



THE SECRETARY OF TRANSPORTATION  
WASHINGTON, D.C. 20590

August 10, 2010

William E. Reukauf  
Associate Special Counsel  
U.S. Office of Special Counsel  
1730 M Street, NW, Suite 218  
Washington, DC 20036

Re: OSC File No. DI-09-3770

Dear Mr. Reukauf:

I am responding to your letter of October 20, 2009, which referred for investigation disclosures from Patrick Massie, an Aerospace Engineer assigned to the Federal Aviation Administration's (FAA) Rotorcraft Directorate in Fort Worth, Texas. Mr. Massie alleged that Directorate management has failed to issue "dozens" of airworthiness directives (ADs) addressing unsafe conditions in helicopters in a timely manner. He also alleged that the Directorate has not established timeliness standards for carrying out individual steps in the AD process that would allow it to identify and address systemic deficiencies in the process. I delegated investigative responsibility for this matter to the Office of Inspector General (OIG). Enclosed are the OIG's Report of Investigation and FAA Administrator Babbitt's response.

In summary, the OIG investigation substantiated allegations that the Rotorcraft Directorate was not processing ADs in a timely manner. The OIG found that as of December 31, 2009, the Directorate had a substantial backlog of open ADs, including three open for approximately seven years. The OIG also confirmed that the Directorate had not established timeliness standards for carrying out individual steps in the AD process. Such a process measurement tool would have helped the Directorate identify causes contributing to the delays in processing ADs.

FAA Administrator Babbitt reviewed and agreed with the OIG's findings, and has taken several corrective actions, including: (1) employees contributing to significant delays in processing ADs have been counseled on their performance and/or suspended; (2) the three ADs open for approximately seven years have been issued; (3) an AD Process Action Team was created in November 2009 to exclusively work on improving the AD process and reducing the backlog; and (4) new FAA AD metric data has been developed to measure the overall timeliness of AD processing and additional controls put in place to ensure formulas used to calculate the metrics are accurate.

FAA also has planned several near and long term corrective actions, including: (1) by the end of 2010, the Directorate will deploy a new AD tracking tool, which will include the ability to better track the quality and timeliness of ADs, allow automatic filling of AD template fields

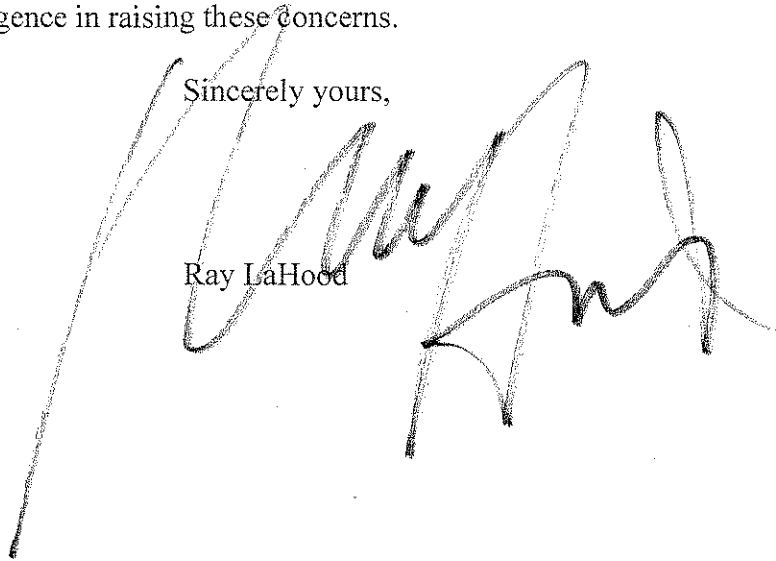
William E. Reukauf

and provide additional automation features to help improve the process; (2) the AIR Aircraft Engineering Division will form a group to define the major steps necessary for tracking the timeliness of ADs and developing an Aircraft Certification-wide process, expected to be completed by the end of 2012; and (3) FAA Office of Chief Counsel will work with the Aircraft Certification Service to revise FAA guidance on how foreign-issued ADs will be translated into FAA-issued ADs (a significant contributor to the lack of timeliness) to improve the efficiency in processing these ADs, expected to be complete by the end of 2012.

I appreciate Mr. Massie's diligence in raising these concerns.

Sincerely yours,

Ray LaHood

A large, stylized handwritten signature in black ink, appearing to read 'Ray LaHood', is written over the typed name. The signature is highly cursive and spans across the 'Sincerely yours,' and the typed name.

Enclosures



U.S. Department of Transportation  
Office of Inspector General

<b>REPORT OF INVESTIGATION</b>	<b>INVESTIGATION NUMBER</b> #I10A000047SINV	<b>DATE</b> Apr. 16, 2010
<b>TITLE</b> Failure of FAA Rotorcraft Directorate to Timely Issue Airworthiness Directives	<b>PREPARED BY:</b> Mary E. Hanson Supervisory Auditor — Detailed Senior Investigator Special Investigations and Analysis, JI-3	<b>STATUS</b> FINAL
	<b>DISTRIBUTION</b> AVS-1	<b>APPROVED BY:</b> JI-3

## TABLE OF CONTENTS

**BACKGROUND**..... 3

**SYNOPSIS**..... 4

### **DETAILS:**

**Allegation 1:** FAA Rotorcraft Directorate management has failed to issue "dozens" of airworthiness directives that address unsafe conditions in helicopters, in contravention of FAA Order 8040.1C and the Airworthiness Directive (AD) Manual..... 5

**Allegation 2:** The Rotorcraft Directorate has not established timeliness standards for carrying out individual steps in the AD process (i.e., a Process Measurement Record) that would allow it to identify and address systemic deficiencies in the AD process, contrary to the recommendation in the AD Manual..... 7

**ADDITIONAL INFORMATION**..... 9

### **ATTACHMENTS:**

1. Methodology of Investigation
2. OIG Analysis of Metric Data

## BACKGROUND

On October 20, 2009, the U.S. Office of Special Counsel (OSC) referred a whistleblower disclosure from an aerospace engineer at FAA's Rotorcraft Directorate in Ft. Worth, TX, to U.S. Department of Transportation Secretary Ray LaHood for investigation. The whistleblower alleged that the Rotorcraft Directorate failed to issue airworthiness directives in a timely manner. Specifically, he alleged that Directorate management has, in contravention of FAA Order 8040.1C (*Airworthiness Directives*) and the Airworthiness Directives Manual, failed to issue "dozens" of airworthiness directives (ADs) that address unsafe conditions in helicopters. Further, the whistleblower alleged that, contrary to the recommendation in the AD manual, the Directorate has not established timeliness standards for carrying out individual steps in the AD process (i.e., a Process Measurement Record) that would allow it to identify and address systemic deficiencies in the AD process. The Secretary delegated investigative responsibility to the Office of Inspector General (OIG). Attachment 1 describes the methodology of our investigation.

ADs are legally enforceable rules that apply to aircraft and aircraft engines, propellers, and appliances installed on aircraft. ADs are issued to address unsafe conditions that exist in a product and are likely to exist or develop in other products of the same type design. ADs specify the inspections, conditions, limitations, and actions that aircraft owners or operators must take to resolve the unsafe condition. Aircraft owners and operators who do not comply with an AD are in violation of 14 CFR § 39.7.

FAA's Aircraft Certification Service's (AIR) Rotorcraft Directorate (located in the Southwest Region) is responsible for developing and publishing ADs to resolve unsafe conditions in helicopters. When a potential unsafe condition is identified, an engineer must first validate it and determine if the unsafe condition requires immediate action. Once this is done, a technical writer prepares the AD, staff engineers review it for technical accuracy, and management officials review it to ensure compliance with policies and procedures. Next, legal counsel reviews the AD to ensure it is legally sufficient, enforceable and understandable. Changes recommended by writers, engineers and attorneys during the review process are incorporated into the AD before publication.

There are three types of ADs, each with a different publication process:

- Emergency ADs (EADs), also known as Immediate Safety of Flight Rule ADs, require immediate action by aircraft owners or operators to resolve an unsafe condition. These directives are issued without prior notice or opportunity for public comment.
- Immediately Adopted Rules (IARs) also require immediate action by owners or operators to resolve an unsafe condition. These ADs are issued without prior notice

or opportunity for public comment, but comment is invited after the fact. Significant issues raised in the public comment period could cause a change to the IAR.

- Notice of Proposed Rulemaking (NPRM) ADs do not require immediate action by owners or operators to resolve an unsafe condition. These ADs are published in the Federal Register with an invitation for public comment. The standard comment period is 60 days, though it can be shortened for non-controversial rules.

## SYNOPSIS

We substantiated both allegations by a preponderance of the evidence. Specifically, our investigation found:

As of December 31, 2009, the Rotorcraft Directorate had a backlog of 81 open ADs that exceeded AIR's goals, including three that had been open for about seven years. Since 2002, the Rotorcraft Directorate has failed 72 percent of the time (103 of 143) to issue EAD/IARs within 30 days. We also found 19 of these ADs were more than one year old. The Directorate did not experience significant timeliness problems for publishing NPRM ADs until 2005. However, in the years 2005-2008, the percentage of untimely issued NPRM ADs increased dramatically — to 59 percent by 2008. Moreover, for the period 2002 to 2008, we found that it took the Directorate more than two years — double the target of 365 days — to issue 33 of 95 NPRM ADs. The Directorate changed two ADs from IARs to NPRMs after they were not issued within 30 days and also changed the AD identification numbers. Both actions created further confusion in the tracking of ADs and the accurate calculation and visibility of their ages. The changes also gave the appearance to staff that the Directorate management changed the AD identification numbers to mask the lack of timeliness of these ADs.

The Directorate has not established timeliness standards for carrying out individual steps in the AD process (i.e., a Process Measurement Record) as recommended in the AD manual. Such a process measurement tool would have helped the Directorate identify causes contributing to the delays in processing ADs. Additional causes contributing to the delays included: lack of consistent management oversight (i.e., no permanent manager for the Safety Management Group) and disagreement between the Directorate and legal counsel regarding how foreign-issued ADs should be translated into FAA-issued ADs. In addition, witnesses cited the local legal counsel's substantial comments to draft ADs, which they believed to be outside his authority, as a contributing factor. AD metric data submitted by the Rotorcraft Directorate (through Southwest Region) to FAA Headquarters was not accurate. In addition, FAA metrics used to evaluate the quality of the AD process were, in our opinion, misleading and not fully effective at identifying quality issues in the timely processing of ADs. As a result, the true extent of the untimely processing within the Directorate was not fully disclosed.

Below are the details of the allegations and our findings.

**DETAILS:**

**Allegation 1:** Rotorcraft Directorate management has failed to issue "dozens" of airworthiness directives that address unsafe conditions in helicopters, in contravention of FAA Order 8040.1C and the Airworthiness Directive Manual.

**FINDINGS**

We substantiated this allegation.

FAA Order 8040.1C and the AD Manual do not contain specific time standards for processing ADs. However, AIR (of which the Rotorcraft Directorate is a part) has metrics for the timely processing of ADs as part of the Quality Management System (QMS) it uses to measure the effectiveness of FAA's procedures on safety goals. AIR's AD targets are to issue EADs and IARs in less than 30 days, and NPRMs in less than 365 days, from the date an FAA engineer validates a safety concern.

As shown in Table 1, we found that as of December 31, 2009, the Directorate had 81 open ADs that exceeded AIR's timeliness goals.

**Table 1. Number of Open ADs that Exceeded AIR Timeliness Goals as of December 31, 2009**

Year Initiated	2002	2003	2004	2005	2006	2007	2008	2009	Total
Open EAD/IARs > 30 days	0	0	0	0	0	9	3	12	24
Open NPRMs > 365 days	0	3	2	4	4	11	33	--	57
Total Open ADs	0	3	2	4	4	20	36	12	81

Source: FAA database

As disclosed by the whistleblower, delay in processing these ADs has resulted in unsafe conditions that have been left unresolved for years, including three that have been open, as of December 31, 2009, for about seven years. For example:

- In February 2003, the Directorate initiated an AD (2008-SW-72-AD) to address fatigue cracking in tension-torsion straps (TT straps) used in certain models of Bell Helicopters. The failure of a TT strap can cause the loss of the main rotor blade and subsequent loss of control of the helicopter. Such failures have been attributed to helicopter accidents in Bell Helicopters, as well as other helicopters. This AD was designed to supersede a 2002 AD by expanding the list of TT strap part numbers that need to be removed from service, reducing and revising the retirement life of other TT straps, and requiring that maintenance records be updated to reflect the revised

retirement life for each TT strap part number. According to the proposed AD, there are an estimated 716 helicopters of U.S. registry affected by this unsafe condition.

Also, we confirmed that the six ADs presented in the OSC referral (2007-SW-51-AD, 2007-SW-45-AD, 2007-SW-75-AD, 2007-SW-49-AD, 2008-SW-39-AD, and 2006-SW-05-AD) remained open, despite their ages, as of December 31, 2009. Further, we confirmed the whistleblower's claims that two of these ADs were changed from IARs to NPRMs after they were not issued within 30 days and changed the AD identification numbers. Both actions resulted in further confusion in the tracking of the ADs and the accurate calculation and visibility of their ages. Moreover, the changes gave the appearance to staff that the Directorate management was attempting to mask the lack of timeliness:

- IAR 2007-SW-45-AD was initiated in November 2007 to immediately address an unsafe condition in some main and tail rotor servo-controls used in certain Eurocopter helicopters. The IAR was prompted by an "emergency" AD issued by the European Aviation Safety Agency (EASA) on May 21, 2007. AIR's goal for the Rotorcraft Directorate was to publish this IAR within 30 days. When the Directorate failed to meet this goal, it changed the AD from an IAR to a NPRM despite no change in the condition that was to be immediately addressed. The Directorate changed the AD's identification number to 2009-SW-18-AD, which gave the appearance to staff that the Directorate was attempting to mask the AD's true age.
- IAR 2007-SW-75-AD was initiated in January 2008 to address an unsafe condition regarding cracks in the web of the main gear box of Eurocopter France helicopters. The IAR was prompted by an "emergency" AD issued by EASA on November 15, 2007. However, after the Directorate failed to issue the IAR for approximately 19 months, it changed the IAR to a NPRM. The purported reason given on the AD tracking sheet for the change was a lack of service difficulty reports since 2006. However, it was not clear how the lack of service difficulty reports alone changed the risk identified by EASA. Also, the Directorate changed the identification number to 2009-SW-47-AD, which gives the appearance that the AD was initiated in 2009 instead of 2007.

In both ADs above, FAA indicated that it was not its intent to mask the timeliness or true age of the ADs as the original date that the ADs were initiated was still recorded in its AD database. Instead, because of the delays in issuing these IARs, local management and legal counsel determined that a re-evaluation of the risk assessment was appropriate and it was determined that the public should be provided the opportunity to comment on these ADs.



In sum, we confirmed the whistleblower's allegation that the Directorate's failure to issue ADs has resulted in unsafe conditions that have been left unresolved for years. Moreover, we found evidence that the Directorate has, in at least two instances, delayed corrective action of some unsafe conditions by changing AD types and identification numbers compounding confusion in the AD tracking process and giving the appearance to staff that the Directorate management was attempting to mask the lack of timeliness.

When the Rotorcraft Directorate did issue ADs, it often failed to do so in a timely manner. Specifically, we found that the Directorate has not, in most instances, met AIR targets for processing ADs. As shown in Table 2, since 2002, the Rotorcraft Directorate has failed 72 percent of the time (103 of 143) to issue EAD/IARs within 30 days. Further, 19 of these ADs were more than one year old before they were issued.

**Table 2. EADs and IARs Not Timely Issued — 2002 to 2009 (Target: Issue in < 30 Calendar Days)**

	2002	2003	2004	2005	2006	2007	2008	2009	Total
ADs initiated (excluding cancelled ADs)	5	18	15	11	9	31	23	31	143
ADs <i>not</i> completed on time (including open ADs)	5	10	11	11	5	24	17	20	103
Percentage of ADs <i>not</i> completed on time	100%	56%	73%	100%	56%	77%	74%	65%	72%

Source: FAA database

As shown in Table 3, prior to 2005, only 5 to 15 percent of Rotorcraft Directorate NPRM ADs were not issued within 365 days. However, in the years 2005-2008, the percentage of untimely issued NPRM ADs increased dramatically — to 59 percent by 2008.

**Table 3. NPRM ADs Not Timely Issued — 2002 to 2008 (Target: Issue in < 365 Calendar Days)**

	2002	2003	2004	2005	2006	2007	2008	Total
ADs initiated (excluding cancelled ADs)	19	66	47	35	34	52	56	253
ADs <i>not</i> completed on time (including open ADs)	1	3	7	18	11	22	33	95
Percentage of ADs <i>not</i> completed on time	5%	5%	15%	51%	32%	42%	59%	38%

Source: FAA database

Moreover, for the period 2002 to 2008, we found that 33 of the 95 ADs not issued timely were more than two years old — double the target of 365 days.

**Allegation 2:** The Rotorcraft Directorate has not established timeliness standards for carrying out individual steps in the AD process (i.e., a Process Measurement Record) that

would allow it to identify and address systemic deficiencies in the AD process, contrary to the recommendation in the AD manual.

## FINDINGS

We substantiated this allegation.

As disclosed by the whistleblower, the Rotorcraft Directorate has not, as recommended in FAA's AD Manual, established a "Process Measurement Record" that includes timeliness standards for carrying out the individual steps in the AD process. As a result, it did not identify choke points that contributed to the failure to timely process ADs. During our analysis of open ADs, we identified some causes of delay:

- One technical writer took over three times as long as the other writer to draft an initial AD.
- Twelve of the open ADs were with one engineer for review for more than 90 days, and seven of them were delayed for more than one year.

We also identified other problems that may not have been identified through process measurement, but nonetheless contributed to the failure to timely issue ADs:

- The Safety Management Group, the office within the Rotorcraft Directorate charged with first-line responsibility for ensuring ADs are issued timely, has been led by at least three acting managers since June 2008. In our opinion, none of the managers, perhaps because of the temporary nature of their position, consistently held staff accountable for the failure to timely issue ADs.
- FAA Order 8040.5 (*Airworthiness Directive Process for Mandatory Continuing Airworthiness Information*), effective September 29, 2006, provided new procedures for converting ADs issued by foreign civil aviation authorities (for aircraft manufactured outside of the U.S.) into FAA-issued ADs. However, local FAA legal counsel would not approve these ADs using the template required by the order on the ground that the language in the template was not mandatory or legally acceptable in all cases and, therefore, should be modified to meet the unique requirements of each AD. However, Directorate personnel believed that they were required to adhere to the template requirements in the order and could not modify the AD templates. We estimate that for those ADs not timely issued between 2007 and 2009, 73 percent were of this type.

The Directorate, as well as all Aircraft Certification Offices that process ADs, received a deviation from using the template specified in FAA Order 8040.5 from September 7, 2007, to January 28, 2008. The FAA Chief Counsel's office was to

have issued a new template for these ADs by February 1, 2008; however, a new template was not implemented. Thus, Rotorcraft Directorate personnel indicated that they continued to operate as if they still had a valid deviation. A new, open-ended deviation was approved in November 2008 and was still valid at the time of this report. Furthermore, because there was no standard template, each AD was effectively custom-designed and required more time to write. In addition, we were told that technical writers, lacking engineering knowledge, were unable to effectively identify and extract essential information needed to convert foreign ADs into FAA-issued ADs.

- Multiple witnesses cited the Southwest Region legal counsel's substantial comments to draft ADs, which they believe he lacked the authority to make, as a contributing factor.

## **ADDITIONAL INFORMATION**

### **Actions Taken by the Rotorcraft Directorate to Address the Timely Processing of ADs**

In June 2009, the Rotorcraft Directorate recognized that it had a problem with the timely processing of ADs and initiated an internal preventive action request through AIR's QMS to investigate ways to improve the timeliness of IAR ADs. However, no significant action was taken to address this issue until November 2009. At that time, the Directorate established a Special AD Action Team comprised of engineers and writer/editors to focus on the backlog of all ADs. In the long-term, the Directorate is working to partially automate the AD process to make it more efficient. At the time of our review, the Directorate had not specified its other plans to ensure ADs are timely issued.

### **Rotorcraft Directorate AD Metric Data was Inaccurate and Misleading**

On a semi-annual basis, AIR requires each of its divisions and regional offices, including the Rotorcraft Directorate, to submit data that allows it to determine whether metrics that measure the quality of business processes and procedures, including AD timeliness, have been met. For ADs, the metrics include the number of ADs issued and the average number of days to issue the ADs during a six month period. If the average number of days to issue ADs exceeds the target (< 30 days for EAD/IARs and <365 days for NPRM ADs), the metric is shown in "red." Only metrics that are not met, i.e., the "red" metrics, are discussed by AIR management and the reporting office.

AIR established an AD metric spreadsheet for its offices to use which included a formula for calculating the average number of days to issue ADs. All but the Rotorcraft Directorate used this formula and, as a result, correctly computed the average number of days to issue an AD over a six-month period. However, the Rotorcraft Directorate used a

modified formula that understated the average because it included in its calculation months when no ADs were issued. For example, if the Directorate issued ADs during two of the six months, the Directorate incorrectly divided the total days by six instead of two to determine the average number of days. (See Attachment 2 for a detailed analysis of the Directorate's errors.) As a result, as shown below in Table 4, the Directorate significantly understated the number of days by which it failed to meet the EAD/IARs target, and incorrectly showed it met the target for NPRM ADs.

**Table 4. Rotorcraft Directorate's Incorrectly Calculated AD Metrics -- FY 2009**

Time Period	Average Days to Issue ADs		OIG Comments (See Attachment 2 for details)
	As reported to AIR	As corrected by OIG	
<b>EAD/IAR</b> (target <30 days)			
First Half (Oct 2008 to Mar 2009)	97	116	Rotorcraft Directorate understated its lack of timeliness by 19 days.
Second Half (Apr to Sep 2009)	89	266	Rotorcraft Directorate again did not meet its target, but reported that it improved on the prior period by decreasing the average number of days by 8. In fact, it had increased the average number of days to issue these ADs by 150.
<b>NPRMs</b> (target <365 days)			
First Half (Oct 2008 to Mar 2009)	136	409	Rotorcraft Directorate misstated that it met its target when it did not.
Second Half (Apr to Sep 2009)	136	407	Rotorcraft Directorate again misstated that it met its target when it did not.

The formula in the metric spreadsheet is a password-protected field and, according to AIR personnel, only QMS Persons of Responsibility (PORs) have access to the password. The Directorate's QMS POR was unable to explain how the formula for this metric was modified in the Directorate's spreadsheets.

AIR revised its QMS metrics in January 2010. It changed the metric for EAD/IARs to a number instead of an average when it recognized that the metric (an average of an average) was not statistically valid. The revised target is to have zero EAD/IARs that exceed 30 days. FAA eliminated the metric for NPRM ADs on the ground that (1) it was not a requirement of the AD order, (2) it was an arbitrary number selected by a group of subject matter experts in 2006, and (3) each of its four directorates had successfully met the target goal since inception (this was before we found the above cited errors in the metric calculations).

In our opinion, the revised metric (providing a number instead of an average) is a better indicator of performance. However, it will not show the extent of open EAD/IARs that

already exceed the target until after the AD is issued. Also, because it eliminated the target for NPRM ADs, there is no visibility regarding the timeliness of these ADs. For example, 57 of the 81 ADs at the Rotorcraft Directorate that have been open for more than one year were NPRM ADs. Consequently, what occurred at the Rotorcraft Directorate could occur (or may be occurring) at other directorates, resulting in a reactive rather than proactive approach to address potential problems associated with the timely issuing of ADs.

#

## ATTACHMENT 1: METHODOLOGY OF INVESTIGATION

This investigation was led by a Senior Analyst and Supervisory Auditor from the OIG's Aviation and Special Programs Audit Directorate (JA-10). (The Supervisory Auditor was detailed to a Senior Investigator position within the OIG Special Investigations and Analysis Directorate.)

We reviewed numerous FAA records related to ADs processed by the Rotorcraft Directorate in the Southwest Region. These documents included draft ADs, AD tracking sheets, FAA AD guidance, internal correspondence, QMS metric data, QMS guidance, and other related AD documents. We also obtained and analyzed the Rotorcraft Directorate's database used to track ADs. Finally, we interviewed 12 FAA officials from the Aircraft Certification Services' Rotorcraft Directorate, Southwest Region, and FAA Headquarters' Evaluations and Special Projects Branch. These witnesses included:

- Mark Schilling, Acting Director, Rotorcraft Directorate (ASW-100)
- Jorge Castillo, Acting Manager, Rotorcraft Standards Staff (ASW-100)
- Jim Grigg, Acting Manager, Safety Management Group (ASW-100)
- Maria Garcia Cortez, AD Coordinator (ASW-100)
- Mary Ann Phillips, Technical Writer (ASW-100)
- Mary June Bruner, Technical Writer (ASW-100)
- Patrick Massie, Aerospace Engineer, (ASW-110)
- Kathy Rascoe, QMS Person of Responsibility (ASW-100)
- Steve Harold, Directorate Counsel (SW-7)
- Brian Cable, Manager, Evaluations and Special Projects Branch (AIR-240)
- Nicole Mikel-Brumfield, Management Representative (AIR-240)
- A Rotorcraft Directorate employee who requested confidentiality

**ATTACHMENT 2: OIG ANALYSIS OF METRIC DATA**

As Reported to HQs AIR-1 <sup>st</sup> Half FY 2009								OIG Analysis
Metric Data For EADs and IARs	Oct 2008	Nov 2008	Dec 2008	Jan 2009	Feb 2009	Mar 2009	Total	Description of Error in Calculations
Number issued	3	3	1	0	3	3	13	
Average number of days to issue (target <30 days)	3	34	317	2	224	1		Because no ADs were issued in Jan, data should not have been included in the average days. Average should have been 116 days instead of 96. (579/5=116, not 581/6=97)
Metric Data For NPRM ADs								
Number issued	0	2	0	0	0	1	3	
Average number of days to issue (target <365 days)	0	309	0	0	0	508	136	Because no ADs were issued in Oct, Dec, Jan and Feb, these months should not have been used to determine overall average. Average should have been 409 days instead of 136. Therefore, target was not met. (817/2=408.5 not 817/6=136)

As Reported to HQs AIR-2 <sup>nd</sup> Half FY 2009								OIG Analysis
Metric Data For EADs and IARs	Apr 2009	May 2009	Jun 2009	Jul 2009	Aug 2009	Sep 2009	Total	Description of Error in Calculations
Number issued	1	3	0	0	0	0	4	
Average number of days to issue (target <30 days)	14	518	0	0	0	0		Because no ADs were issued from Jun through Sep, these months should not have been used to determine overall average. Average should have been 266 days instead of 89. (532/2=266 not 532/6=89)
Metric Data For NPRM ADs								
Number issued	0	1	0	2	0	0	3	
Average number of days to issue (target <365 days)	0	403	0	410	0	0	136	Because no ADs were issued in Apr, Jun, Jul and Aug, these months should not have been used to determine overall average. Average should have been 407 days instead of 136. Therefore, target was not met. (813/2=406.5 not 813/6=135.5)



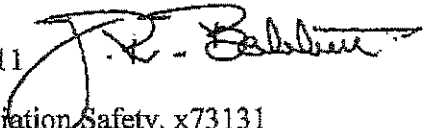
# Federal Aviation Administration

---

## Memorandum

Date: JUL 8 2010

To: Robert A. Westbrooks, Acting Assistant Inspector General for Special Investigations and Analysis, JI-3

From: J. Randolph Babbitt, Administrator, AOA-1, x73111 

Prepared by: Margaret Gilligan, Associate Administrator for Aviation Safety, x73131

Subject: Office of the Inspector General (OIG) Investigation #I10A000047SINV  
re: Failure to Issue Rotorcraft Airworthiness Directives in Timely Manner

---

I have reviewed the results of the subject investigation and will take action as indicated in the attachment.

If you have any questions or need additional information, please contact KC Yanamura, Deputy Director of the Aircraft Certification Service, by telephone at 202-267-7270, or by e-mail at [KC.Yanamura@faa.gov](mailto:KC.Yanamura@faa.gov).

Attachment



ATTACHMENT



**FAA**  
**Aviation Safety**

## **FAA Response to OIG Investigation**

**#I10A000047SINV**

*Corrective Actions Addressing Failures in the Rotorcraft Directorate to Issue  
Airworthiness Directives in a Timely Manner*

## ATTACHMENT

FAA Response to OIG Investigation #I10A000047SINV

June 21, 2010

### Summary

In 2009, the Office of Inspector General (OIG) investigated allegations by a whistleblower at the Rotorcraft Directorate (RD), part of the Aircraft Certification Service (AIR) in the Federal Aviation Administration (FAA). The whistleblower alleged the RD failed to issue "dozens" of airworthiness directives (ADs) for helicopters. The whistleblower further alleged the RD failed to establish timeliness standards for the AD process to allow RD management to identify and correct systemic problems. The Director of AIR received the OIG report, dated April 16, 2010.

We reviewed the report and agree the allegations are valid and require corrective action. The RD management identified similar concerns with the timely issuance of ADs as early as April 2009, and initiated a Preventive Action Request (PAR) through the FAA's Quality Management System (QMS) on June 6, 2009 to develop corrective action. After reviewing the AD process, RD management determined the root causes of the timeliness issue as follows:

1. Lack of visibility of ADs throughout the development cycle
2. Inefficiencies in the AD development cycle, especially when coordinating ADs with other offices
3. Inability to capitalize on efficiencies intended by the FAA Order 8040.5 for Mandatory Continued Airworthiness Information (MCAI) resulting from unresolved implementation issues
4. Personnel performance and conduct issues that adversely affected the AD process

The timely issuance of ADs to correct unsafe conditions is essential to ensure continued operational safety of the aircraft fleet. Some corrective actions were complete or underway during the time period of the OIG investigation, as noted in the OIG report. We developed additional corrective action plans since the OIG investigation. These plans are designed to correct both the specific issues within the RD, and to prevent similar problems from occurring within AIR.

### Concerns Raised by OIG and FAA Response

The FAA offers the following comments on specific issues cited in the OIG report.

1. Reclassification of Immediately Adopted Rules (IARs) to Notices of Proposed Rulemaking (NPRMs)

The OIG report states the RD reclassified some IARs to NPRMs when the IAR was not issued in a timely manner:

*"The Directorate changed two ADs from IARs to NPRMs after they were not issued within 30 days;" (Synopsis, pg 4, 2<sup>nd</sup> paragraph)*

ATTACHMENT

FAA Response to OIG Investigation #I10A000047SINV

June 21, 2010

*"When the Directorate failed to meet this goal, it changed the AD from an IAR to a NPRM despite no change in the condition that was to be immediately addressed."*  
*(Allegation 1 Findings, pg 6, 3<sup>rd</sup> paragraph)*

*"However, after the Directorate failed to issue the IAR for approximately 19 months, it changed the IAR to a NPRM."* (Allegation 1 Findings, pg 6, 4<sup>th</sup> paragraph)

*"The purported reason given on the AD tracking sheet for the change was a lack of service difficulty reports since 1996. <The European Aviation Safety Agency> EASA, however, indicated that, in 2004, two instances of the cracks were identified. Thus, the Directorate's reason for the change does not appear justified."*  
*(Allegation 1 Findings, pg 6, 4th paragraph)*

The delays in processing IARs are unacceptable and will be corrected. However, once the delays occurred, it was appropriate for the RD to re-evaluate the risk assessment and determine if an IAR was still warranted. The FAA AD Manual provides guidance on determining the timeline for issuing an AD based on the risk of the unsafe condition (i.e., whether it should be an emergency AD, IAR, or NPRM). An NPRM is the standard and preferred procedure as it allows the public to provide comment on the proposed corrective action before it is implemented, in accordance with the Administrative Procedures Act (APA). Since an IAR excludes public participation until after the rule issuance, it should be justified by the need to address an urgent safety condition.

The unsafe conditions that were the subject of the IARs were each initially assessed as high risk issues. Due to the systemic breakdowns noted in the OIG report the RD failed to release the IARs in a timely manner. When the delays were discovered, RD management and local legal counsel determined that a re-evaluation of the risk assessment was appropriate to determine if the public should be provided the opportunity to comment on the AD.

With regards to the IAR specifically mentioned as being changed to an NPRM after a 19 month delay, we are unable to verify the OIG statement that the decision was based on a lack of service events since 1996, as this information is not written on our copy of the AD worksheet. The IAR was intended to specifically address the two instances of main gear box cracks discovered by the EASA in 2004. The re-evaluation of the risk after the 19 month delay accounted for these failures and determined it was appropriate to re-classify the AD to an NPRM based on recent service history.

In 2009, AIR had internal metrics for tracking the timeliness of ADs, which were 30 days to issue an IAR and 365 days to issue an NPRM. In the two instances cited by OIG of IARs changed to NPRMs after exceeding the 30 day goal, the AD actions had

ATTACHMENT

FAA Response to OIG Investigation #I10A000047SINV

June 21, 2010

also by that time exceeded the NPRM goal as well. Reclassification in these two instances did not result in the ADs meeting AIR metrics.

2. Changing AD numbers gives appearance of hiding AD age

The OIG report states the RD management gave the perception to FAA staff that they were attempting to hide the timeliness issue for AD release by changing AD identification numbers:

*"The changes also gave the appearance to staff that the Directorate management changed the AD identification numbers to mask the lack of timeliness of these ADs." (Synopsis, pg 4, 2<sup>nd</sup> paragraph)*

*"The Directorate changed the AD's identification number to 2009-SW-18-AD, which gave the appearance to staff that the Directorate was attempting to mask the AD's true age. ." (Allegation 1 Findings, pg 6, 3<sup>rd</sup> paragraph)*

*"Also, the Directorate changed the identification number to 2009-SW-47-AD, which gives the appearance that the AD was initiated in 2009 instead of 2007." (Allegation 1 Findings, pg 6, 4<sup>th</sup> paragraph)*

We recognize the change of an AD identification number can give the perception the change was made to hide the AD's age; however, we determined the AD identification numbers were changed to preserve AD history after the IARs were reclassified to NPRMs. When an AD is reclassified the AD action is assigned a new record, with a new identification number, in the database. The history of the earlier AD action, including the original initiation date, is carried forward and preserved in the new record. If a new record is not generated, the database fields for the original AD action are overwritten and its history is lost.

The age of an AD is clearly documented in the RD AD database, and is tracked from the date the initial determination of an unsafe condition is made, even if the AD identification number changes. The AD identification number is assigned based on the date in which the AD record is entered in the AD database. While AD identification numbers may correlate generally with age, the identification number of any specific AD is not a reliable indication of that AD's age.

Evidence of the accuracy of the RD AD database is indicated by the ability of the OIG to accurately determine the true age of the ADs and trace their history, even though the referenced ADs had revised identification numbers. Correcting the issues that led to long delays in AD processing will eliminate this perception, as AD identification numbers will correlate more closely with their age.

ATTACHMENT

FAA Response to OIG Investigation #I10A000047SINV

June 21, 2010

3. The RD allowed unsafe conditions to go unresolved for years

The OIG report states the RD allowed unsafe conditions to persist, unresolved, for years:

*".....delay in processing these ADs has resulted in unsafe conditions that have been left unresolved for years, including three that have been open, as of December 31, 2009, for about seven years" (Allegation 1 Findings, pg 5, 3<sup>rd</sup> paragraph)*

Airworthiness directives play a critical role in assuring the safety of the fleet by ensuring risk is mitigated to a satisfactory level. However, the mitigation of risk is not based solely on the issuance of ADs. The assurance of safety is the result of multiple interdependent elements of the aviation system - manufacturers, operators, maintenance organization, and the FAA - working together. As a general rule, manufacturer service information represents a partial but effective level of mitigation even in the absence of an AD that mandates its implementation. Furthermore, aircraft in passenger service or for hire have an approved inspection program which typically includes accomplishment of service bulletins.

In the three specific cases cited by the OIG, the risk was partly mitigated by other factors:

- 2008-SW-72-AD reduces the life-limit on certain restricted category helicopters tension-torsion straps. This reduction in life-limits is the same as similar standard category helicopters (AD 2002-22-14). Because restricted category operations are typically not allowed over populated areas and are limited to essential mission personnel only, the exposure and safety risk was minimal. The AD was issued in April 2010.
- 2007-SW-75-AD was originally classified as an IAR, to revise an existing AD action mandated by AD 2005-03-09, but was delayed during internal coordination. When the delay was discovered, a new risk assessment was performed. The proposed revised action reduces the time by which an initial inspection must occur to 35 hours time-in-service (TIS), reduced from the previously mandated 250 hours TIS. The recurring inspection interval and the corrective action remain the same; therefore only a subset of helicopters not previously inspected in the first 35 hours TIS are affected. Based on this information, the level of risk did not justify bypassing the public opportunity to comment, in accordance with the APA. This AD was reclassified as an NPRM and renumbered as 2009-SW-47-AD. The NPRM was issued in June 2010.
- 2007-SW-45-AD was originally classified as an IAR; however, it was delayed during internal coordination. When the delay was discovered, a new risk assessment was performed. Given the lack of recent service difficulties, the limited number of aircraft potentially affected, and the effectiveness of the service

ATTACHMENT

FAA Response to OIG Investigation #I10A000047SINV

June 21, 2010

information from the manufacturer, it was determined the level of risk did not justify bypassing the public opportunity to comment, in accordance with the APA. The AD was reclassified as an NPRM and renumbered as 2009-SW-18-AD. The NPRM was issued in June 2010.

4. The role of FAA personnel in the delayed processing of ADs

The OIG report cites instances where particular FAA personnel within the RD played a role in delaying the issuance of ADs:

*"The Safety Management Group, the office within the Rotorcraft Directorate charged with first-line responsibility for ensuring ADs are issued timely, has been led by at least three acting managers since June 2008. In our opinion, none of the managers, perhaps because of the temporary nature of their position, consistently held staff accountable for the failure to timely issue ADs." (Allegation 2 Findings, pg 8, 2<sup>nd</sup> paragraph, first bullet)*

*"During our analysis of open ADs, we identified some causes of delay:*

- One technical writer took over three times as long as the other writer to draft an initial AD.*
- Twelve of the open ADs were with one engineer for review for more than 90 days, and seven of them were delayed for more than one year"*

*(Allegation 2 Findings, pg 8, 1<sup>st</sup> paragraph)*

*"...local FAA legal counsel would not approve these ADs using the template required by the order on the ground that the language in the template was not mandatory or legally acceptable in all cases..." (Allegation 2 Findings, pg 8, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> bullet)*

*"Multiple witnesses cited the Southwest Region legal counsel's substantial comments to draft ADs, which they believe he lacked the authority to make, as a contributing factor." (Allegation 2 Findings, pg 9, 1<sup>st</sup> bullet)*

Management turnover may have contributed to some loss of continuity in understanding the deficiencies in the process, but the acting managers in place between April 2009 and April 2010 were aware of the AD timeliness issues and were working to rectify it. Acting managers took the following specific steps to improve AD timeliness and hold staff accountable:

- Issued a PAR to the FAA QMS to require corrective action to the AD process
- Instituted bi-weekly reviews of AD status
- Performed reviews of other directorate AD tracking systems and made the decision to deploy a new tracking system to better track AD milestones
- Deployed the AD Process Action Team to prioritize ADs and reduce AD backlog

ATTACHMENT

FAA Response to OIG Investigation #I10A000047SINV

June 21, 2010

- Held discussions with the technical writer and engineer cited in the OIG report regarding their failures to perform in processing ADs
- Issued disciplinary action against the technical writer cited in the OIG report, in August 2009, in the form of a one-week suspension

With regards to the technical writer, performance and conduct issues adversely impacted output. Disciplinary actions in the form of oral discussion, leave restriction, and suspension were taken and documented prior to the OIG investigation, but did not alter the employee's behavior. The engineer's performance issues are the result of both individual and systemic failures. Due to other workload, the individual failed to keep track of AD assignments, and no system existed for alerting management. These issues are currently being addressed by FAA management (see "Corrective Actions" section).

With regard to local Southwest legal counsel's unwillingness to approve template ADs, legal counsel believed some of the templates did not meet all legal requirements and that he was required to identify those legal deficiencies and work with the RD staff to modify the ADs as necessary. The extensiveness of counsel's comments is also cited as a contributing factor in the delay of ADs. To the extent there were disagreements over technical issues that did not impact legal sufficiency, legal counsel's advice on these matters was provided with the understanding that the AIR engineering staff has final responsibility for technical content. To avoid delays in AD issuance, local counsel and the RD staff will interact as early as possible in the AD development process. However, legal concurrence should not be withheld while technical comments are considered.

5. RD operation outside of approved FAA processes and orders

The OIG report states:

*"The Directorate, as well as all Aircraft Certification Offices that process ADs, received a deviation from using the template specified in FAA Order 8040.5 from September 7, 2007, to January 28, 2008. The FAA Chief Counsel's office was to have issued a new template for these ADs by February 1, 2008; however, a new template was not implemented. Thus, Rotorcraft Directorate personnel indicated that they continued to operate as if they still had a valid deviation. A new, open-ended deviation was approved in November 2008 and was still valid at the time of this report." (Allegation 2 Findings, pg 9, 1<sup>st</sup> paragraph)*

The open-ended deviation to FAA Order 8040.5, approved in November 2008, will remain in effect until the Office of Chief Counsel (AGC) and AIR concur on a revision to Order 8040.5. While the situation described by the OIG resulted in a temporary failure of performance in adhering to FAA QMS processes, it was corrected prior to the OIG investigation.

## ATTACHMENT

FAA Response to OIG Investigation #I10A000047SINV

June 21, 2010

### 6. RD modification of the formula for computing the AD QMS metric

The OIG report states:

*"All but the Rotorcraft Directorate used this formula and, as a result, correctly computed the average number of days to issue an AD over a six-month period. However, the Rotorcraft Directorate used a modified formula that understated the average because it included in its calculation months when no ADs were issued." (Additional Information, pg 9, 4<sup>th</sup> paragraph)*

The formula cited in the OIG report was the original formula first introduced in late fiscal year (FY) 2007 for the QMS metrics for IARs and NPRMs. This formula was originally used by all four directorates through the first QMS Analysis of Data (AOD) report for FY 2008. Over the next few reporting periods, the other directorates at various times noted that the formula did not capture the proper average of AD processing time and changed the formula within their versions of the QMS spreadsheet. The discrepancy between formulas was noted at the AIR Management Review for the QMS AOD 2nd reporting period for FY 2009. At this time, AIR management agreed to suspend use of the AD performance measure until the issues with statistical formulation could be corrected.

### Corrective Actions

The FAA took some corrective action starting in April 2009 to address the problems with AD timeliness in the RD, and will enact further near and long term corrective action.

Corrective Action Taken. The FAA took steps to address issues of AD timeliness in the RD as follows:

1. On June 6, 2009, RD management initiated a PAR through the FAA QMS against the RD AD process to establish root causes and require corrective action
2. In the summer of 2009, the RD Standards Staff (ASW-110) performed an inventory of all ADs open within the RD. ASW-110 management met with the local legal counsel (ASW-7) to account for ADs within that office as well. Physical copies of the ADs were cross-checked for accuracy against those shown to be open by the tracking program in place at the time.
3. In the summer and autumn of 2009, the ASW-110 AD Coordinator and Safety Management branch manager surveyed the processes of the other directorates to understand how their AD development process worked and to identify process improvements that the RD could use. As a result, the RD decided to adapt an automated tool used by the Small Airplane Directorate (SAD) to track ADs during their development.
4. In November 2009, RD management created an AD Process Action Team to exclusively work ADs and reduce the existing backlog. This team developed several enhancements to immediately improve the AD process, including:



ATTACHMENT

FAA Response to OIG Investigation #I10A000047SINV

June 21, 2010

- establishing 'electronic' docket information on a shared network drive to store all AD related information
  - establishing periodic AD Board meetings to coordinate proposed AD packages
  - establishing a new MCAI worksheet that provides all the necessary information to the technical writer-editor
5. In November 2009, AIR tasked a subject matter expert (SME) from the FAA Transport Airplane Directorate to perform an independent review of the seven ADs specifically mentioned on pages 4-5 of the OIG report. The SME confirmed that the RD process used to make findings of an unsafe condition, and the process used to determine if an AD should be issued as an IAR, were valid and were executed properly.
  6. In late 2008 and in 2009, prior to the OIG investigation, RD management initiated several disciplinary actions against the technical writer identified in the report. Performance and conduct problems were discussed with the employee during the employee's performance reviews. Disciplinary action was taken in the form of leave restriction and a one-week suspension. In early May 2010, the employee was given a three-week suspension. In June 2010, an Opportunity to Demonstrate Performance (ODP) was implemented for the employee. An ODP is a formal arrangement between the employee and management that stipulates specific performance requirements that must be met in order to satisfy the ODP. Failure to satisfy the ODP can result in additional penalties, including reassignment, reduction in pay, demotion, or dismissal.
  7. The engineer that lost track of 12 ADs was orally counseled on his performance; based on a past history of satisfactory performance and no prior incidents of performance or conduct issues, RD management decided not to implement further action unless performance problems continue. In November 2009 the engineer was re-assigned to the AD Process Action Team to emphasize prioritization of his AD assignments above other work. The misplaced ADs have been located, their status updated, and some have been re-assigned to spread the workload and expedite their processing.
  8. The QMS metric spreadsheet passwords have been reset and password access has been restricted to AIR-200 QMS staff. QMS Persons of Responsibility are now required to coordinate any changes to the spreadsheet with the AIR QMS Management Representative.
  9. On April 22, 2010, the AD cited by OIG as having been open for seven years (2008-SW-72-AD) was issued as an NPRM.
  10. In June 2010, the two ADs originally classified IARs and then subsequently re-classified as NPRMs (2009-SW-18-AD and 2009-Sw-47-AD) were issued as NPRMs.

## ATTACHMENT

FAA Response to OIG Investigation #H10A000047SINV

June 21, 2010

Near-term Corrective Actions Planned. The FAA plans to complete the following near-term corrective actions by the end of 2010, subject to coordination required by agreements with collective bargaining units:

1. The RD will deploy a modified version of an automated AD tracking tool currently in use within the SAD that will replace the existing RD AD tracking system. The deployment will take place in two phases.
  - a. Phase I: New quality and timeliness metrics will be implemented for the individual steps in the AD process to include:
    - where in the process a proposed AD is at any time
    - how long the engineer takes to determine whether an MCAI represents an unsafe condition in the US
    - how long the technical writer takes to draft the AD
    - the date the technical writer and engineer decide the AD is ready for coordinationAlso as part of Phase I, the tool will include an enhancement to allow automatic filling of AD template fields with current data contained on type certificate data sheets stored in the FAA's Regulatory and Guidance Library. This will eliminate potential errors and speed up the process of completing templates. AD historical data within the RD will be imported into the database, and reports will be generated to baseline the status of current ADs within the RD. RD management will meet with the local union representative to discuss and mitigate possible impact and implementation issues.
  - b. Phase II: Additional enhancements will be included in the new AD tracking tool that provide:
    - automation of the AD worksheet to further exploit the mail merge functions of the tool
    - automatic capturing of coordination activity dates
    - enhancement of the tool's reporting capability
2. The inconsistencies between the QMS metric formulas used by the directorates were noted and use of these metrics is suspended for the remainder of the current QMS reporting period. New metrics have been developed and will be implemented with the start of the next QMS reporting period, on October 1, 2010. The revised metrics eliminate the "average of averages" calculation and ensure that statistical accounting of AD processing time is calculated properly.

## ATTACHMENT

FAA Response to OIG Investigation #110A000047SINV

June 21, 2010

Long-term Corrective Actions Planned. The FAA plans to complete the following long-term corrective actions by the end of FY 2012:

1. The AIR Aircraft Engineering Division (AIR-100) will form a group of representatives from the directorates and divisions to define the major steps necessary for tracking the timeliness of ADs and developing an AIR-wide AD process. Metrics to be considered would include:
  - time from service bulletin to unsafe condition decision, including iterations between the FAA and the manufacturer or foreign authority
  - time between decision of unsafe condition and initiation of AD worksheet
  - time between AD worksheet initiation and AD worksheet signature
  - time between AD worksheet signature and NPRM / IAR
  - time between NPRM and issuance of final AD, if applicable

The group will review best practices for work product tracking currently used in the directorates that provide management visibility of the products at each major step. The group will also identify time standards by which each major step should be accomplished and provide further granularity if necessary. The process would allow risk-based decisions to be made by directorates for modifying the milestone time standards in cases where this is warranted.

2. The AGC will work with AIR to revise the MCAI Order by the end of FY2011 to improve the efficiency of the AD process consistent with the responsibilities of both AGC and AVS.

### Conclusion

In conclusion, the FAA recognizes the validity of the OIG allegations and concurs with the need to take immediate steps to correct the problems identified. Corrective actions were implemented, with additional plans for near term correction scheduled for completion by the end of October 2010. We also identified long term plans with actions that encompass processes across the service, to ensure that our four directorates are standardized in their approach and to prevent recurrence. We expect to complete these long term action by the end of FY 2012. We appreciate the effort of the OIG in helping us maintain and improve our processes and thank them for the report documenting the issues.