: MAFFS Contract Information

FYI...

What I sent to (b) (6) ...Didn't hit reply all by mistake.

V/r

(b) (6)

ANDREW KRUSE, GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525  
Cell: (b) (6)  
BB: (b) (6)

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-----Original Message-----

From: (b) (6) Civ USAF ANG NGB/A5D  
Sent: Friday, January 09, 2015 8:45 AM  
To: 'Mike'  
Subject: RE: MAFFS Contract Information

Sir,

FS sent a letter to the bank along with the signed contract where Aero Union was to delivery not only the drawings, but also agreed that Aero Union would provide the information necessary for the FS to build or contract to build additional MAFFS. The legal folks reviewing the contract believe the FS is within their rights to build the prototypes.

Additionally, I have verified that the plan is to build prototypes and once proven satisfactory for the application, a contract will be awarded to industry for additional MAFFS using the new level 3 drawings developed from the prototypes.

V/r

(b) (6)

(b) (6) GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525

Cell: (b) (6)  
BB: (b) (6)

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USE ONLY (FOUO) information that must be protected under the Privacy Act of 1974 (see AFI 33-332). Do not release outside of DoD channels without the consent of the originator's office. If you received this message in error, please notify the sender by reply e-mail and delete all copies of message.

-----Original Message-----

From: Mike [<mailto:mike@pcg-usa.net>]

Sent: Thursday, January 08, 2015 3:54 PM

To: Hillestadandassociates

Cc: (b) (6) Civ USAF ANG NGB/A5D; (b) (6) Civ USAF ANG NGB/A3M

Subject: Re: MAFFS Contract Information

(b) (6) MAFFS corp is preparing a response

Will know tomorrow but believe the jist will be that aero Union never provided the drawings to the FS.

The bank that took all the ip into receivership told the FS to show proof of ownership if they wanted it. They did not.

MAFFS corp bought from the bank and was legally not liable to deliver something that aero Union did not deliver.

Para 12.5 doesn't talk about ip ownership only about delivery.

Really think maff corp and forest service need to talk.

Thoughts ?

Mike

Sent from my iPhone

> On Jan 6, 2015, at 2:48 PM, Hillestadandassociates <[hillestadandassociates@comcast.net](mailto:hillestadandassociates@comcast.net)> wrote:

>

> Thanks (b) (6) I have sent this to the MAFFS corp guys for their take.

>

> Mike

>

> Sent from my iPhone

>

>> On Jan 6, 2015, at 2:05 PM, (b) (6) Civ USAF ANG NGB/A5D <(b) (6)@ang.af.mil> wrote:

>>

>> Sir,

>>

>> In the attached modification 24 dated July 3, 2006 to contract

>> 54-024B-1-2159, dated April 10, 2000, you will find where Aero Union

>> agreed to provide the data rights so the FS could build or have

>> another vendor build the MAFFS. As it is Redstone arsenal is

>> modifying the original data to incorporate new requirements. I

>> assume that once the prototype is built and tested (proved viable)

>> that a contract will be let to have a vendor build replicas for the

>> FS. Also the original contract required Aero Union to provide level

>> 2 drawings to FS (I believe section I or H of the completed original

>> contract). These drawings are everything except the manufacturing procedures and materials consumed in the



manufacturing process.

>>

>> Bottom line: I believe the gov't is following a legal path for  
>> development of a prototype. I will ask some questions tomorrow of  
>> the key players about follow on actions after the first prototype is developed.  
>> Such as: 1. Will the government contract with industry to build the MAFFS?

>>

>> V/r

>> (b) (6)

>>

>> (b) (6), GS-13, DAF

>> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

>> DSN: 612-8525

>> Com: (240) 612-8525

>> Cell: (b) (6)

>> BB: (b) (6)

>>

>> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR

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>> Act of

>> 1974 (see AFI 33-332). Do not release outside of DoD channels

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>> message in error, please notify the sender by reply e-mail and delete all copies of message.

>>

Processed by US Forest Service

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>>

>> Begin forwarded message:

>>

>> From: "(b) (6) (b) (6)" Civ USAF ANG NGB/A3M"

>> (b) (6)

>> Date: December 18, 2014 at 9:19:11 AM MST

>> To: "(b) (6)" Civ USAF ANG NGB/A5D"

>> (b) (6) @ang.af.mil>, "(b) (6) @FS.FED.US" <(b) (6) @FS.FED.US>

>> Cc: "(b) (6)" CIV USARMY AMRDEC (US)"

>> (b) (6) @mail.mil>

>> Subject: RE: MAFFS Contract Information

>>

>> (b) (6)

>>

>> I echo what (b) (6) said. This is great news.

>>

>> (b) (6)

>>

>>

>> (b) (6) NGB/A3

>> NGB Modular Airborne Fire Fighting System Program Manager

>> NGB CRG/ALCF FAM

>> 3500 Fetchet Ave

>> Joint Base Andrews, MD 20762-5157

>> 240.612.9304

>> DSN 612-9304

>> BB (b) (6)

>> EMAIL: (b) (6)

>> SIPR:

>>

>>

>> -----Original Message-----

>> From: (b) (6) Civ USAF ANG NGB/A5D

>> Sent: Thursday, December 18, 2014 11:17 AM

>> To: (b) (6) @FS.FED.US

>> Cc: (b) (6) (b) (6) Civ USAF ANG NGB/A3M; (b) (6) CIV

>> USARMY AMRDEC (US)  
>> Subject: MAFFS Contract Information  
>>  
>> (b) (6)  
>>  
>> It was great talking with you today. I really appreciate that you  
>> may have the information already packaged ready to go that will  
>> enable the ANG to proceed with procurement of the two prototype MAFFS  
>> systems for the Forest Service.  
>>  
>> Specifically we are looking for modifications 19 - 23 to contract  
>> 54-024B-1-2159. We believe these mods provide the data rights to the  
>> MAFFS from Aero Union Corporation to the government.  
>>  
>> Thanks so much, and have a very merry Christmas and a Happy New  
>> Year!  
>>  
>> V/r  
>> (b) (6)  
>>  
>> (b) (6), GS-13, DAF  
>> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
>> DSN: 612-8525  
>> Com: (240) 612-8525  
>> Cell: (b) (6)  
>> BB: (b) (6)  
>>  
>> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR  
>> OFFICIAL  
>>  
>> USE ONLY (FOUO) information that must be protected under the  
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>> message in error, please notify the sender by reply e-mail and delete  
>> all copies of message.  
>>  
>>  
>>  
>>  
>>  
>> This electronic message contains information generated by the USDA  
>> solely for the intended recipients. Any unauthorized interception of  
>> this message or the use or disclosure of the information it contains  
>> may violate the law and subject the violator to civil or criminal  
>> penalties. If you believe you have received this message in error,  
>> please notify the sender and delete the email immediately.  
>> <Mod 24 and data page.pdf>  
>> <1-2159\_Aero\_Union\_AFFS\_Complete\_Contract\_2.pdf>

**From:** (b) (6) Civ USAF ANG NGB/A3M  
**To:** (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** FW: MAFFS Contract Information  
**Date:** Friday, January 09, 2015 9:14:42 AM

---

FYI

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR:

Processed by US Forest Service



-----Original Message-----

**From:** (b) (6) Civ USAF ANG NGB/A3M [mailto:(b) (6) ang.af mil]  
**Sent:** Friday, January 09, 2015 9:09 AM  
**To:** (b) (6) -FS  
**Subject:** FW: MAFFS Contract Information

Wanted to make sure you guys are good with this plan. I am told (b) (6) is out of the country. If you can have him look or if can approve we send the funding down to the PIF.

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304

DSN 612-9304

BB: (b) (6)

EMAIL: (b) (6)

SIPR:

-----Original Message-----

From: (b) (6) Civ USAF ANG NGB/A5D

Sent: Friday, January 09, 2015 8:57 AM

To: (b) (6) (b) (6) Civ USAF ANG NGB/A3M

Subject: FW: MAFFS Contract Information

FYI...

What I sent to Mike...Didn't hit reply all by mistake.

V/r

(b) (6)

(b) (6), GS-13, DAF

Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

DSN: 612-8525

Com: (240) 612-8525

Cell: (b) (6)

BB: (b) (6)

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-----Original Message-----

From: (b) (6) Civ USAF ANG NGB/A5D

Sent: Friday, January 09, 2015 8:45 AM

To: 'Mike'

Subject: RE: MAFFS Contract Information

Sir,

FS sent a letter to the bank along with the signed contract where Aero Union was to delivery not only the drawings, but also agreed that Aero Union would provide the information necessary for the FS to build or contract to build additional MAFFS. The legal folks reviewing the contract believe the FS is within their rights to build the prototypes.

Additionally, I have verified that the plan is to build prototypes and once proven satisfactory for the application, a contract will be awarded to industry for additional MAFFS using the new level 3 drawings developed from the prototypes.

V/r

(b) (6)

(b) (6), GS-13, DAF

Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

DSN: 612-8525

Com: (240) 612-8525



Cell: (b) (6)  
BB: (b) (6)

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-----Original Message-----

From: Mike [mailto:mike@pcg-usa.net]  
Sent: Thursday, January 08, 2015 3:54 PM  
To: Hillestadandassociates  
Cc: (b) (6) Civ USAF ANG NGB/A5D; (b) (6) Civ USAF ANG NGB/A3M  
Subject: Re: MAFFS Contract Information

(b) (6) MAFFS corp is preparing a response

Will know tomorrow but believe the jist will be that aero Union never provided the drawings to the FS.

The bank that took all the ip into receivership told the FS to show proof of ownership if they wanted it. They did not.

MAFFS corp bought from the bank and was legally not liable to deliver something that aero Union did not deliver.

Para 12.5 doesn't talk about ip ownership only about delivery.

Really think maff corp and forest service need to talk.

Thoughts ?

Mike

Sent from my iPhone

> On Jan 6, 2015, at 2:48 PM, Hillestadandassociates <hillestadandassociates@comcast.net> wrote:

>

> Thanks (b) (6) I have sent this to the MAFFS corp guys for their take.

>

> Mike

>

> Sent from my iPhone

>

>> On Jan 6, 2015, at 2:05 PM, (b) (6) Civ USAF ANG NGB/A5D (b) (6) @ang.af.mil> wrote:

>>

>> Sir,

>>

>> In the attached modification 24 dated July 3, 2006 to contract

>> 54-024B-1-2159, dated April 10, 2000, you will find where Aero Union

>> agreed to provide the data rights so the FS could build or have

>> another vendor build the MAFFS. As it is Redstone arsenal is

>> modifying the original data to incorporate new requirements. I

>> assume that once the prototype is built and tested (proved viable)

>> that a contract will be let to have a vendor build replicas for the

>> FS. Also the original contract required Aero Union to provide level

>> 2 drawings to FS (I believe section I or H of the completed original

>> contract). These drawings are everything except the manufacturing procedures and materials consumed in the

manufacturing process.

>>

>> Bottom line: I believe the gov't is following a legal path for  
>> development of a prototype. I will ask some questions tomorrow of  
>> the key players about follow on actions after the first prototype is developed.  
>> Such as: 1. Will the government contract with industry to build the MAFFS?

>>

>> V/r

>> (b) (6)

>>

>> (b) (6), GS-13, DAF

>> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P

>> DSN: 612-8525

>> Com: (240) 612-8525

>> Cell: (b) (6)

>> BB: (b) (6)

>>

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>> Act of

>> 1974 (see AFI 33-332). Do not release outside of DoD channels

>> without the consent of the originator's office. If you received this

>> message in error, please notify the sender by reply e-mail and delete all copies of message.

>>

>>

Referred to US Forest Service

## Referred to US Forest Service

>>

>> Begin forwarded message:

>>

>> From: "(b) (6) (b) (6) Civ USAF ANG NGB/A3M"

>> (b) (6)

>> Date: December 18, 2014 at 9:19:11 AM MST

>> To: "(b) (6) Civ USAF ANG NGB/A5D"

>> (b) (6) @ang.af.mil>, (b) (6) @FS.FED.US" (b) (6) @FS.FED.US>

>> Cc: (b) (6) S CIV USARMY AMRDEC (US)"

>> (b) (6) civ@mail.mil>

>> Subject: RE: MAFFS Contract Information

>>

>> (b) (6)

>>

>> I echo what (b) (6) said. This is great news.

>>

>> (b) (6)

>>

>>

>>

>> (b) (6) NGB/A3

>> NGB Modular Airborne Fire Fighting System Program Manager

>> NGB CRG/ALCF FAM

>> 3500 Fetchet Ave

>> Joint Base Andrews, MD 20762-5157

>> 240.612.9304

>> DSN 612-9304

>> BB (b) (6)

>> EMAIL: (b) (6)

>> SIPR:

>>

>>

>> -----Original Message-----

>> From: (b) (6) Civ USAF ANG NGB/A5D

>> Sent: Thursday, December 18, 2014 11:17 AM

>> To: (b) (6) @FS.FED.US

>> Cc: (b) (6) (b) (6) Civ USAF ANG NGB/A3M; (b) (6) CIV

>> USARMY AMRDEC (US)  
>> Subject: MAFFS Contract Information  
>>  
>> (b) (6)  
>>  
>> It was great talking with you today. I really appreciate that you  
>> may have the information already packaged ready to go that will  
>> enable the ANG to proceed with procurement of the two prototype MAFFS  
>> systems for the Forest Service.  
>>  
>> Specifically we are looking for modifications 19 - 23 to contract  
>> 54-024B-1-2159. We believe these mods provide the data rights to the  
>> MAFFS from Aero Union Corporation to the government.  
>>  
>> Thanks so much, and have a very merry Christmas and a Happy New  
>> Year!  
>>  
>> V/r  
>> (b) (6)  
>>  
>> (b) (6), GS-13, DAF  
>> Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
>> DSN: 612-8525  
>> Com: (240) 612-8525  
>> Cell: (b) (6)  
>> BB: (b) (6)  
>>  
>> PRIVACY ACT STATEMENT: This electronic transmission may contain FOR  
>> OFFICIAL  
>>  
>> USE ONLY (FOUO) information that must be protected under the  
>> Privacy Act of  
>> 1974 (see AFI 33-332). Do not release outside of DoD channels  
>> without the consent of the originator's office. If you received this  
>> message in error, please notify the sender by reply e-mail and delete  
>> all copies of message.  
>>  
>>  
>>  
>>  
>>  
>> This electronic message contains information generated by the USDA  
>> solely for the intended recipients. Any unauthorized interception of  
>> this message or the use or disclosure of the information it contains  
>> may violate the law and subject the violator to civil or criminal  
>> penalties. If you believe you have received this message in error,  
>> please notify the sender and delete the email immediately.  
>> <Mod 24 and data page.pdf>  
>> <1-2159\_Aero\_Union\_AFFS\_Complete\_Contract\_2.pdf>



Referred to US Forest Service



## Referred to US Forest Service

Begin forwarded message:

From: "(b) (6) (b) (6) Civ USAF ANG NGB/A3M" <(b) (6) ang.af.mil  
<[mailto:\(b\) \(6\) ang.af.mil](mailto:(b) (6) ang.af.mil)>>  
Date: December 18, 2014 at 9:19:11 AM MST  
To: "(b) (6) Civ USAF ANG NGB/A5D" (b) (6) @ang.af.mil  
<[mailto:\(b\) \(6\) @ang.af.mil](mailto:(b) (6) @ang.af.mil)>, (b) (6) @FS.FED.US <[mailto:\(b\) \(6\) @FS.FED.US](mailto:(b) (6) @FS.FED.US)> "  
<(b) (6) @FS.FED.US <[mailto:\(b\) \(6\) @FS.FED.US](mailto:(b) (6) @FS.FED.US)>>

Cc: (b) (6) CIV USARMY AMRDEC (US)" (b) (6) @mail.mil  
<[mailto:\(b\) \(6\) @mail.mil](mailto:(b) (6) @mail.mil)> >  
Subject: RE: MAFFS Contract Information

(b) (6)

I echo what (b) (6) said. This is great news.

(b) (6)

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB: (b) (6)  
EMAIL: (b) (6) ang.af.mil <[mailto:\(b\) \(6\) ang.af.mil](mailto:(b) (6) ang.af.mil)>  
SIPR:

-----Original Message-----

From: (b) (6) Civ USAF ANG NGB/A5D  
Sent: Thursday, December 18, 2014 11:17 AM  
To: (b) (6) @FS.FED.US <[mailto:\(b\) \(6\) @FS.FED.US](mailto:(b) (6) @FS.FED.US)>  
Cc: (b) (6) (b) (6) Civ USAF ANG NGB/A3M; (b) (6) CIV USARMY AMRDEC (US)  
Subject: MAFFS Contract Information

(b) (6)

It was great talking with you today. I really appreciate that you may have the information already packaged ready to go that will enable the ANG to proceed with procurement of the two prototype MAFFS systems for the Forest Service.

Specifically we are looking for modifications 19 - 23 to contract 54-024B-1-2159. We believe these mods provide the data rights to the MAFFS from Aero Union Corporation to the government.

Thanks so much, and have a very merry Christmas and a Happy New Year!

V/r

(b) (6)

(b) (6) GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525  
Cell: (b) (6)  
BB: (b) (6)

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**From:** (b) (6) Civ USAF ANG NGB/A3M  
**To:** (b) (6) Civ USAF ANG NGB/A5X; (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** FW: MAFFS Data Rights: AFFS Documents (UNCLASSIFIED)  
**Date:** Thursday, December 18, 2014 11:16:28 AM  
**Attachments:** 0965 001.pdf  
AFFS Drawing Statement.rtf

---

(b) (6)

Here is some documentation on the data rights.

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR:

-----Original Message-----

**From:** (b) (6) CIV (US) [mailto:(b) (6)@mail.mil]  
**Sent:** Thursday, December 18, 2014 11:13 AM  
**To:** (b) (6) (b) (6) Civ USAF ANG NGB/A3M; (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** MAFFS Data Rights: AFFS Documents (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

(b) (6)(b) (6)

Reference today's call, attached are the mod documents that we are referring to that give the government data rights to build and maintain the MAFFS. Next I will send you the requested wording on the Economy Act. Thanks.

(b) (6)

**From:** (b) (6) CIV (US) [mailto:(b) (6)@mail.mil]  
**Sent:** Wednesday, May 28, 2014 3:39 PM  
**To:** (b) (6)  
**Cc:** (b) (6) CIV (US); (b) (6) CIV (US)  
**Subject:** FW: AFFS Documents (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

(b) (6),

See attached reference USFS data rights to utilize Aero Union



drawings. Contract No. 54-024B-1-2159, Modification 1 notes " Technical Data is modified as follows; Aero Union agrees to the shared ownership of all manufacturing data rights to the Airborne Fire Fighting System and to transfer to the government all related manufacturing data sufficient to build and maintain the Airborne Fire Fighting System in the event Aero Union defaults under its obligations under this contract."

Hopefully, the attached will provide sufficient government rights to utilize the Aero Union drawings/data. And for further questions or clarification we can contact the contracting officer noted below. Thanks.

(b) (6)

Referred to US Forest Service

**From:** (b) (6) Civ USAF ANG NGB/A3M  
**To:** (b) (6) Civ USAF ANG NGB/A5D; (b) (6) @FS.FED.US  
**Subject:** FW: MAFFS II contract  
**Date:** Tuesday, January 06, 2015 12:40:30 PM  
**Attachments:** [1-2159 Aero Union AFFS Complete Contract 2.pdf](#)

---

This is what I found in my files so far.

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR:

-----Original Message-----

**From:** (b) (6) CTR USAF ANG NGB/A5RM  
**Sent:** Monday, October 31, 2011 12:45 PM  
**To:** (b) (6) (b) (6) Civ USAF ANG NGB/A3D  
**Cc:** Morgan, (b) (6) C LtCol USAF ANG NGB/A5  
**Subject:** FW: MAFFS II contract

Attached is the basic contract (no mods included) for the MAFFS system. It only specifies Level 2 drawings (specifically excludes Level 3 requirements). However, there were quite a few contract modifications awarded. We may have for consideration (due to lack of performance) changed it to a Level 3 package. Also, it specifies that the drawings should be sent to Boise so if anything was delivered they may have the basic drawing package on site.

Thanks,

(b) (6)

(b) (6)  
LC-130 Modernization Manager (SRG)  
NGB/A5RM  
240-612-9361, DSN 612-9361  
Cell (b) (6)  
(b) (6) @ang.af.mil

-----Original Message-----

**From:** (b) (6) LtCol USAF ANG NGB/A5  
**Sent:** Tuesday, March 08, 2011 8:24 AM  
**To:** (b) (6) CTR USAF ANG NGB/A5RM  
**Cc:** (b) (6) (b) (6) CTR USAF ANG NGB/A3OM  
**Subject:** FW: MAFFS II contract

(b) (6)

Request your assistance/expertise on a few questions asked of us from (b) (6) concerning the MAFFS II contract. He is concerned as to contractual requirements of vendor concerning spare parts in the event that they are needed, ie who is responsible, who would make the official request, are they contractual required to provide. Also of concern, is what would happen in the event of a vendor declaring bankruptcy. Originally contract attached. He would like to meet to discuss these topics with you and I either late this week or early next week. Inputs welcome.

Thanks,

(b) (6)

(b) (6), LtCol  
Chief, Global Mobility Requirements, NGB A5RM  
Office: 703 607-3512 (DSN 327)  
Cell: (b) (6)  
(b) (6)@ang.af mil

-----Original Message-----

From: (b) (6) (b) (6) CTR USAF ANG NGB/A3OM  
Sent: Tuesday, March 08, 2011 8:08 AM  
To: (b) (6) LtCol USAF ANG NGB/A5  
Subject: FW: MAFFS II contract

(b) (6) Ctr, NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
703 607-3439  
DSN 327-3439  
(b) (6)@ang.af mil  
AFIMS account: (b) (6) my.af mil MAFFS CoP:  
<https://afkm.wpafb.af mil/ASPs/CoP/EntryCoP.asp?Filter=AC-OP-00-28>  
<https://wwwd.my.af mil/afknprod/ASPs/CoP/EntryCoP.asp?Filter=AC-OP-00-28>

Referred to US Forest Service



Referred to US Forest Service

----- Original Message -----

From: "(b) (6) (b) (6) Ctr ANG NGB/A3OS" [(b) (6)] ctr@ang.af mil]

Sent: 07/22/2008 10:30 AM AST

To: (b) (6)

Subject: MAFFS II contract

Good morning (b) (6)

Do you have an electronic version of the contract that you could send to me?

Thanks

(b) (6)

(6) Ctr, NGB/A3

703 607-3439

DSN 327-3439

(b) (6) ang.af.mil

<https://afkm.wpafb.af.mil/ASPs/CoP/EntryCoP.asp?Filter=AC-OP-00-28>

<<https://afkm.wpafb.af.mil/ASPs/CoP/EntryCoP.asp?Filter=AC-OP-00-28>>

<https://www.d.mil/afknprod/ASPs/CoP/EntryCoP.asp?Filter=AC-OP-00-28>

<<https://www.d.mil/afknprod/ASPs/CoP/EntryCoP.asp?Filter=AC-OP-00-28>>

**From:** (b) (6) Civ USAF ANG NGB/A5D  
**To:** (b) (6) MAJ USARMY NG NGB (US)  
**Subject:** FW: Ownership of Intellectual Property Associated With MAFFS II  
**Date:** Thursday, January 15, 2015 4:26:00 PM  
**Attachments:** [RE Letter for Transfer of Data Disk \(143 KB\).msg](#)  
[Executed Data Agreement - FS.PDF](#)  
[Summary of MAFFS II IP Facts.docx](#)  
[MAFFS II PSA Final 02.17.2010.pdf](#)  
[ASD498C, SOW C-130 AFFS \(Metallic\).doc](#)  
[Mod 24.pdf](#)  
[Mod 1.pdf](#)  
[Bill of Sale - Intellectual Property.pdf](#)

---

Email 2 same subject. Thanks again for all of your support.

V/r

(b) (6)

(b) (6) GS-13, DAF  
Plans and Requirements Directorate, Logistics Procurement, NGB/A5P  
DSN: 612-8525  
Com: (240) 612-8525  
Cell: (b) (6)  
BB: (b) (6)

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-----Original Message-----

**From:** (b) (6) Col USAF ANG NGB/A5P  
**Sent:** Thursday, January 15, 2015 4:18 PM  
**To:** (b) (6) LTC USARMY NG NGB (US)  
**Cc:** (b) (6) CIV NG NGB (US); (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** FW: Ownership of Intellectual Property Associated With MAFFS II

LTC (b) (6),

To go along with the other email I just sent to you, I am forwarding this email from the vendor who asserts exclusive rights to the data that would be used to produce the MAFFs prototype.

Thanks

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell 3 (b) (6)  
(b) (6) @ang.af mil

-----Original Message-----

From: Steve Benz [<mailto:sbenz@blue-aero.com>]  
Sent: Wednesday, January 14, 2015 8:52 AM  
To: (b) (6) Col USAF ANG NGB/A5P  
Cc: mike@pcg-usa.net; lackermann@unitedaero.com  
Subject: Ownership of Intellectual Property Associated With MAFFS II

Dear COL (b) (6),

My name is Steve Benz, I am the Director of Maffs Corp. and I write to you here today to follow up on previous discussions you have had with Mike Hillestad of Patriot Consulting Group concerning Maffs Corp.'s legal rights to the ownership of data associated with the MAFFS II aerial firefighting system (often referenced in the attached documents as AFFS.) We were provided your point of contact by Mike who indicated you were the cognizant authority for this matter regarding the National Guard Bureau.

Let me begin by stating outright: Maffs Corp. is the exclusive owner of the technical data associated with the MAFFS II. That fact is most clearly recognized by the US Forest Service in the e-mail found here as the first of several attachments: Scott Fisher's e-mail input to me from last June. Maffs Corp. provided the requested consolidated technical data only after receiving the Forest Service's direct confirmation of this fact. The countersigned, fully executed agreement for the use of the data is the second attachment.

The third through seventh attachments deal with the erroneous assertion that in one of its contract modifications Aero Union Corp. transferred system data rights to the USFS. As you can see from the provided documents, summarized in the third attachment, any transfer of technical know-how was limited in terms of scope and timeframe. Thus, at this point, no entity, including USFS, other than Maffs Corp. has the right to apply MAFFS II technical data in any manner other system maintenance - as specifically recognized by the USFS in its letter to Maffs Corp. last year.

Finally, the eighth attachment is the Bill of Sale from Comerica Bank (dba VRB Corp.) to United Aeronautical (UAC), a partner in Maffs Corp. Within this document it is clear that ownership of the intellectual property formerly associated with Aero Union Corp. is transferred to UAC (Maffs Corp.)

Col. (b) (6), I know that Mike has already pointed out the following input to you previously, but it bears repeating here: we do not assert our legal data rights in order to delay or diminish USFS / ANG efforts to redesign, reconfigure, and/or acquire new systems. Quite the opposite. We do so only in an effort to ensure our rightful and highly positive participation in any such effort. We've put together a great team of knowledgeable and capable technical and manufacturing experts and we're ready to modify and/or build

MAFFS systems right now. Mike said it best: we do this not to be a part of the problem, but instead to be part of the solution.

We look forward to a robust and positive dialogue with both the ANG and USFS on this matter and can visit with you, your staff, and that of the USFS at your request at any point to achieve a fair and win-win outcome.

Steve Benz

Director, Maffs Corp.

6501B Nob Hill Rd., Tamarac, FL 33321

tel: 954-718-4404

cell: 954-608-9665

email: sbenz@blueaero.com <<mailto:sbenz@blueaero.com>>

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**From:** (b) (6) (b) (6) CIV NG NGB (US)  
**To:** (b) (6) Col USAF NGB A5 (US)  
**Subject:** FW: resend  
**Date:** Thursday, February 09, 2017 1:14:05 PM  
**Attachments:** [FOIA - REQUEST LETTER - 2017-FS-WO-01154-F-Hickman.pdf](#)  
[FOIA - REQUEST LETTER - 2017-FS-WO-01154-F-Hickman.pdf](#)

---

So what does this mean to me? This the company that bought the MAFFS data rights?

(b) (6), DAF, GS12  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB Contingency Response Group FAM  
NGB Air Lift Control Flight FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
Comm 240 612 9304  
DSN 612 9304  
iPhone (b) (6)  
NIPR (b) (6) civ@mail.mil  
SIPR (b) (6) civ@mail.smil.mil  
SHAREPOINT:  
<https://gkoportal.ng.mil/ang/A3/A3M/A3MT/ALCFCRG/SitePages/Home.aspx>

Referred to US Forest Service





**From:** (b) (6) [Civ USAF ANG NGB/A3M](#)  
**To:** (b) (6) [USAF ANG NGB/A5P](#); (b) (6) [Civ USAF ANG NGB/A5](#); (b) (6) [Civ USAF ANG NGB/A5D](#)  
**Subject:** MAFFS Data Rights  
**Date:** Monday, February 02, 2015 7:10:32 AM  
**Attachments:** [RE Legal Rights to MAFFS \(8.21 KB\).msg](#)

---

Col,

Here is the Forest Service lawyer contact info:

Referred to US Forest Service



(b) (6)

(6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR: (b) (6) civ@mail.smil.mil

Referred to US Forest Service



-----Original Message-----

From: (b) (6) (b) (6) Civ USAF ANG NGB/A3M  
[mailto:(b) (6) ang.af.mil]  
Sent: Wednesday, November 26, 2014 4:28 AM  
To: (b) (6) -FS; (b) (6) - OGC  
Subject: RE: Legal Rights to MAFFS

Good morning,

We have not signed any agreements for phase two yet. I have not transferred any funding either.

(b) (6)

Do you know if contracting in Boise ever found appendix 19?

(b) (6)

(b) (6) NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af.mil  
SIPR:

Referred to US Forest Service



**From:** (b) (6) Civ USAF ANG NGB/A3M  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Cc:** (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** RE: Quick question  
**Date:** Tuesday, March 03, 2015 11:49:53 AM

---

It is FY13 Col.

Thanks for the look.

(b) (6), NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
240.612.9304  
DSN 612-9304  
BB (b) (6)  
EMAIL: (b) (6) ang.af mil  
SIPR (b) (6) civ@mail.smil.mil

-----Original Message-----

**From:** (b) (6) Col USAF ANG NGB/A5P  
**Sent:** Tuesday, March 03, 2015 11:49 AM  
**To:** (b) (6) Civ USAF ANG NGB/A3M  
**Cc:** (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** RE: Quick question

(b) (6),

I don't see where anything in that text would impact the current property rights issue. However, I thought it was FY13 money and not FY14 money. If it is FY14 procurement money then we have until the end of FY16 to spend it. Might want to check on that.

(b) (6)

(b) (6), Col, USAF  
Chief, Programs Division (NGB/A5P)  
240-612-9367 / DSN 612-9367  
Cell (b) (6)  
(b) (6) @ang.af mil

-----Original Message-----

**From:** (b) (6) Civ USAF ANG NGB/A3M  
**Sent:** Tuesday, March 03, 2015 11:38 AM  
**To:** (b) (6) Col USAF ANG NGB/A5P  
**Subject:** FW: Quick question

Col,

I agree with this but wanted to see how this may play into our data rights



issue.

(b) (6)

(b) (6), NGB/A3  
NGB Modular Airborne Fire Fighting System Program Manager  
NGB CRG/ALCF FAM  
3500 Fetchet Ave  
Joint Base Andrews, MD 20762-5157  
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Referred to US Forest Service for Processing



**From:** (b) (6) CIV (US)  
**To:** (b) (6) Civ USAF ANG NGB/A3M; (b) (6) Civ USAF ANG NGB/A5D  
**Subject:** MAFFS Data Rights: AFFS Documents (UNCLASSIFIED)  
**Date:** Thursday, December 18, 2014 11:14:37 AM  
**Attachments:** 0965 001.pdf  
AFFS Drawing Statement.rtf

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Classification: UNCLASSIFIED  
Caveats: NONE

(b) (6),

Reference today's call, attached are the mod documents that we are referring to that give the government data rights to build and maintain the MAFFS. Next I will send you the requested wording on the Economy Act. Thanks.

(b) (6)

**From:** (b) (6) CIV (US) [mailto:(b) (6)@mail.mil]  
**Sent:** Wednesday, May 28, 2014 3:39 PM  
**To:** (b) (6)  
**Cc:** (b) (6) CIV (US); (b) (6) CIV (US)  
**Subject:** FW: AFFS Documents (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

(b) (6),

See attached reference USFS data rights to utilize Aero Union drawings. Contract No. 54-024B-1-2159, Modification 1 notes " Technical Data is modified as follows; Aero Union agrees to the shared ownership of all manufacturing data rights to the Airborne Fire Fighting System and to transfer to the government all related manufacturing data sufficient to build and maintain the Airborne Fire Fighting System in the event Aero Union defaults under its obligations under this contract."

Hopefully, the attached will provide sufficient government rights to utilize the Aero Union drawings/data. And for further questions or clarification we can contact the contracting officer noted below. Thanks.

(b) (6)

Referred to US Forest Service

