



THE SECRETARY OF THE NAVY
WASHINGTON DC 20350-1000

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Ms. Carolyn N. Lerner
Special Counsel
U.S. Office of Special Counsel
1730 M Street, N.W., Suite 300
Washington, DC 20036-4505

U.S. OFFICE OF
SPECIAL COUNSEL
WASHINGTON, DC
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Dear Ms. Lerner:

Thank you for your letter of November 22, 2011, requesting an investigation into allegations concerning the Concurrent Certification (ConCert) Program at Fleet Readiness Center Southwest (FRCSW), North Island, California. The Secretary of the Navy has authorized me to respond on his behalf.

The ConCert Program is an effort to improve quality and reduce time and cost that are associated with maintenance activities which facilities, such as FRCSW, perform. The ConCert Program augments the Quality Assurance Specialists (QASs) working in the FRCSW Quality Assurance (QA) Department by granting to a limited number of specially trained Artisan Inspectors (AI) in the Production Department the authority to conduct mandatory Type I "second set of eyes" verification of other artisan's "critical" work.

The complainants allege that in moving the QA verification process from the QA Department to the Production Department, FRCSW created a conflict of interest that presents a danger to public safety. They also allege that some of the artisans who become AIs are not qualified journeymen and that the AI training which they undergo is inadequate to prepare them to perform Type I verifications. Furthermore, the complainants identify specific examples of AIs verifying work that allegedly they had not been trained to verify and improperly stating they verified work without conducting an in-person verification.

The Department of the Navy (DON), through the Naval Inspector General (NAVINGEN), conducted an inquiry into the complainants' allegations. While NAVINGEN was unable to make a final determination regarding the allegations that the ConCert Program presents a danger to public safety, NAVINGEN did note that evidence reviewed to date tends to refute this allegation. NAVINGEN also found nothing during their inquiry that indicated

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that any aircraft should be grounded as a result of the implementation of the ConCert Program. Currently, the Naval Audit Service (NAVAUDSVC) is conducting an audit which will inform NAVINSGEN's final determination regarding this allegation. I have authorized NAVINSGEN to make the results of the NAVAUDSVC audit available to you in a supplemental report as soon as it becomes available and to advise you of the results of any additional efforts that he may undertake that pertain to the matters raised in your letter.

The NAVINSGEN did not substantiate allegations that some of the artisans who become AIs are not qualified journeymen and that the AI training which they undergo is inadequate to prepare them to perform Type I verifications. During the course of investigating these specific allegations, NAVINSGEN determined that AIs appear to be discovering approximately as many defects in work performed by other artisans as the QASs which they replaced. The investigation found that in two specific instances employees inspected work which they were not certified to inspect and that one of those employees also verified an aircraft work order maintenance book after the aircraft had left FRCSW in violation of the FRCSW Quality Manual and established FRCSW procedures.

As a result of this investigation, NAVINSGEN made 31 recommendations for improvement in the ConCert program. The Commander, Naval Air Systems Command (NAVAIR), has already accepted all of these recommendations and taken steps to address them.

In addition, to ensure appropriate oversight, depot-level aviation maintenance will be added to the annual NAVINSGEN and NAVAUDSVC Opportunities and Risk Assessment and Oversight Plan, triggering inspections or audits of aviation depot-level maintenance on a periodic basis. The results of these inspections and audits, in addition to the attached NAVINSGEN report and its recommendations, and the forthcoming NAVAUDSVC audit, which is already underway, will be closely reviewed to assess the performance of the ConCert Program.

I am enclosing two versions of the report of investigation. The first contains names of witnesses and is for your official use. I understand that you will provide a copy of this version to the Complainants, the President, and the House and Senate Armed Services Committees for their review. The second version excludes the names of witnesses and is suitable for release to the general public. As has been the case with other reports

Office of the Naval Inspector General

OSC DI-11-3779, 3872 & 38940

NAVINGEN 201103602

Report of Investigation

2 October 2012

FLEET READINESS CENTER SOUTHWEST, NORTH ISLAND, CA
CONCURRENT CERTIFICATION PROGRAM

Table of Contents

Table of Contents.....i

Preliminary Statement.....1

Information Leading to the OSC Tasking.....1

Summary of Our Findings and Conclusions.....4

 Statement of Allegations Investigated..... 4

 Why We Conclude Allegation One Is Not Substantiated..... 5

 Why We Conclude Allegation Two Is Not Substantiated..... 7

 Why We Conclude Allegations Three - Six are Substantiated.... 8

 Why We Conclude Allegation Seven Is Undetermined At This Time 9

Description of Conduct of Investigation.....10

Summary of Evidence Obtained During Investigation.....15

 Background..... 15

 Description of FRCSW 15

 Description of ConCert Program 16

 Organizational Level CDI/CDQAR Program 17

 Private Sector Practice 18

 SAE ARP 9162 19

 2006 FRCSW ConCert Brief to NAVAIR 20

 2007 FRCSW E-2/C-2 Pilot Program 21

SUITABLE FOR PUBLIC RELEASE (names removed)

FRC Southeast Considers Implementing ConCert 21

2008 Review and Brief at Commanders Conference 22

2009-2010 NAGI Concerns and COMFRC Response 24

2009 ConCert NPS Study 25

COMFRC QWG Benchmarking Visit to Boeing St Louis 26

2011 COMFRC Dept Briefs to Air 4.1.9. AIR-09F (ASO) 27

2011 NAVAIR AMI and IG Inspection of FRCSW 27

NAMP 2B Adding Specific AI Program Management Requirements
Issued May 2012 28

Allegation One 29

Findings 29

 The Complainants' Contentions..... 29

 FRCSW Standards..... 30

 Requirement to Be a Journeyman..... 31

 Complainants' Definition of Journeyman..... 33

 HRSC Specialists' Definition of Journeyman..... 34

 OPM Standards Considered..... 34

 Relationship between Journeyman and WG-10 Positions..... 36

 Use of Experience to Assess Qualification..... 37

 Rating Criteria Used In Selection Process..... 37

 F/A-18 AI AI-3's Qualifications..... 38

 F/A-18 AI AI-4 Qualifications..... 39

 Incomplete IQRS as Evidence of Inadequate Qualification.. 39

 F/A-18 AI AI-5 Qualifications..... 40

 AI-6s Qualifications..... 40

 Comparison of AI and QAS Payscale..... 42

 FRCSW Apprentice to Journeyman Program..... 43

 Using Templates to Falsify Applicant Resumes..... 44

Discussion and Analysis 45

Conclusion 49

Recommended Actions 49

Allegation Two 50

Findings 50

 Description of AI Training Program..... 51

 Conflict Resolution Training..... 54

 Development of Job Qualification Requirements Training Record..... 54

 Complainants' Assertions of Inadequate Training..... 55

 Authority to Conduct Type I Verifications..... 57

 AI Trainees or AIs Removed from Program..... 58

 AI AI-12 Fails to Discover Missing Cotter Pin..... 59

 E-2/C-2 AI AI-13..... 60

 C-2 Aircraft N737 Loose Control Wheel Nut..... 61

Discussion and Analysis 62

Conclusion 65

Recommended Actions 65

Allegation Three 66

Findings 66

Discussion and Analysis 68

Conclusion 69

Recommended Actions 69

Personnel Actions Planned or Taken 69

Allegation Four 69

Findings 69

Discussion and Analysis 70

Conclusion 71

Actions Planned or Taken 71

Recommended Actions 71

Allegation Five 72

 Findings 72

 Discussion and Analysis 73

 Conclusion 74

 Actions Planned or Taken 74

 Recommended Actions 74

Allegation Six 74

 Findings 74

 Basis of This Allegation..... 74

 Definition of Conflicts and Selection of Standards..... 75

 Evidence Establishes AIs Report Only to Production
 Department..... 78

 Pressure to Keep Production Moving..... 80

 Discussions of Risk Analysis in FRCSW Slide Presentations 83

 Discussion and Analysis 86

 Conclusion 87

 Recommended Actions 88

Allegation Seven 89

 Findings of Fact 89

 Discussion and Analysis 90

 Conclusion 90

 Recommended Action 90

Warning Against Reprisal or Retaliation.....91

Observations.....92

Appendix A - Witness List.....A-1

Appendix B - Documents Reviewed.....B-1

Appendix C - Consolidated List of Recommended Actions.....C-1

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2 October 2012

FLEET READINESS CENTER SOUTHWEST, NORTH ISLAND, CA
CONCURRENT CERTIFICATION PROGRAM

Preliminary Statement

1. This report is issued pursuant to a 22 November 2011 Office of Special Counsel (OSC) letter tasking the Secretary of the Navy (SECNAV) to conduct an investigation under 5 USC §1213.
2. OSC is an independent federal agency whose primary mission is to safeguard the merit system by protecting federal employees and applicants from prohibited personnel practices. OSC also serves as a channel for federal workers to make allegations of: violations of law; gross mismanagement or waste of funds; abuse of authority; and a substantial and specific danger to the public health and safety.
3. Reports of investigations conducted pursuant to 5 USC §1213 must include: (1) a summary of the information for which the investigation was initiated; (2) a description of the conduct of the investigation; (3) a summary of any evidence obtained from the investigation; (4) a listing of any violation or apparent violation of law, rule or regulation; and (5) a description of any action taken or planned as a result of the investigation, such as changes in agency rules, regulations or practices, the restoration of employment to an aggrieved employee, disciplinary action, and referral of evidence of criminal violations to the Attorney General.

Information Leading to the OSC Tasking

4. The OSC tasking stems from a complaint OSC received concerning the implementation of the Concurrent Certification (ConCert) Program for aircraft maintenance at the Fleet Readiness Center, Southwest (FRCSW), North Island, CA. ConCert is an FRCSW effort to improve quality while reducing the time and cost associated with the maintenance effort performed by "depot level" maintenance organizations such as FRCSW. In support of its 2007 decision to implement a pilot ConCert program, FRCSW points to "operator self-verification" programs

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that companies such as Boeing and Northrop Grumman Corporation (NGC) employ in performing similar maintenance work, and to "organizational level" aircraft maintenance performed by Navy and Marine Corps aircraft operating units, often referred to as the "Collateral Duty Inspector" or "CDI" and "Collateral Duty Quality Assurance Representative" or "CDQAR" programs.

5. ConCert represents a significant "cultural" change to FRCSW's approach to inspecting or "verifying" the maintenance work performed by skilled FRCSW production workers, called Artisans.¹ Traditionally, Quality Assurance Specialists (QASs), who work in the FRCSW Quality Department,² have performed the verification process. ConCert shifts the primary responsibility for verification of an Artisan's work to another Artisan who has been trained in verification techniques and earned the right to be called an "Artisan Inspector" or "AI."

6. While senior FRCSW personnel insist that when verifying the work of other Artisans the AI is "working for" the Quality Department, the facts we developed demonstrate that at all times the AI remains in the Production Department, continues to spend the majority of his or her time performing maintenance work, and always reports to a Production Department Supervisor, even when performing the AI function. Ideally, an AI spends 80% of his or her time performing maintenance, and 20% of his or her time verifying Artisan maintenance work and maintenance performed by other AIs. At FRCSW, AIs may not verify their own work. Although the QA Department verifications performed by a QAS are charged to overhead, all AI work, including verification, is charged to production. Consequently, to the extent ConCert reduces the number of QASs employed at FRCSW, it reduces indirect costs and arguably turns AI verification into a direct, rather than indirect, cost.

¹ Inspection and verification have related but distinct meanings in the naval aviation maintenance community. The Naval Aviation Maintenance Program instruction, discussed later, defines inspection as the "examination and testing of supplies and services, that include raw materials, components, and intermediate assemblies, to determine whether they conform to specified requirements." The FRCSW Quality Manual, FRCSW 4855.1, 10 Jan 2010, defines verification as "a method of objective evaluation employed by QA personnel to determine and measure the effectiveness of the Certification Program" and "Certification," performed by artisans, as "documented evidence that an individual has inspected his/her own work and confirmed that all product characteristics affecting the quality of that product conform to applicable work documents, specifications and quality requirements.

² The formal title is the "Industrial Quality and AIRSpeed Department," but most witnesses refer to it as the Quality Department, so we will, too.

7. Under ConCert, the QAS still plays an important role in the program. A QAS will periodically "spot check" or verify a sampling of an AI's inspections.³ Selected QASs also evaluate and rate applications for AI positions, and other QASs conduct the AI training program, conduct audits and monitor metrics. Moreover, once an aircraft leaves the shop and goes to the flight line for testing, only a QAS may perform the flight line verification effort, which is extensive. Nonetheless, everyone we spoke to during this inquiry agrees that ConCert represents a major cultural shift in the approach to quality assurance.

8. In its tasking letter, OSC identified the complainants as Mr. John Valarinos, a retired Quality Assurance (QA) Specialist from Fleet Readiness Center Southeast (FRCSE), Jacksonville, FL, and Ms. Linda Guerra and Mr. Victor Juarez, who are QA Specialists at FRCSW. Hereafter, we refer to them collectively as the "Complainants." OSC told us that the Complainants consent to the public release of their names.

9. The Complainants told OSC and our investigators that some of the people FRCSW selects for the AI training program do not have sufficient skills as Artisans (are not "qualified"), and cited specific examples. The Complainants told OSC and our investigators that the AI training program is inadequate, implying that new AIs are not qualified to verify the work of other artisans, and cited specific examples. The Complainants also cited examples of AIs verifying work they had not been trained to verify, and of saying they had "verified" work without actually conducting a hands-on, in-person verification of the aircraft. The fundamental concern over ConCert expressed by the Complainants, however, is that in moving the QA verification process from the QA Department to the Production Department, FRCSW has created a "conflict of interest" that creates a danger to public safety.

10. OSC provided the following summary of the Complainant's allegations:

The whistleblowers disclosed that in January 2007, the Navy initiated ConCert as a prototype program. In March 2010, ConCert was converted from a prototype program and implemented in Avionics, followed by implementation in the

³ A QAS also performs "confidence inspections" before E-2/C-2 aircraft leave the shop to ensure an artisan or AI has not overlooked "foreign object debris" (FOD) and to address other E-2/C-2 quality concerns. FRCSW added this requirement early in the E-2/C-2 pilot program, but has found it unnecessary to add to other product lines.

Vertical Lift Program (helicopters), and most recently in the F/A-18 Program. The whistleblowers contend that ConCert has compromised the quality assurance process and overall flight safety for Depot-level aircraft work. According to the FRCSW training course on the program, ConCert was designed to provide cost savings and schedule reduction by shifting QA roles for the E-2/C-2 and now the F/A-18 aircraft to the Production Department. This gives the Production Department ownership of both aircraft product rework and product verification. To achieve this, ConCert promotes Production Department employees, most of whom are at the WG-8 level, to the position of Artisan Inspector (AI), WG-11. . . . Furthermore, the whistleblowers specifically note that AIs still report to their Production Department supervisors, and are expected to conduct quality verifications on the work completed by their Production Department colleagues. These are the same verifications that were previously conducted by QA Specialists, who report to a chain of command within the Quality Assurance Department and are not critiquing the work of their own colleagues. . . . Furthermore, the whistleblowers alleged that this inherent conflict of interest leads to AIs signing off on work completed by their Production Department colleagues without actually conducting a product verification.

11. After reviewing the complaint, OSC concluded there is a substantial likelihood the information provided by the Complainants may disclose gross mismanagement and a substantial and specific danger to public safety.

Summary of Our Findings and Conclusions

Statement of Allegations Investigated

12. SECNAV treats most OSC taskers sent to him pursuant to 5 USC 1213 as requests for Inspector General (IG) investigations and refers them to the Naval Inspector General (NAVINGEN) for action. Whenever possible, IG investigations should identify a specific standard (usually a law or regulation) against which to evaluate the conduct in question. We tried to do so in this case, but found that three of the most critical matters presented by the tasker do not lend themselves to this approach. Consequently, we formulated more generic allegation statements for them. Thus, this report addresses the following allegations:

a. Allegation One: That FRCSW management failed to hire qualified candidates for AI positions.

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- b. Allegation Two: That FRCSW management failed to suitably train AI trainees to perform AI functions.
- c. Allegation Three: That FRCSW E-2/C-2 AI-1 verified mechanical work when he was only certified to verify electrical work, in violation of the Appendix 7-D, paragraph 5.d, subparagraph 3 of the FRCSW Quality Manual⁴.
- d. Allegation Four: That FRCSW F/A-18 AI-2 verified machinist work when he was only certified to verify sheet metal work, in violation of Appendix 7-D, paragraph 5.d, subparagraph 3 of the FRCSW Quality Manual.
- e. Allegation Five: That on March 28, 2011, FRCSW E-2/C-2 AI AI-1 certified the aircraft operation work order maintenance book for an aircraft that was returned to squadron custody on March 15, 2011, in violation of the Chapter 4, Paragraph 4, section e.7 of the FRCSW Quality Manual.
- f. Allegation Six: That, before moving the Type I verification function from the Quality Department to the Production Department, FRCSW did not perform an operational risk management analysis conforming to the criteria set forth in OPNAVINST 3500.39C, Operational Risk Management.
- g. Allegation Seven: That ConCert increases the risk to safety of flight and consequently poses a substantial and specific danger to public safety.

Why We Conclude Allegation One Is Not Substantiated

13. Our inquiry into Allegation One did not enable us to identify meaningful criteria the supporting Human Resources Office (HRO) actually uses to evaluate applications for AI positions. Nor could we correlate the criteria the HRO uses with the criteria FRCSW rating panels (which include QA personnel) use to rate the "qualified" applicants forwarded by the HRO Office when selecting those best suited to be accepted into the AI training program. Nonetheless, we conclude **Allegation One is not substantiated** for the reasons indicated in the following paragraphs. We note, however, that the Naval Audit Service (NAVAUDSVC) also is performing a limited scope audit with three objectives,⁵ discussed in paragraph 43 that it

⁴ As noted previously, the Quality Manual is FRCSWINST 4855.1, dated 10 Jan 2010. This version includes specific information on the ConCert Program.

⁵ At this time, NAVAUDSVC is not conducting a full program audit of FRCSW depot level maintenance, but see our discussion in paragraphs 28 and 373.

expects to complete by the end of 2012 or early 2013. Our conclusions for allegation one may change after reading the results of that audit.

14. The criteria identified by HRO and FRCSW witnesses included such terms as "experienced" and "journeyman," but they provided no objective definition of those terms that we found useful for this inquiry until July 2012, when HRSC personnel responsible for evaluating applications said a journeyman is an FRCSW WG-10 artisan or the private sector equivalent. This information was confirmed by the FRCSW Corporate Operations Director in August. We found that 85% (74 of 87) FRCSW AIs were WG-10 artisans when accepted into the AI program. Using this standard, we would conclude that the 13 AIs who were WG-8s when selected to become AIs were not qualified. However, doing so would require us to say that artisans with extensive military and private sector experience were "not qualified" simply because they had to accept WG-8 positions in order to enter the FRCSW workforce. All 13 AIs who were WG-8s when hired into the ConCert program had prior related military and/or private sector experience.

15. Most witnesses agreed that artisans who had three to four years experience performing aircraft maintenance could be considered journeymen or to have the requisite experience for acceptance into the program, although one of the Complainants thought they should have at least eight years of experience. Our review of the resumes of artisans accepted into the AI program revealed that all but two of the 87 AIs had performed related aircraft maintenance for between three and 39 years before being selected for the AI program; 82 of the 87 had at least four years experience; 51 of the 87 had 10 or more years of experience. When averaged, the typical artisan selected to join the AI program had 15 years of related maintenance experience. Typically, this experience was gained while serving in the Navy or working at FRCSW or another Navy depot level maintenance facility; 12 graduates of the four year FRCSW apprenticeship program became AIs. Some private sector artisans had worked alongside FRCSW artisans as contractor employees before joining the federal civilian workforce.

16. In reaching our conclusion that most of the artisans hired by FRCSW are qualified to be selected for the AI program, we also give substantial weight to the fact that, based on the number of defects reported since 2007, AIs appear to be discovering as many defects (12.04% of verifications performed) in work performed in the shop by other artisans as did the QASs they have replaced (12.11%).

Why We Conclude Allegation Two Is Not Substantiated

17. The NAVAUDSVC limited scope audit will also support Allegation Two. NAVAUDSVC estimates completion by the end of 2012 or early 2013. Subject to any contrary evidence the audit develops, we conclude **Allegation Two is not substantiated.**

18. The criteria by which to measure AI trainee proficiency are constantly evolving. Some changes have been made while this inquiry has been in progress. Contrary to the assertion of one of the Complainants, we view this as positive and commend Quality Department leadership for making them. The Complainants tended to focus on the completeness of artisan Individual Qualification Records (IQRs) used to document artisan skills, or Job Qualification Requirements forms (JQRs) used to document AI trainee knowledge and training as they progress through on-the-job (OJT) training, arguing that incomplete IQRs and JQRs prove incompetency. But FRCSW does not use IQRs to make AI selections, and a new hire may not have an IQR, no matter his or her experience. Likewise, in its current form, the JQR template lists the knowledge required for all of the trades in the Concert Program, but each AI needs only be trained in the skills applicable to the trade that AI will inspect, so blanks in certain areas do not always mean the AI was not adequately trained in the work that AI will inspect. While we found some deficiencies in documenting individual AI trainee progress that may be evidence of "gun decking"⁶ or "pencil whipping" their satisfaction of proficiency requirements, we conclude the most meaningful measure of program success is the increase or decrease in the number of "escapes" or undetected workmanship defects that result when AIs inspect or "verify" work that had been inspected by a QAS before ConCert.

19. The anecdotal evidence suggests that new AIs actually report more artisan errors or defects than did the QASs who previously performed artisan verifications in the shop. Over time, this tends to even out and data on overall defect reporting rates since 2007 for AIs (12.04% of observations) is now virtually identical to that for QASs (12.11%). Likewise, the QAS verifications performed on the test flight line indicate the number of defects that escape the shop undetected are remaining constant or going down. Perhaps of most importance, the number of test flights (functional check flights (FCF)) required before the test pilots consider an aircraft ready to

⁶ "Gundecking or Pencil Whipping" is a term used for falsifying a record.

return to the fleet also appears to have declined.⁷ On a cautionary note, however, NAVAUDSVC has informed us of concerns in the fleet over the quality of E-2/C-2 maintenance work in the aircraft returning from FRCSW, which is the only depot performing E-2/C-2 maintenance at this time.

20. The reader should note that, currently, QASs train AI candidates and decide when each is ready to perform AI functions independently. As noted, the NAVAUDSVC audit will attempt to determine whether the E-2/C-2 customers in the fleet who receive the aircraft upon completion of FRCSW maintenance and flight line testing perceives the deficiencies are going up, down, or remaining constant. However, a study of 2007-2009 ConCert pilot program published in 2010 by naval officers pursuing a Masters Degree at the Naval Postgraduate School points out the possibility that other ongoing process improvements at FRCSW could be masking any deleterious effects the ConCert program may have on quality. A NAVAUDSVC statistician who reviewed that study agrees that the methodology FRCSW uses to demonstrate ConCert's success does not appear to isolate ConCert from the effects of other programs.

Why We Conclude Allegations Three - Six are Substantiated

21. We found that **Allegations Three, Four, and Five are substantiated**. When confronted with documentary evidence of their violations, AI-1 and AI-2 admitted the violations with excuses. Contrary to the Complainants' allegations, the AIs hired to work in the vertical lift and F/A-18 programs appear to be performing better than the more "experienced" artisans previously hired to work in the E-2/C-2 pilot program. Further, the "defect free rate" (DFR) for those production lines continues to be significantly better than for the E-2/C-2 program (about 97% DFR versus 69%).

22. We use OPNAVINST 3500.39C, Operational Risk Management, to address the "conflict of interest" concerns raised by the Complainants. Subject to obtaining evidence that FRCSW has performed a risk analysis that conforms to the requirements set forth in the instruction and the results of the NAVAUDSVC audit, **we conclude Allegation Six is substantiated**.

23. Our examination of the standards that expressly refer to conflicts of interest, such as the Federal Acquisition

⁷ In addition to demonstrating a reduction in defects that "escape" the shop, a decrease in the number of FCFs significantly reduces the cost and time required to return an aircraft to the fleet.

Regulation (FAR), the Office of Government Ethics (OGE) Standards of Ethical Conduct, and Department of Defense Joint Ethics Regulation, leads us to conclude they do not apply to the decision to move selected verification functions from the FRCSW Quality Department to the FRCSW Production Department. The concerns raised by Complainants are more appropriately evaluated by examining a related, but distinct issue - the impact ConCert has on the objectivity and independence of the AI or QAS who conducts any verification of maintenance work deemed necessary.

24. The decision to inspect a specific maintenance operation at all is determined by Engineers and Logisticians based upon a particular system's design and maintenance planning documentation. Critical Inspections are specified based upon characteristics the Engineers identify as critical with the potential for flight safety impact if the operation is performed improperly. We believe the concept of Operational Risk Management as practiced within the Department of the Navy (DON) is the appropriate mechanism by which to evaluate the risk created by ConCert's shift of some verifications from the QAS, who works in the Quality Department, to the AI, who works in the Production Department. We agree that the decision FRCSW made directly impacts the independence and objectivity of those verifications. The question then becomes whether any benefits obtained outweigh any increase in risk.

25. The stated purpose of ConCert is to improve quality while simultaneously reducing the cost and time associated with depot level maintenance. To date, the evidence presented by FRCSW does not persuade us that quality has improved significantly or that the cost or time to perform maintenance at FRCSW has decreased. At best, the evidence suggests ConCert has had no adverse impact on any of these factors, which leads us to question whether the cultural shift and its attendant workforce disruption is worth the effort. Our conclusions are subject to the provision of more persuasive evidence by FRCSW or NAVAUDSVC.

Why We Conclude Allegation Seven Is Undetermined At This Time

26. We believe whether ConCert improves quality, and hence safety of flight, is best determined through a review of the findings made in the squadrons - the FRCSW customers - when aircraft are returned after completion of Depot Level maintenance. While data provided by FRCSW personnel appears to suggest overall quality has been maintained and that critical safety of flight defects are going down, we have not yet determined how best to analyze this data.

27. NAVAUDSVC has informally indicated that some customers of the E-2/C-2 aircraft, the only product line NAVAUDSVC has examined to date, have said they believe quality is getting worse. Moreover, these customers have identified a number of critical defects found in the aircraft returned to the fleet that FRCSW refuses to acknowledge (accept), thus raising concerns about the accuracy of FRCSW defect rate assertions.

28. Since the ongoing NAVAUDSVC audit focuses only on three objectives pertaining to the E-2/C-2 program, NAVINGEN will add Depot Level Maintenance to the annual Opportunities and Risk Assessment Analysis that it and NAVAUDSVC prepare for senior Navy leadership to consider and will recommend that NAVINGEN and/or NAVAUDSVC conduct an inspection, program audit, or similar review of the program in 2013.

29. Consequently, we have added allegation seven to ensure the reader does not reach the conclusion that our inquiry has affirmatively determined ConCert does not increase the risk to safety of flight. In our opinion, that question remains unanswered at this time. Nothing in this report, however, is intended to suggest we believe any aircraft should be grounded as a result of the implementation of ConCert at FRCSW, and we are opposed to such action based on information available to us at this time.

Description of Conduct of Investigation

30. SECNAV referred the OSC 22 November 2011 tasking letter to NAVINGEN for investigation. NAVINGEN assigned case number 201103602 to the matter and forwarded the complaint to the IG at Commander, Naval Air Systems Command (NAVAIR), directing the NAVAIR IG to conduct an investigation.

31. NAVAIR IG personnel, with the assistance of NAVINGEN, Commander Fleet Readiness Center (COMFRC), and Naval Air Warfare Center Weapons Division (NAWCWD) investigators and subject matter experts (SMEs) conducted interviews, collected documents, and drafted a report of investigation. During the inquiry they conducted 104 formal interviews of Complainants, Subjects, and Witnesses. They reviewed over 1000 documents.

32. A team of NAVAIR IG investigators conducted interviews at FRCSW during the week of 6 December 2011 to address the safety concerns raised by this case. While these initial interviews did not identify safety of flight issues, they did confirm the alleged violations by specific individuals mentioned in the OSC tasking letter. They did not reveal violations by other AIs. These interviews raised concerns that ineffective AI candidate English skills were impeding program effectiveness. These

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interviews also identified duplicate resumes that raised concerns about falsification of applications.

33. In December 2011, the NAVAIR IG also reviewed an FRCSW inspection it had performed that raised some concerns about the ConCert program. Those findings are discussed in the background section of this report, which provides a chronology of events.

34. The NAVAIR IG investigators learned the NAVAIR Aviation Maintenance Management Team (AMMT) conducted a regularly scheduled FRCSW Aviation Maintenance Inspection (AMI) between 14 February and 4 March 2011.⁸ The results of that 2011 AMMT are discussed in this report's background section.

35. The lead NAVAIR IG investigator returned to FRCSW to conduct additional interviews on 26 - 27 January 2012. Her goal was to obtain more evidence and identify specific criteria used to select artisans for entry into the AI program and train them to perform that function.

36. Also in January, the Naval Inspector General concluded the OSC tasking letter required the Navy to determine whether the benefits of shifting the quality assurance or verification function from the QAS assigned to the Quality Department to the AI assigned to the Production Department outweighed any increased risk that might result. To that end, by memo dated 23 January 2012, he requested NAVAIR and/or Commander, Fleet Readiness Center (COMFRC) provide a program brief addressing:

a. Origin of the ConCert/AI concept and program, to include a discussion of the private sector program, the applicability of that program to depot level maintenance, and the goals and objectives to be achieved by the program;

b. Nature and extent of higher level consideration, review, approval or authorization for any FRCSW "pilot program" or similar program to test the effectiveness of ConCert/AI;

c. Evaluation criteria employed to determine the success of the program, to include any risk analysis or assessment;

d. Results to date, to include benefits obtained and risks identified and evaluated; and

⁸ The NAVAIR AMMT's primary focus is to evaluate and assist activities in their ability to support operational requirements. Using statistical and practical methods, An AMMT evaluates performance and identifies areas requiring improvement relating to operational efficiency and effectiveness, safety, and instructional compliance.

e. Plans to continue and possibly expand the scope and or application of the program, especially to other FRCs.

37. RDML Jeffrey PenAI-6, COMFRC, presented the requested brief to VADM James Wisecup, NAVINGEN, and VADM David Architzel, Commander NAVAIR, on 6 February 2012.

38. Information provided during the brief presented is discussed in other sections of this report. However, after the briefing, the NAVAIR IG told RDML Penfield AI-6 of concerns raised by the earlier NAVAIR IG FRCSW inspection and pointed out that the 2011 AMI did not examine the ConCert program in detail. RDML Penfield AI-6 immediately assigned SME-1, Director of COMFRC Business Operations,⁹ to review all documentation and testimony obtained to that point of the investigation in order to recommend actions COMFRC should take, with emphasis on Safety of Flight issues.

39. On 17 February 2012, SME-1 sent a memo to RDML PenAI-6, COMFRC, containing his findings and recommendations. SME-1 memo states:

After reviewing all of the documents and records to include Acceptance Inspection Deficiency Reports (AIDR's), AMMT inspection results, Quality Correction Notices (QCN), Discrepancy Work Orders (DWO), current Naval Aviation Maintenance Program (NAMP) Policy, FRCSW Quality Program Instruction (FRCSWINST 4855.1) and testimony in support of the on-going investigation on the Concurrent Certification (ConCert) Quality Program, I do not personally feel that there is an impending risk to safety of flight for any of the aircraft that FRCSW has delivered since the rollout of this program. Additionally, I can find no evidence of anyone signing off on any maintenance action that they did not inspect, including those who may have felt pressured.

That said, I believe it is in COMFRC's best interest, and the best interest of all parties involved, that we request a thorough assessment with a formal report on the FRCSW Quality Assurance Program with special attention given to

⁹ SME-1 is an Aerospace Engineering Duty Officer (1520 Designator) with an Aerospace Maintenance (AMD) Specialty. Previous assignments include: Commanding Officer FRC Northwest; Aircraft Intermediate Maintenance/Material Control Officer, CVN 72 (Lincoln); Aircraft Maintenance Quality Assurance Officer, CVN 65 (Enterprise); and Aircraft Organizational Maintenance Officer, VC 6. His wealth of knowledge in the maintenance area provided investigators useful insight. SME-1 was promoted to the rank of Captain on 1 July 2012.

the ConCert Program ... I further recommend that this assessment be performed by the NAVAIR 5.0D AMMT Team. ...

In summary, I do not feel that any of the end products produced by FRCSW pose any kind of a Safety of Flight situation based on the information I reviewed in this case. Additionally, I feel that the ConCert Program is an accepted industry practice and it could serve the FRC's well provided we ensure all critical functions are performed in accordance with the existing guidelines."

40. SME-1 also sent RDML Penfield a memo dated 24 February 2012 to be used during the assessment with the minimum recommended focus areas in the FRCSW Quality Program. RDML Penfield accepted SME-1's recommendations and the NAVAIR AMMT conducted another AMI of FRCSW from 27 - 29 February 2012. The AMI used COMNAVAIRFORINSTR 4790.2A Naval Aviation Maintenance Program (NAMP)¹⁰, the FRCSW Quality Manual,¹¹ and focus areas recommended in SME-1's memo to conduct the assist visit. The AMMT examined the Quality Department, with an emphasis on the ConCert Program and AI responsibilities. Although the AMI identified some discrepancies, the AMMT members found that FRCSW personnel have a solid understanding of the ConCert Program and ConCert tenets are in line with NAMP Quality expectations.

41. Much of the focus of the assist visit was on the AI IQR and JQR. The assist visit developed no Safety of Flight concerns, and most of the deficiencies noted were related to discrepancies with IQR's and JQR's.

42. Upon further review of the progress of the investigation and the work of the AMMT, the Naval Inspector General concluded it was necessary to interview more of the AIs, especially those that had been selected to work in the F/A-18 program, due to the

¹⁰ The NAMP is sponsored and directed by the CNO and implemented by Commander, Naval Air Forces (COMNAVAIRFOR). The NAMP Instruction, COMNAVAIRFORINST 4790.2 series, addresses maintenance policies, procedures, and responsibilities for the conduct of the NAMP throughout naval aviation. COMNAVAIRFORINST 4790.2A has been in effect since 2005 and does not expressly address ConCert. FRCSW and COMFRC personnel state there is nothing in 2A that expressly prohibits ConCert, and this report explains why the Complainant's assertion that AIs violate one paragraph in it is not well founded. In May 2012, COMNAVAIRFOR released COMNAVAIRFORINST 4790.2B to expressly address ConCert AIs and the minimum requirements of the program. The revision allows, but does not require, use of ConCert at an FRC.

¹¹ The purpose of the FRCSW Quality Manual is to establish and update the FRCSW Quality Program policy and procedures to control and continually improve all FRCSW products, processes and services per COMNAVAIRFORINST 4790.2 series.

Complainants' concerns over implementation of that program and to get a more complete picture of what was occurring.¹² A joint NAVINGEN and NAVAIR IG team visited FRCSW during the week of 16 April 2012 and interviewed 48 additional FRCSW employees including Artisans, AIs, QASs, and program managers for a total of 104 formal interviews. In total, 49 of the 87 AIs now in the program, or 56 percent of all current AIs, were interviewed.

43. The Naval Inspector General also concluded certain aspects of the ConCert Program could best be addressed by an audit. The Auditor General of the Navy agreed, and by memo of 13 April 2012, NAVAUDSVC announced Audit Number 2012-144, "Fleet Readiness Center Southwest Concurrent Certification Program." This limited scope audit, scheduled for completion in late 2012 or early 2013, includes the following audit objectives:

a. Assess the hiring practices used for selecting the Concurrent Certification Program AI employees to determine if the appropriate qualification criteria are met;

b. Determine if Concurrent Certification Program implementation will generate the projected personnel salary cost savings; and

c. Verify if the implementation of the Concurrent Certification Program for the production line quality inspection process is effective and achieving favorable customer satisfaction responses.

44. Members of the NAVAIR/NAVINGEN IG team also conducted additional interviews at NAVAIR IG Patuxent River, MD, the Marriott in Washington DC, and the Pentagon.

45. Investigators and SMEs reviewed interviews and documents obtained during this investigation for Safety of Flight concerns, but no such concerns were identified.

¹² While interviews conducted in December and January revealed there is pressure to get the work done quickly, the interviews did not identify AIs who said they had compromised their inspection efforts. The interviews conducted in April focused on determining what other AIs had experienced, especially those hired into the F/A-18 program, to determine whether any of them believed they had compromised their inspection efforts. The investigators placed emphasis on determining whether Production Department superiors told AIs to accept nonconforming work. The investigators developed no such evidence. On the contrary, the few problems noted arose from actions of Quality Department personnel who allegedly told AIs to verify work they were not authorized to inspect or who told a QAS to certify AI candidates the QAS thought were not ready to receive their "stamp."

Summary of Evidence Obtained During Investigation

Background

Description of FRCSW

46. FRCSW is a depot-level aviation maintenance¹³ facility located at Naval Air Station North Island, Coronado, California. The Command provides comprehensive quality support to our nation's aviation warfighters through the overhaul, repair, and modification of Navy and Marine Corps front line tactical, logistical, and rotary-wing aircraft and their components. FRCSW has provided naval aviation maintenance support under one name or another since 1919.

47. FRCSW repairs and maintains Navy and Marine Corps aircraft, including the F/A-18 Hornet, AV-8B Harrier, H-60 Seahawk, H-53 Super Stallion, E-2C Hawkeye and C-2A Greyhound. The AI-6 Service On-Site Facilities at FRCSW are central to providing flexible maintenance solutions to the Fleet. Having the capability to move artisans, material, equipment and tooling to the work site reduces downtime and the need to transport assets to higher level repair locations.

48. FRCSW AI-6 Service On-Site Facilities include Marine Corps Air Station (MCAS) Miramar and Marine Corps Base (MCB) Camp Pendleton in California, MCAS Yuma in Arizona, and MCAS Kaneohe Bay in Hawaii.

49. FRCSW is a Working Capital Fund organization that operates in conformance with the provisions of Title 10, United States, Code, Chapter 146, "Contracting for Performance of Civilian Commercial or Industrial Type Functions." Pursuant to the provisions of that chapter, FRCSW may compete for work with other federal depot-level repair facilities and private contractors may compete for some of the work that FRCSW might otherwise perform. Consequently, time and cost of performance, in addition to quality of work, are important to FRCSW success.

50. FRCSW practices have been the subject of two other OSC 1213 investigations. In 2002, the Naval Inspector General determined the FRCSW Voyage Repair Team had produced nonconforming welds in

¹³ Naval Aviation Maintenance is performed at "organizational," intermediate," and "depot-level" facilities. See 10 USC 2460 for a definition of depot-level maintenance and repair. These terms are further defined in the NAMP. An excellent summary of the aviation maintenance program, with emphasis on the ConCert program, is found in the 2010 Naval Postgraduate School report discussed later in this report.

the catapult hydraulic piping systems of five aircraft carriers.¹⁴ These defects were related, in part, to violations of the applicable FRCSW Quality Manual and the practice of allowing personnel to make and inspect welds for which they had not been trained and certified, or who had allowed their certification to lapse. The findings led to the rework of these welds, but, due to the margin of safety included in their design, the Naval Inspector General concluded the nonconforming welds posed no immediate danger to safety. In 2006, the Naval Inspector General determined artisans were not using the proper torque screwdrivers to tighten screws on F/A-18 generator control units and there was an unreasonable delay in obtaining these tools after the discrepancy was brought to the attention of management, including Quality Department personnel.¹⁵ Due to the nature of this work and the design of the units, the Naval Inspector General concluded the nonconforming procedure did not create an immediate danger to safety.

Description of ConCert Program

51. The Concurrent Certification (ConCert) Program is a FRCSW developed program in which qualified AIs are designated and granted the authority to verify other Artisans' production work. FRCs customarily allow only Quality Assurance Specialists (QAS) to do product verification. FRCSW leadership maintains it conceived the ConCert Program as a way to adapt for its use the "operator self-verification" program used by aerospace industry companies such as Boeing and Northrop Grumman (NGC), who allow production personnel to inspect or verify their own work in conformance with established industry standards such as SAE ARP 9162. Since FRCSW does not allow AIs to inspect their own production work, ConCert is more like the process employed by Navy organizational-level maintenance organizations, which use selected military production personnel, called "Collateral Duty Quality Assurance Representatives" or CDQARs to verify the production work of other military personnel. The commonly acknowledged risk of using production personnel instead of full time inspectors or QASs who work in a Quality Department is the potential for production pressure created by schedule and/or cost priorities to impact thorough quality inspections.

¹⁴ See OSC DI-00-0139, NAVINGEN 20020058. At that time, FRCSW was called the Naval Aviation Depot, North Island.

¹⁵ See OSC DI-06-0782, NAVINGEN 200600171, NAVAIR H2006-026. At that time, FRCSW was called the Naval Air Depot, North Island.

52. The ConCert pilot was implemented in December 2006 with the E-2/C-2 aircraft, followed by the Vertical Lift Platform in February 2011, and then the F/A-18 aircraft in October 2011. We could not find a record that establishes the exact date of transition from a pilot to full production program, but a slide dated 20 Oct 2009 shows COMFRC expressed support for deployment on that date.

Organizational Level CDI/CDQAR Program

53. Chapter 7 of the NAMP describes the naval aviation quality assurance program at each level of maintenance, defines key terms, and establishes the requirements for quality assurance. For years, fleet aviation squadrons, where organizational level maintenance is typically performed, have employed young military personnel to do organizational level maintenance upon completion of basic and advanced technical (A-school) training.

54. More experienced sailors who perform similar work in the squadron are assigned responsibility for inspecting the work performed by the younger sailors and other experienced sailors. These experienced personnel are called Collateral Duty Inspectors (CDIs), Collateral Duty Quality Assurance Representatives (CDQARs), or Quality Assurance Representatives (QARs), depending on their experience, training and the functions they perform. CDIs and CDQARs also perform production work, but they are not allowed to verify their own work, a process known as "self-verification" in the private sector. QARs may perform maintenance and repair work as needed. QARs may monitor or verify CDI inspections or verifications. CDIs only inspect work designated as non-critical. CDQARs and QARs may inspect critical work.

55. The process of training and qualification for CDI and CDQAR personnel at the organizational level has existed for many years and is quite rigorous. FRCSW asserts it has modeled the ConCert program it is using for depot-level maintenance after the CDI/CDQAR program used in the Fleet for organizational level maintenance. The functions performed by ordinary artisans are similar to those performed by the less experienced sailors (technicians) in the fleet; the AI functions are similar to those performed by the CDQAR; and the functions performed by the QAS under ConCert, who monitors or verifies a sample of the verifications performed by each AI, are similar to those performed by the QAR. The QAS does not perform maintenance tasks, however.

56. During the course of our inquiry, we did not obtain sufficient evidence to determine whether the rigor of the

CDI/CDQAR selection and training process also is present in the FRCSW ConCert program.

Private Sector Practice

57. In January 2003, Navy personnel attended the "Inaugural Self-Inspection Summit" hosted by NGC in El Segundo, CA. At this conference, "self-inspection" was defined as a process whereby mechanics are authorized to "ensure the integrity" of their work through a program of controlled "self-inspection. In effect, mechanics "buy-off" on their own work.

58. Presentations at the conference identified such benefits as (1) mechanics would be more involved with process improvements; (2) mechanics would be more aware of the requirements for accuracy; (3) mechanics would be more cognizant of customer requirements and expectations; (4) self-inspection would leverage work process initiatives such as "Lean initiatives" by contributing to uninterrupted work flow; (5) it would help meet affordability targets and (6) it would produce higher quality.

59. A presentation of the NGC program suggested that the "traditional" inspector to mechanic ratio could be reduced; NGC experience indicated the ratio was 10-14% before introduction of the program, but had been reduced to 5% or less after the introduction of the program, even though more inspections were being conducted by the mechanics themselves. The NGC presenter also provided a defect trend analysis that indicated the defect rate had gone down after the introduction of self inspection.

60. During the conference, CDR (now RDML) C.J. Jaynes, who was then the Officer-in-Charge at AIMD Lemoore,¹⁶ gave a presentation comparing the concept of self-inspection to the Navy's squadron (organizational) and intermediate level quality programs. Her presentation emphasized the difference in age, experience and turnover rates between the organizational level military workforce and the typical private sector workforce, indicating that the military tempo and environment required a "second second of eyes" be involved to assure the quality of work performed in those environments.

61. By contrast, DCMA-1, who was the F/A-18 E/F/ Support Program Integrator at Defense Contract Management Agency, NGC,

¹⁶ AIMD Lemoore, now FRC West, was an intermediate level maintenance facility. RDML Jaynes now holds positions at NAVAIR, where she is Assistant Commander for Logistics and Industrial Operations, and COMFRC, where she is Commander Fleet Readiness Center, the position previously held by RDML Penfield AI-6.

presented a favorable view of the improvements NGC had made in implementing the self-inspection program. He suggested, however, that "training of mechanics and manufacturing managers to take ownership of the total process can be a challenge." He also suggested the need to align mechanic goals and incentives with quality, indicating individual performance appraisals should not be based solely on schedule performance, but should also focus on defect detection, prevention, and correction.

62. Our conversations with Boeing and N-G Quality Department leaders revealed that they train most of their artisans to perform self-verification functions, believing this builds in "quality at the source" by reducing variation and defects to be discovered by others during inspection. By comparison, we learned of no plans to extend the FRCSW ConCert program beyond the relatively low percentage of artisans necessary to accomplish the Type I verifications that traditionally were performed by a QAS.

SAE ARP 9162

63. SAE international (formerly known as the Society of Automotive Engineers) is an organization for engineering professionals that develops consensus standards for engineering in the aerospace and automotive industries. It has promulgated SAE Aerospace Recommended Practice (ARP) 9162, the current edition of which is 2005-05, in order to standardize operator self-verification processes in the aerospace industry with the objective of establishing common practices to improve quality and safety, decrease costs, and eliminate or reduce organization unique requirements. The description of ARP 9162 states:

The focus of Operator Self-Verification is on traditional manufacturing operations, and applications can be made wherever traditional inspection is employed. The practices recommended in this document are intended to identify the basic elements and provide a "guideline" for structuring Operator Self-Verification programs within the aerospace industry; applicable to producers of commercial and military aircraft and weapons platforms, space vehicles, and all related hardware, software, electronics, engines and composite components. Operator Self-Verification programs are applied to improve the overall efficiency and product quality of processes considered mature, as judged by the implementing organization. Operator Self-Verification programs are not stand-alone processes, but augment existing quality management systems. The identified program elements are for voluntary implementation by the organization, and are not intended for contractual flow-

SUITABLE FOR PUBLIC RELEASE (names removed)

down unless otherwise stipulated through contractual agreement.

64. The stated purpose of ARP 9162 is to "provide the recommended elements for Operator Self-Verification processes within the aerospace industry." To that end, the Performance Review Institute (PRI), a non-profit organization affiliated with SAE International, conducts audits and certifies industry programs pursuant to aerospace standards such as AS9110, which addresses maintenance of commercial, private and military aircraft. Companies such as Boeing and NGC often require suppliers to undergo audits to demonstrate their compliance with ARP 9162 and AS9110 before they will enter into contracts with them. We also learned that in 2010, Boeing asked NQA-USA of Acton, MA, to audit its self-inspection program.

65. Over the years, FRCSW management personnel have referred to industry standards such as AS9110 and ARP 9162 to develop requirements and to lend credibility to ConCert, but we were unable to confirm that FRCSW has ever asked an organization such as PRI or NQA-USA, that specializes in review of private industry programs to review ConCert.

2006 FRCSW ConCert Brief to NAVAIR

66. NAVAIR has long been a proponent of performance and quality initiatives such as Lean Six Sigma, and AirSpeed. In 2005, these initiatives, combined with further review of industry self inspection programs, ISO 9000 initiatives and the 2005 Base Realignment and Closure (BRAC) initiatives, led FRCSW to consider implementing a form of self-inspection in its aircraft maintenance operations.

67. In 2006, during a conference with NAVAIR, FRCSW presented a brief on ConCert, which included a single briefing slide indicating FRCSW had conducted a Programmatic Risk Assessment based upon the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD (AT&L) Systems and Software Engineering, Enterprise Development (SSE/ED) Risk Management Guide For DOD Acquisition.¹⁷ At the briefing, FRCSW proposed a pilot program to test its effectiveness. The Investigators were able to identify only a limited amount of documentation describing the plans for the program or the NAVAIR decision to allow the program to move forward. However, the

¹⁷ We have never been provided a copy of the assessment, and QD-1, a QA Department Head, indicated he wished there had been a risk assessment conducted during the implementation of the ConCert Pilot.

slide presentation from the conference demonstrates recognition of the significant cultural shift that would result and the need to implement measures to mitigate the risks resulting from giving the Production Department more responsibility for quality while reducing Quality Department oversight. We found few details for the proposed mitigation efforts. However, it is clear that NAVAIR authorized FRCSW to proceed with the pilot.

2007 FRCSW E-2/C-2 Pilot Program

68. COMFRC personnel provided documents from a February 1, 2007 Quality Working Group meeting that indicate FRCSW had completed initial classroom training, some quality assurance training, and was planning to start AI interviews with a goal of holding its first ConCert Council meeting on the 15th. The notes indicate key measures of success included productivity, the number of escapes (defective work not caught during AI verifications), and auditing/monitoring results. The program would start with the E-2/C-2 aircraft product line because it was less complex and more "mature" than the vertical lift and F/A-18 product lines.

69. Quality Working Group meeting notes indicate further review in the Spring, and by May 2008, the COMFRC QA/Maintenance Policy Office began developing additional NAMP policy for administering and managing the ConCert program.¹⁸ However, COMFRC did not approve extension of ConCert beyond the E-2/C-2 pilot program until 2009.

FRCSW Southeast Considers Implementing ConCert

70. One of the complainants told the investigator, "We tried it at JAX when now Admiral [RDML] Matthews was our CO. It didn't work very well and they scrapped the program." The complainant went on to say, "We recognized it as not being a good thing and our managers recognized it as not being a good thing."

71. The complainant continued, "I really thought that - I made sure Admiral [RDML] Matthews was in the loop on this when I talked to COMFRC-1 because I know the man and he's a pretty straight shooter. I've got a lot of respect for the guy and I want to make sure he was on board with all of the conversation because I knew if the chain of command failed us, we were going outside and I certainly didn't want to throw him under the bus."

¹⁸ COMFRC and FRCSW maintain that that the 2005 version of the NAMP permits or authorizes ConCert by virtue of a sentence that states inspection may only be performed by personnel trained in quality assurance. While literally true, we think this an overly broad reading, since the 2005 NAMP assumes depot-level quality assurance is performed by Quality Department personnel.

When the investigator asked the complainant if he ever spoke to RDML Matthews he responded, "No, not directly."

72. Rear Admiral (RDML) Timothy Matthews, Director of Fleet Readiness, told the investigator discussions were held in the 2006 - 2007 timeframe when he was Executive Officer of Fleet Readiness Center Southeast (FRCSE). Those discussions were to determine if ConCert would be implemented as a Pilot Program at FRCSE. The decision was made by FRCSE Management because there were so many other initiatives going on at FRCSE such as Lean Six Sigma (AIRSpeed) and ISO 9000, which is another quality management system, they would not implement the ConCert Pilot Program. They would wait and see how "it proves out at Southwest, [then] maybe we could take it on." Rear Admiral Matthews also stated "I actually supported the idea, I was not philosophically against it" but just "felt that taking this additional thing on, would involve a big culture change on the part of the QA people."

73. RDML Matthews told the investigator that he was "fully aware the staffing of the Quality Assurance Department was an issue, an understandable issue on the part of the QASs, but not a safety issue."

2008 Review and Brief at Commanders Conference

74. FRCSWCO-1 then CO, FRCSW, briefed the ConCert program to the NAVAIR Echelon III Conference in June 2008. This presentation starts with the assertion that "inspection adds no value." We understand him to have meant that inspection only catches defects after they are created by the artisan, and other processes are necessary to prevent the artisan from creating the defect in the first instance, commonly referred to as "quality at the source." We understand the concept that training artisans to inspect or verify their own work (operator self-verification), can improve the quality of their production work. Similarly, we accept the proposition that training artisans to inspect or verify the work of others will help them to improve their own production work (recalling that AIs spend 80% of their time doing production work and only 20% of their time verifying the work of others). How ConCert improves the production work of an ordinary artisan who does not receive AI training is not explained in the slides, and in response to a question posed in July 2012, the ConCert Program Manager and Quality Division Head stated "it is important to note that ConCert in itself will not dramatically impact internal quality, only make the process owner aware of the defects being generated."

75. The 2008 ConCert brief contained a slide indicating that a typical depot level artisan, not trained in ConCert, performs a function similar to an O-level CDI. That implies an artisan is authorized to verify or inspect the production work of other artisans, which is incorrect. We understand even the current version of the NAMP would prohibit artisans who are not also AIs from verifying production work.

76. The 2008 ConCert brief contains the results of FRCSW Programmatic Risk Assessment with an extensive list of risks and mitigation measures. However, we did not develop any detailed information discussing most of the listed mitigation, and saw nothing in this list that suggests the AI reports to the Quality Department when performing AI verifications.¹⁹ While the list of mitigations includes references to AIRSpeed and ISO 9000/AS-9100, as we discuss below, application of AIRSpeed and other principles at the same time as ConCert raises questions about which of the programs are actually causing any quality, schedule, or cost improvements that may have been observed during the pilot.

77. In discussing the "returns to date," the 2008 ConCert brief emphasizes that the positions of five QASs who had retired had not been filled, and that 9 QASs had been offered early retirement incentives. To that point, 15 AIs had been appointed to perform the work of the retiring QASs, for a savings of \$230,000, with more savings projected in the future.²⁰ The brief also presented favorable statistical information about the number of defects discovered in the pilot program and the reduction in the number of test flights required before test pilots would accept an aircraft that demonstrated slight improvements in both areas.

¹⁹ Indeed, one of the individuals charged with developing the program in 2006 and 2007, QD2, adamantly maintains that no one intended for that to happen and that is why the 2010 FRCSW Quality Manual, which incorporates ConCert, never says AIs report to the Quality Department. Given that language in the 2012 NAMP, the FRCSW Quality Manual will require revision.

²⁰ Subsequently, FRCSW realized that it had let too many QASs retire, and has resumed hiring QASs. The investigators could not develop evidence supporting the projected cost savings; the NAVAUDSVC audit will examine that question. It should be noted that the shift to AIs leads to a reduction in indirect cost charges and a corresponding, but smaller, increase in direct costs, since QAS time is charged to overhead but AI time is charged to production.

2009-2010 NAGI Concerns and COMFRC Response

78. In 2009, RDML Matthews became the Commander of Fleet Readiness Centers (COMFRC). While RDML Matthews was COMFRC, the Command received letters of concern from the National Association of Government Inspectors (NAGI), regarding ConCert and the safety of the program. The materials we reviewed indicate the union concerns involved (1) the quality of work leaving the shop given the transition from QAS to AI verification and (2) what would happen to the QASs who would no longer be performing the in-shop verifications. Clearly, the earlier FRCSW decision to offer early retirements and not fill vacant QAS positions was a matter of concern to the union.

79. RDML Matthews and personnel from FRC went to FRCSW and did a thorough review of the ConCert program including receiving briefs from the FRCSW CO and the Quality Assurance Officer. According to RDML Matthews, Quality Assurance Specialists were also included "to make sure we got, you know, the full story from everybody." Data was reviewed on flights to sell, aircraft discrepancy report (AIDR) results, and discrepancy work orders (DWO).²¹

80. RDML Matthews told the investigator the "AIDR results were less after implementation of the program and I believe DWO's were also going down." This review was to address the issues that were brought up in NAGI's letter. RDML Matthews wanted to be assured that FRCSW was "in fact doing things safely and producing quality products." He went on to state, "If we had

²¹ A DWO documents nonconforming work discovered by an AI or a QAS while performing artisan work verifications in the shop. An AIDR documents nonconforming work discovered by fleet personnel while inspecting an aircraft delivered to the fleet after depot-level maintenance has been performed. Changes in DWO rates after conversion to ConCert may be interpreted in different ways. Increased DWO rates could suggest AIs, who are more experienced in performing the required maintenance or repair, are discovering defects in the shop that the QAS had been overlooking (a good result). It could mean the AIs are being overly critical in their evaluations (a bad result). It might also suggest that ConCert is not building in "quality at the source," one of its stated goals or benefits. Conversely, a reduction of DWOs could suggest the AIs are imparting their new skills to artisans who do not receive AI training (a good result). But a reduction in DWOs could also mean, as the Complainants argue, that the AIs are not adequately skilled in identifying nonconforming work. For that reason, we believe an examination of defects discovered by QAS personnel when inspecting aircraft moved to the test line (documented in MAF reports), a review of the number of test flights required before deciding an aircraft is ready to return to the fleet, and a review of AIDRS would be more accurate measures of the "success" of ConCert. The evidence provided to our investigators indicates the number of required test flights has reduced significantly; the number of DWOs and MAFs have varied only by small amounts. The audit will provide information on AIDRS.

found something unsafe, we would have told them to knock it off and go back to the old process. But since we did not find quality or safety issues, we allowed the pilot program to continue."

81. Apparently RDML Matthews' efforts did not sufficiently allay the Union's concerns, because it filed an unfair labor practice (ULP) with the Federal Labor Relations Authority (FLRA) later that year. Documents made available to us indicate the primary purpose of the filing was to require FRCSW to bargain over the changes in QAS duties it was planning to make while implementing ConCert. In 2011, the union withdrew the ULP and entered into a memorandum of understanding with FRCSW that indicates the impact of these changes are subject to bargaining.²²

2009 ConCert NPS Study

82. In 2009, COMFRC decided to support FRCSW's proposal to expand ConCert to other FRCSW product lines, such as aviation components, vertical lift, and the F/A-18. At the same time, FRCSW commissioned a masters degree research product to be performed by naval officers attending the Naval Postgraduate School (NPS). FRCSW provided E-2/C-2 ConCert Pilot Program information to the officers for the purpose of this study, which resulted in the publication of an MBA Professional Report, entitled "An Analysis of the Concurrent Certification Program at Fleet Readiness Center Southwest."²³ The report abstract states:

The purpose of this MBA Project was to answer the question of whether or not the Concurrent Certification (ConCert) program is working successfully on the E-2/C-2 aircraft production line. This study also determines if the ConCert program improves "quality at the source" and if it should be rolled out to other Fleet Readiness Center Southwest (FRCSW) product lines.

²² Boeing had union problems in the early 2000s. It addressed them by making self-verification a condition of employment and putting a "no layoff" clause in the contract. NGC El Segundo is a non-union shop. Both organizations warned against using self-verification for the purpose of reducing the number of Quality Assurance personnel.

²³ The report is dated December 2009, but we understand it was not released to the public until early 2010. A copy of the full report is available at: <http://www.dtic.mil/dtic/tr/fulltext/u2/a514233.pdf>. Readers who are not familiar with naval aviation maintenance or the ConCert program at FRCSW should find the narrative portion of this report helpful to understand the issues and concerns presented in this inquiry.

Data from FRCSW E-2/C-2 production line was analyzed. The data included the number of Discrepancy Work Orders (DWO) created, number of Maintenance Action Forms (MAF) created, number of Functional Check Flights (FCF), and number of Aircraft Inspection Discrepancy Reports (AIDR) received from customers. Critical areas examined were the number of defects discovered in the hangar, the number of defects that were not discovered until the aircraft arrived on the test line, and the number of defects that made it to the customer. The analysis of the data revealed that ConCert appears to effectively perform the quality verification function. Furthermore, the data shows that quality has improved; however, the source of the improvement cannot be linked solely to ConCert.

83. In our opinion, the researchers attempted to explore and answer questions that are of direct concern to this inquiry. Section VII, Conclusions and Recommendations, pages 51-55 merits reading in full. Appendix A of the NPS report describes other FRCSW initiatives, such as AIRSpeed, and Lean Six Sigma, that FRCSW implemented at the same time it implemented ConCert.

84. Ultimately, the researchers reached conclusions that are similar to ours. During the timeframe that ConCert has been in effect quality has remained constant or improved slightly. Further, the number of functional check flights required to "accept" an aircraft has gone down, which does represent an important savings of time and money. Unfortunately, the researchers, and we, are unable to determine the extent to which improvements observed are due to ConCert and the extent to which they are due to other initiatives FRCSW implemented at the same time. Indeed, as a NAVAUDSVC statistician who reviewed the NPS report advised, it may be that improvements properly attributable to AIRSpeed and other initiatives are masking any adverse effects resulting from FRCSW's adoption of ConCert.²⁴

COMFRC QWG Benchmarking Visit to Boeing St Louis

85. The COMFRC QWG met with Boeing St. Louis and the Boeing DCMA to discuss lessons learned and best practices from Boeing's implementation of their Manufacturing Self Examination Program, which is their application of the SAE ARP 9162 Operator Self Verification Program.

²⁴ The statistician also pointed out some technical errors in the regression analysis of defects identified at various points in the process and questioned whether this type of analysis can provide meaningful results in any case.

2011 COMFRC Dept Briefs to Air 4.1.9. AIR-09F (ASO)

86. COMFRC provided the NAVAIR 4.1.9 Manufacturing and Quality Assurance Division and NAVAIR 09F Aviation Safety Officer a ConCert overview brief and information paper. The purpose of these efforts was to inform other NAVAIR departments of the program, solicit concerns from the briefing recipients and advise them of the NAGI Union Member issues received. No concerns with FRCSW's ConCert program were raised by the departments. The NAVAIR 5.0D Aircraft Controlling Custodian was not briefed during this timeframe because of familiarity with the ConCert program via the AMMT process described below.

2011 NAVAIR AMI and IG Inspection of FRCSW

87. The NAVAIR Aviation Maintenance Management Team (AMMT) conducts Aviation Maintenance Inspection (AMI) at various facilities to evaluate performance and the ability to support operational requirements. Using statistical and practical methods, the AMI evaluates performance and identifies areas requiring improvement in operational efficiency, effectiveness, safety, and instructional compliance, offering recommendations to improve performance.

88. The AMMT conducted a scheduled AMI at FRCSW from 14 February through 4 March 2011. The results were favorable and the AMMT did not identify any Safety of Flight concerns. An email dated 10 March 2011 from NAVAIR to FRCSW stated:

The AMI results reveal that FRCSW quality verification processes are efficient and effective in providing products to the Fleet. Overall, the Quality Assurance oversight and management of NAMP programs has made tremendous progress in directing this industrial facility towards NAMP compliance ... the AMMT evaluated 155 applicable NAMP programs to verify compliance with governing directives, resulting in 131 programs On-Track, 12 Needs More Attention, and 12 graded Off-Track at FRCSW North Island. ... Safe operations were verified through the evaluation of contingency response drills and practical proficiency examinations. 12 of 12 drills and 44 of 47 practical exams were graded Satisfactory.

89. By email dated 9 June 2011, FRCSW informed NAVAIR of the correction and preventive action taken for each discrepancy noted in the AMI.

90. In April 2011, the NAVAIR IG conducted a regularly scheduled Command Inspection of FRCSW. COMFRC QD-1, Director, COMFRC Quality and Policy Department, requested the IG conduct a

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focus group because of concerns FRCSW employees had expressed with ConCert.

91. The results of the focus group were provided to FRCSWCO-2, FRCSW CO, verbally and in writing. The results indicated that the morale in the QA Department was very low and QASs felt they had been directed to certify the AIs as fully trained even though AIs are not qualified. The IG team also told Captain Melnick that communication between QA supervisors and employees was a concern.

92. Many focus group comments centered on the lack of understanding and information surrounding changes or transition within the organization. The NAVAIR IG made recommendations and suggestions of "opportunities for improvement," including that FRCSW review the QA process for AI certification to ensure no procedures had been violated and AIs had met all requirements. COMFRC also provided recommendations to FRCSW QA for addressing the issues identified by the focus group. The IG did not ask FRCSW to provide a formal written response.

**NAMP 2B Adding Specific AI Program Management Requirements
Issued May 2012**

93. In May 2012, Commander Naval Aviation published a revision to the NAMP.²⁵ Chapter 7 Quality Assurance, now includes additional AI program requirements, but does not require the use of AIs at any depot-level FRC. The following information about the AI functions is included:

7.4.7 D-Level FRC Artisan Inspectors (AIs)

7.4.7.1 AIs are personnel designated by the D-level FRC CO, using the Artisan Inspector Designation (CNAF 4790/11) (Figure 7-8) to perform verification duties. The D-level FRC CO shall ensure all personnel performing QA functions have sufficient training and expertise, well-defined responsibilities, authority, and latitude to identify and evaluate quality defects and initiate, recommend, or provide solutions.

7.4.7.2 Although AIs are assigned to production work centers, they function in the same capacity as QA specialists and shall meet the activity's local qualification requirements. AIs shall be responsible to

²⁵ Shortly after the start of this inquiry, NAVAIR asked the investigators whether the release of the revised NAMP should be placed on hold pending the completion of our work. We told NAVAIR to proceed as planned.

the QA Officer when performing QA functions and may be assigned on a temporary or permanent basis.

- NOTES: 1. The designation and use of AIs is optional and applies to D-level FRC activities only. D-level FRC activities choosing to employ personnel in this capacity shall comply with requirements in this chapter.
2. Artisans shall only be designated as AIs when the D-level FRC QA Department is fully staffed to perform the functions specified in this chapter.
3. AIs shall not inspect their own work and sign as Inspector.
4. Flight Line Verification requirements shall only be accomplished by a QA Specialist.

94. The NAMP AI Policy also includes the requirement for CO written designation of AIs, QA program monitoring and sampling, and completion of training in the QA function.

95. With the publication of the new version of the NAMP, ConCert may be applied to depot-level maintenance throughout the Navy. We now address the specific allegations presented by OSC.

Allegation One

That FRCSW management failed to hire qualified candidates for AI positions, (not substantiated).

Findings

The Complainants' Contentions

96. The OSC tasking letter stated that Complainants contend the majority of employees promoted to the AI position are not Journeymen artisans in their trade (mechanical, sheet metal, electrical, etc.) but are only "Worker Level Artisans," many of whom are minimally qualified or unqualified to conduct product verifications on flight-critical components. The OSC tasking letter does not define "journeymen," but implies the Complainants believe artisans employed at the Wage Grade Eight (WG-8) level are not journeyman.

97. The Complainants also assert that "most of" the employees selected for promotion to the WG-11 AI positions established at FRCSW have been WG-8 artisans, rather than higher grade personnel. They also state that originally, only "Journeyman Level Artisans who have completed up to four years of training"

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were supposed to be promoted to AI positions, but that over time, FRCSW began selecting lower grade (WG-8) personnel.

98. The Complainants also identified specific AIs they contend were minimally qualified based on the Complainants' review of those AIs' records, which they assert indicate they are not trained or skilled in certain key areas. We address those AIs' records in this part of the report.

99. The Complainants do not contend that journeymen who work at FRCSW must be certified under California or other state laws and regulations that establish competency boards for various trades in the construction industry such as electricians, mechanics, and sheet metal workers. In California, as in many other states, these boards also establish apprenticeship or journeymen education and licensing requirements, administer licensing examinations, and maintain lists of qualified personnel for use in both private sector and public sector construction (public works) projects performed throughout the state. In many states, craft or trade unions perform key roles in these activities.

100. If these state provisions were applicable to FRCSW, our effort to determine whether FRCSW was selecting qualified "journeymen" would have been much easier, since we could simply ask artisans to produce their state licenses. Since the state standards do not apply, we must examine the issue of qualification from the standpoint of those FRCSW and OPM standards that FRCSW does rely on along with the definition of journeyman provided by Complainants and others at FRCSW. Finally, in light of the Complainants' assertions, we consider the years of experience that each artisan selected for the AI program had before reaching the conclusion that this allegation is not substantiated.

101. The reader should note that NAVAUDSVC is also examining the qualifications issue and will present findings in an audit report that we anticipate will be issued in December or January.

FRCSW Standards

102. Appendix 7-D.4, Policy, of the FRCSW Quality Manual states:

All artisans selected as AIs/CIs shall be trained (emphasis added) to meet the profile requirements outlined herein. After successful completion of the training program, the trainee shall continue to work under the guidance of an AI/CI OJT instructor to enhance their skills. When the AI/CI trainee has gained enough practical experience on the T/M/S aircraft or aircraft component, he/she shall

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demonstrate their knowledge to Quality Assurance (QA). After proper demonstration to QA, the AI/CI and QA shall certify the AIs/CI's AI/CI Training Sheet, FRCSW 12410/83.

a. AI/CI Profile. "This assignment carries a high degree of responsibility. Therefore, care shall be exercised in the selection of candidates for the ConCert Program to ensure they possess the mechanical aptitude, personal integrity and motivation to accept this responsibility. The individual shall possess the technical competence and sense of responsibility to ensure the aircraft or aircraft component he/she is inspecting is of the highest quality possible before release. A comprehensive formal and On-the-Job Training, OJT program is necessary to ensure that only the most qualified individuals are designated as AIs/CIs.

103. While subparagraph (a) could be considered a definition of the term journeyman, we did not see the use of the term itself in the instruction. Moreover, the investigators were unable to identify Navy standards that explain how the applicant or any evaluator may determine whether the applicant possesses sufficient aptitude, integrity, motivation, sense of responsibility or, of most significance, technical competence to qualify for AI positions.

Requirement to Be a Journeyman

104. FRCSW gave the investigator copies of several position descriptions, but only provided a vacancy announcement for a sheet metal AI that was published in the spring of 2012. Consequently, we limited our review to the Position Description (PD) for sheet metal AI WG-11 positions. It reveals that people assigned to these positions must be "journeymen" sheet metal artisans. With respect to artisan or mechanic functions, It states, in pertinent part:

Incumbent performs journey-level aircraft sheet metal mechanic duties as follows: Disassemble, assemble, modify, overhaul, prototype and repair fuselage and fuselage components structurally. Inspects incoming product and material for proper documentation and configuration. Orders and replaces prescribed parts, checks dimensions and tolerance of parts to determine the serviceability, making corrections as necessary. Establishes locations, dimension and tolerances from blueprints, technical orders and related instructions. Removes, installs and aligns various parts of the fuselage and airframe subcomponents, installs furnishings and accessories, cockpit enclosures and cargo

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doors. Makes detailed safety, static/operational inspections of aircraft components and structures, and inspects aircraft condition/performance acceptability for movement flight test. Operates ground support equipment and machine tooling specific to metal forming. Diagnoses trouble revealed by inspections and test, determines extent of adjustment and repair necessary, and makes the repairs. Investigates, analyzes and resolves technical difficulties characterized by the extension and adaptation of established technical criteria/procedures, inadequate data, conflicting/controversial nature of problems. Has recognized expertise on a class of systems or materials to analyze, draw conclusion, evaluate and report on complex-system operation problems.

105. The Job Announcement for this position issued in the spring of 2012 included language indicating the incumbent will perform "journey-level Aircraft Sheet Metal Mechanic duties on E-2/C-2 aircraft and states:

This job has a screen-out element which will be used to determine minimum eligibility for this job. Applicants who do not receive a minimum of two points on the screen-out element(s) will be found ineligible. The Screen-out Element for this position is: Journeyman or Lead experience in the Aircraft Sheet Metal Mechanic trade or equivalent experience. Including inspecting, overhauling, repairing, modifying, assembling, adjusting, and testing fuselage and fuselage components for E-2/C-2 aircraft and aircraft systems. Inspecting own work for compliance with all related specifications, assisted subordinates in the interpretation of blueprints, specifications, contract requirements, directives and reviewed their work; AND/OR recommended administrative procedures regarding policy, standards, and inspection objectives.

106. Of note, this job announcement states it is open only from Friday, 16 March 2012 to Wednesday, 21 March 2012, thus severely limiting the time available for people to apply for the position. The announcement also stated only "current permanent civilian employees" of FRCSW were eligible for selection to this position. The announcement stated applicants must meet the OPM job qualification standards discussed below, and to identify their level of experience and qualifications in specific skills on a five point scale ranging from "I know little or nothing about this" to "I am consulted by other journeymen in difficult situations, or I am called upon to do unusually complex jobs." Although FRCSW provided the investigators resumes for a number

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of AIs selected over a period of time, it did not provide copies of the applicants' answers to these questions.

Complainants' Definition of Journeyman

107. Because the investigators were unable to obtain a working definition of "journeyman" during initial rounds of interviews, the lead investigator sent an email on 21 June 2012 to all three Complainants asking them to provide their definition of a journeyman and explain what they considered the necessary experience and qualification level for an AI.

108. One of the Complainants stated in an email response to the investigator on 27 June 2012:

The minimum amount of experience that would be appropriate for an Artisan Inspector should be at least one year at the journeyman level and an apprentice mechanic must undergo four years of trade theory, 'OJT' and technical training in order to become a journeyman level artisan (WG-10)."²⁶

109. Another Complainant also responded on 27 June, stating:

There should never be an Artisan Inspector. A Journeyman Level Artisan is an individual with an experience level that would make him competent to be able to read and interpret the written instruction and perform maintenance on his own without close supervision. Years of experience will vary among individuals, however, at a minimum I would expect at least a minimum of eight years, hands on experience before most could be considered 'Journeyman level'. I personally don't know of a formal instruction, other than a Position Description that would illustrate a minimum qualification for a Journeymen Level Artisan.

110. The third Complainant stated in a 27 June email:

The recent Artisan Inspector[s] selected were worker level employees with little or no experience and are now performing work above Journeyman level. ... Upon completion of a four year apprentice training program the employee is at a qualified journeyman level. A Journeyman level employee is a qualified artisan of specific trade that has skills, knowledge and experience in the specific trade to perform the work with little or no supervision. A

²⁶ In September 2012, we learned this Complainant was describing the FRCSW apprenticeship program, of which she is a graduate.

journeyman level employee can make trade related decisions based on experience and knowledge of the trade.

HRSC Specialists' Definition of Journeyman

111. HRSC-1 and HRSC-2, Human Resources Service Center (HRSC) Specialists supporting the Southwest region are responsible for rating the resumes for FRSC AI job announcements. The investigator sent an email to them requesting they: define a journeyman; explain how they review resumes for AI positions; and describe what they use to rate the resumes. In an email dated 3 July 2012, HRSC-1 and HRSC-2 provided the following joint response:

A journeyman is an employee who has performed the work of a WG-10 or equivalent (private/military) with the knowledge of a wide range of experience, covering most AI-6s of his/her trade. These employees can perform the work with very little supervision and can independently determine the nature of work, trouble, and extent of adjustment required to repair major aircraft systems.

The criteria we used to rate applicants are the Position Description, Assessment Questionnaire, and X-118C Handbook for Trades and Labor Occupations [from OPM].

[We determine whether applicants are journeyman] based on their level and length of experience as provided in their resumes.

OPM Standards Considered

112. The Office of Personnel Management (OPM) issues standards HR practitioners may use to establish qualification requirements for federal positions. For wage grade employees, it has established the OPM Job Qualification System for Trades and Labor Occupations, and issued standard X-118C and an accompanying handbook, which contains the following explanation of the Job Qualification System:

a. Under this system, how applicants gained their skill and knowledge or the length of time they have spent in a line of work are not as important as the fact that they have the required ability or potential to do the job.

b. The objectives in determining what the applicant can do are: To provide selecting supervisors with eligibles who have the skills, knowledge, abilities, and personal characteristics needed for the particular job being filled. To rank eligibles in terms of their qualifications so that the best qualified

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are considered first when there are more eligibles than vacancies.

c. In this system, the job element method is used to match what applicants can do against what the work calls for ... If the applicants have the ability to do the work, they are considered eligible for the job.

d. Job element examining procedures permit flexibility in identifying the best qualified candidates with minimum time and effort. Alternative techniques can be used at the local level to better serve both the needs of management and the best interests of the general public.

113. OPM also has established a generic "Job Qualification System for Trades and Labor Occupations" for various trades. HR personnel provided one that pertains to the WG-4200 series, "Pipefitting Family." It is quite detailed and could be useful to applicants and raters. This document is mentioned in the one vacancy announcement we obtained, for an aircraft sheet metal repair inspection that was published in the Spring of 2012. The investigators were unable to determine how HRSC personnel use the OPM standards, by themselves, to determine which AI applicants are minimally qualified to hold AI positions.

114. HR personnel also provided the investigators a set of OPM "Occupational/Assessment Questions" that appear to be tailored for the sheet metal inspector vacancy announcement. That announcement requires applicants to "complete and submit an occupational questionnaire" at some point in the application process and lists a website where someone who is thinking about applying may "preview" the questionnaire to determine if their experience matches the skills required for the position being advertised. These questions are specific to processes related to performing and inspecting work on E-2/C-2 aircraft at FRCSW. They provide the applicant an opportunity to "self-assess" his or her skills and abilities to perform specific functions on a scale of 1-5, where 1 is "I know little or nothing about this" and 5 is "I am consulted by other journeymen in difficult situations, or I am called upon to do unusually complex jobs."

115. We did not obtain copies of any applicant's answers to these questions. Nor could we determine how the rating sheets used by the FRCSW personnel rating the applications the HRSC specialists gave them correlated to the OPM questions. FRCSW personnel stated that Production Supervisors and QASs who are familiar with the work of artisans they deal with encourage artisans they believe are well qualified to become AIs to apply for AI positions in order to get the best pool of candidates.

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Relationship between Journeyman and WG-10 Positions

116. Early in the investigation, we received some information suggesting that FRCSW considers a WG-10 artisan to be a journeyman. We expected that the Complainants and others at FRCSW would verify this as soon as we asked. Had they done so, this would have made our work much easier. It didn't happen until this summer, after we asked some very pointed questions.

117. In an email dated 17 August 2012, FRCSW-1, FRCSW Corporate Operations Director, and a former Position Classification Specialist, stated that the term "journey level" is replacing the term "journeyman" in OPM references and, while perhaps not included in any list of terms or definitions, is used throughout OPM's Position Classification Standards/Job Grading Standards. In her opinion, the term applies to artisans who are performing independently and able to troubleshoot and perform the full range of complex repairs. Although FRCSW-1 indicates the grade level may vary with the job series, she said that at FRCSW, most journey level positions are classified at the WG-10 level. She went on to state that at the WG-8 level, most of the titles include the term "worker" rather than "mechanic" or "journey level" and the work is typically described as performing "recurring, routine repairs."

118. We would accept FRCSW-1's assertion without hesitation but for the fact that no one else, including the Complainants and the leaders of the Quality and Production Departments, expressed that position so emphatically, and even her response was qualified. We found nothing in a FRCSW regulation or policy statement that said a WG-10 is a journeyman. Noting that the Complainants' suggestions that WG-10 artisans may be qualified but WG-8 artisans are not, we examined what would result if we simply conclude an FRCSW WG-10 artisan is a "journeyman" for the purpose of this inquiry.

119. Our review of the grade level held by the 87 artisans brought into the AI program since its inception in early 2007 revealed that all but 13 were serving at the WG-10 level when they were selected for AI training. This evidence is contrary to the Complainants' assertion that "most" of the artisans were only WG-8 artisans when they became AIs, but we have no reason to question the accuracy of the personnel records in which this information may be found. We find the Complainants are wrong.

120. While one could argue that our inquiry should conclude with a finding that 13 out of the 87 AIs were not qualified because they were only WG-8s when selected, our review of the experience of the specific AIs that the Complainants said were

not qualified artisans indicates that approach would be too simplistic. Since most AI vacancy announcements limited the area of consideration to current FRCSW civilian employees, we believe it appropriate to examine the total amount of experience an artisan had upon entering the AI program. In some cases the evidence suggests that experienced artisans accepted FRCSW WG-8 positions simply to become FRCSW employees. At that point they could be promoted to WG-11 if they entered the AI program.

Use of Experience to Assess Qualification

121. Most witnesses, including two of the three Complainants, indicated that people who had three to four years experience performing aircraft maintenance could be considered journeymen or to have the requisite experience for acceptance into the AI program. One Complainant thought they should have at least eight years of experience.

122. Our review of the resumes of artisans accepted into the AI program revealed that all but two of 87 AIs had performed related aircraft maintenance for between three and 39 years before being selected for the AI program; 82 of the 87 had at least four years experience; 51 of the 87 had 10 or more years of experience. When averaged, the typical artisan selected to join the AI program had 15 years of related maintenance experience. Typically, this experience was gained while serving in the Navy, working at FRCSW, or in the private sector. Some of the private sector artisans had worked alongside FRCSW artisans as contractor employees before joining the FRCSW civilian workforce.

Rating Criteria Used In Selection Process

123. In an email dated 28 June 2012, PD-1, FRCSW Production Director, provided the investigator a copy of the criteria used by the FRCSW rating panels that evaluate the AI applications received from the HRSC. Each panel includes at least one QAS and a production supervisor. The rating criteria list the number of points assigned to various knowledge areas and ranged from a basic understanding of the trade up to two years experience at the Journeyman level. No additional points are awarded for artisans with more than two years experience at the Journeyman level. Consequently, an artisan with 10 years of experience as a journeyman receives no more points than an artisan with only two years of experience.

124. The Complainants provided OSC with pages from IQRs for several recently promoted AIs. These IQRs indicated that they were inadequately prepared to conduct product verifications. For example, the Complainants pointed out that the IQR of AI-3,

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one of the F/A-18 AIs who was a WG-8 Mechanic when selected, indicated he had never completed basic training on topics such as respiratory protection and safety. They said the IQR also did not include a certification stamp that would indicate he has been trained on how to quality check individual flight components, such as hydraulics or wheels and tires. They pointed to the IQR of another F/A-18 AI, AI-4, who was also previously a WG-8 Mechanic, to demonstrate he had received only initial training for the Mechanic Worker position.

125. The Complainants also provided documents and photos to the investigator that were not included in the original OSC complaint. They said these documents demonstrate overlooked defects that can be traced to insufficient artisan skill upon being selected for the AI program or inadequate training during classroom and OJT AI training. We address these matters next.

F/A-18 AI AI-3's Qualifications

126. QD-3, Product Line Specialist for the FRCSW QA Department, told the investigator that he would not have selected some of the people that were selected to become AIs. He stated:

The reason why is they are not fully qualified within their trade. I've had mechanics that have come into the artisan inspector program that are not qualified on every aspect, mechanical wise on the F/A-18.

127. QD-3 went on to say that he had one employee, AI-3 who came to him with a blank IQR. He wasn't qualified for anything and had no previous stamps. QD-3 stated, "He has no business being in the AI program." QD-3 also told the investigator that QD-4, a Quality Department Manager, was aware of AI-3's situation and told QD-3 to train him anyway.

128. Enclosure 1/Complainants Enclosure 1 to the OSC tasking letter includes a page from AI-3's IQR that indicates he never received any artisan training at all.

129. AI-3 told the investigator that he was hired on 20 June 2011 as a WG-8 artisan and on 30 July 2011 he was promoted to a WG-11 AI. Thus, he had served as an FRCSW WG-8 civil service employee for a little more than one month before his promotion to WG-11 and entry into the AI program. AI-3 also told the investigator, however, that he had been a contractor employee aircraft mechanic at FRCSW before FRCSW hired him. Moreover, before coming to FRCSW, he said he had served seven years in the Navy working on F/A-18s.

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130. Our review of AI-3's resume, confirmed by the Quality Division, revealed he had approximately nine years of experience working as a mechanic on F/A-18s and S-3s, including two years as an F/A-18 CDI while he was in the military.

131. AI-3 did not have certification stamps in his FRCSW IQR when selected for the AI program because contractors do not use the FRCSW IQR form, even if their personnel are working at FRCSW. Moreover, FRCSW personnel told us the contractors consider their own equivalent records to be proprietary and would refuse to give them to FRCSW if asked.²⁷ Based on the criteria we think appropriate to consider, specifically his previous artisan experience in Navy, his artisan experience as an FRCSW contractor, and his CDI experience, we conclude AI-3 was qualified to enter the AI program when selected.

F/A-18 AI AI-3 Qualifications

132. Enclosure 1/Complainants Enclosure 3 page 3 to the OSC tasking letter indicates the Complainants' belief that AI-4 was not adequately prepared to conduct product verifications when selected for the AI program. Our review of AI-4's experience revealed that from 1999 to 2010 he held related positions in the Navy such as QA Supervisor, Production Supervisor, and Maintenance Control Manager. AI-4 has worked in FRCSW as an F/A-18 Center Barrel aircraft mechanic since October 2010, and received his AI designation on 3 October 2011.

Incomplete IQRs as Evidence of Inadequate Qualification

133. Enclosure 1/Complainants Enclosure 6 to the OSC tasking letter includes copies of the FRCSW Industrial Quality Record (IQR) forms that Complainants offered to demonstrate some AIs lacked the required training and certifications. This form, which lists an artisan's qualifications, is used in the AI program to conduct a baseline IQR review for each AI selectee during the AI training process. When deficiencies are discovered, those areas are targeted for completion before the AI candidate completes AI training.

134. The copies of the IQRs forms provided with the OSC tasking letter demonstrate deficiencies found during the baseline IQR review conducted for each artisan who was selected for the AI program and promotion to WG-11. Included at the bottom of these forms was information on how the training and certification

²⁷ We did not attempt to confirm this assertion.

deficiencies were corrected during the course of AI training. Some of the examples are discussed in the following sections.

F/A-18 AI AI-5 Qualifications

135. The Complainants allege AI-5, an F/A-18 AI, was not "highly qualified" when selected to become an AI because at that time his IQR²⁸ reflected he had not received all artisan training required, as indicated by the blanks in his IQR where his knowledge of "wheels and tires" should have been signed by the QAS who evaluated his knowledge in that area.

136. Our review of AI-5's resume shows he had a total of eleven years of F/A-18 mechanic experience, including four years as a Collateral Duty Inspector (CDI) while in the military. Our review of AI-5's IQR reveals he received his AI stamp on 1 November 2011. As of 6 July 2012, AI-5's IQR demonstrated he received his wheels and tires training in September 2011, as compared to the copy included in the complaint that showed the wheels and tires section blank.

AI-6 Qualifications

137. OSC Complaint Enclosure 1/Complainants Enclosure 2 shows a page from AI-6's IQR. The Complainant stated AI-6 "isn't even task qualified. He was refused an Artisan Stamp. He has no qualifications."

138. AI-6s' resume showed that he was in the Navy from 1993 through 1998 and was an Aviation Electrician. After AI-6 left the Navy, he held various positions as an electrician including working for L-3 Communications as a contractor Aircraft Electrician on F/A-18's from 2001 to 2006 and then again from 2009 to 2011.

139. In February 2011, FRCSW hired AI-6 as a WG-8 F/A-18 Aircraft Electrician Artisan. His work on the F/A-18's cockpit was in the Center Barrel Program which does not require Egress Training. In October 2011, after AI-6 had completed all AI training requirements necessary to inspect electrical work, including Egress Training, he was designated and received his Electrician AI stamp.

140. The steps in the hiring process for FRCSW AIs are: the job is announced by the FRCSW Production Department; resumes are

²⁸ An Individual Qualification Record (IQR) is an individual's record that contains all training documents and certifications.

reviewed by HRSC Southwest at Miramar; the cert of qualified applicants is sent to the hiring authority at FRCSW; the qualified applicants on the cert are rated by a panel that includes at least one QA Specialist and one Production Department supervisor from FRCSW; job offers are made by HRCSW North Island. Once the new hire accepts the position they meet with FRCSW QA Management to discuss the training requirements to become certified as an AI.

141. IQRs are not used to determine whether an applicant has all requisite artisan qualifications. Some witnesses said that not all applicants are current government FRCSW employees; some may be contractor employees whose IQRs are held by a contracting company that would not make them available for review and HRCSW personnel maintain that using the IQR's would give a potential disadvantage to employees whose IQR's are being held outside FRCSW. We confirmed this is the HRCSW position. We note this logic does not apply if/when only current FRCSW employees are eligible to apply for AI positions. Quality Department personnel stated a review of IQRs during the AI selection process would be very helpful.

142. Once Artisans are hired as AIs, their IQR's are reviewed by the QA Department to determine whether additional training is required that should be accomplished before they are allowed to begin their ConCert training to become certified AIs. In practice, this training may take place at any time during OJT, because some work in which the artisan needs training may not be in the shop when the OJT begins.

143. RDML Matthews stated in his interview, "the way the quality assurance departments have traditionally been staffed with folks that are not necessarily the experts in that particular area. They are experts in quality assurance for sure. But they typically wouldn't have quite as much knowledge on that particular component that they were inspecting as the guy that's been working on it."

144. During his interview on 7 December 2011, FRCSW CO-3, CO FRCSW, stated, "Well, the AIs are selected you know, based on work they've done, how effective they've been in the shop, how long they've been in the shop. They're selected, they're interviewed by QA."

145. During his interview on 27 January 2012, QD-5 said about the AI hiring process: "It's the only job I know of in the

entire plant of almost 4600 people you have to interview with the CO before you can have the job."²⁹

146. The FRCSW HR Department conducted a Management Inquiry in October 2011. One of the witnesses, PD-2, Aircraft Mechanic Leader, stated "We should look at the hiring process for aircraft inspectors. Interviews should be conducted. Some of the selectees don't have the necessary skills to be an AI."

147. In an 18 May 2012 telephone conversation with the senior investigator, QD-6, QA Division Head and ConCert Program Manager, said he has no input on who is hired as an AI. The AI positions are nominated, announced and selected by the Production Department. However, he maintained that the AI chain of command runs through the QA Department and that AIs work for him in his capacity as QA Division Head.

148. When interviewed on 7 December 2011, AI-7, FRCSW AI, said he has been in metal work for 21 years and employees on the line don't understand the real seriousness of the aircraft. When the I/O asked AI-7 if there any specific individuals that he was concerned with he said "the contractors." He explained "We still have a lot of problems because it's communication issues. You know, we have a lot of guys and I'm not separating anybody, I mean a lot of Asians that really don't understand, read, write or speak very much English."

149. E-2/C-2 AI AI-8 stated in his interview on 7 December 2011, "Here, even though your IQR is not all signed off, they can make you an AI, also. They are probably just thinking, okay, in the long run, make sure you work on it until all - everything is signed off, but - but - do not - do not inspect something or stamp something that is not signed off on the IQR." AI-8 added "... sometimes all the IQRs have not been signed off yet, but they still assign you as an AI. Does it seem like there's a pressure to get the guys qualified? Yes. Yes, that's what I think."

Comparison of AI and QAS Payscales

150. Since FRCSW points to cost savings as a reason for adopting the ConCert program, we provide the salary information set forth below. FRCSW personnel have provided the

²⁹ This statement is not entirely accurate since the artisan receives a temporary one year appointment to a WG-11 AI position upon selection and undergoes AI training before being interviewed by the CO. In fact, the CO has no role in the AI selection process; it would be more accurate to say he has the power to veto a recommendation that the AI receive an AI stamp.

investigators materials they assert demonstrates costs savings since the beginning of ConCert, although they concede that it is difficult to distinguish between costs savings resulting from ConCert and cost savings resulting from other initiatives. We are not able to express an opinion on cost savings other than to note that some of the projected savings mentioned in earlier FRCSW briefing slide presentations would result from sharply reducing the number of QAS personnel; when FRCSW realized it had allowed too many QAS to retire without replacing them, it resumed hiring them. We anticipate the NAVAUDSVC will be able to provide more information on this matter.

151. A U.S. Office of Personnel Management website chart shows the following salaries for WG and GS personnel:

WG-8/Artisans \$20.79 per hour/\$43,243 per year
 WG-10/Artisans \$23.30 per hour/\$48,464 per year
 WG-11/Artisan Inspectors \$24.21 per hour/\$50,356 per year
 GS-9/Quality Assurance Specialists \$24.73 per hour/ \$51,438 per year
 GS-11/Quality Assurance Specialists \$29.92 per hour/ \$62,203 per year

FRCSW Apprentice to Journeyman Program

152. On Tuesday, 11 September 2012, an FRCSW employee provided the senior NAVAIR investigator a copy of FRCSWINST 12310.2, "Apprentice Program," dated 23 October 2009.³⁰ Evidence subsequently obtained from the FRCSW Apprentice Program Coordinator and Technical Training Director indicates that since 2002, the earliest date for which data is still available, 147 people have entered, and subsequently graduated from, the FRCSW Apprentice Program. FRCSW still employs 121 of those graduates; 12 of them became AIs; of the 12, two have been promoted to higher level Evaluation & Examination positions within FRCSW, and one has left FRCSW.

³⁰ For months, the senior investigator had been asking FRCSW personnel, including the Complainants, whether FRCSW had any type of training program for employees to obtain the journeyman level in their respective trade, with negative responses. The investigator then asked if there was an FRCSW apprenticeship program, was told there was, but could obtain no more information until she asked COMFRC QD-1, COMFRC Director of QA/Maintenance and Policy, if there was an Apprentice Program at FRCSW. COMFRC QD-1 agreed to find out. Only then, at an extremely late date in our inquiry, did the investigator learn about the FRCSW apprentice program. Of note, one of the Complainants now acknowledges she is a 1991 graduate of that program.

153. People selected for the program begin at the WT-00 grade level and are promoted to the next WT level every six months during the four year Apprentice Program. When an FRCSW Apprentice graduates from the Program, he or she becomes a WG-10 Journeyman Artisan.

154. The Complainants made statements indicating an Apprentice Program could be instrumental in providing qualified journeyman to the ConCert Program. We agree. We just don't understand why they didn't point to the existence of one at FRCSW, especially when one of the Complainants now acknowledges she graduated from that program years ago. We note that the instruction's description of the program, which includes components of training conducted at community colleges, suggests the program may be similar to California's trade licensing program.

Using Templates to Falsify Applicant Resumes

155. During interviews with investigators, numerous AIs said they suspected that duplicate or "template" resumes were being used to qualify for AI positions. During his interview on 27 January 2012, PD-1, Production Director, was asked if he was aware of such resumes. PD-1 said he had heard of their existence when a contractor was converted to federal service in order to take an AI position. He believed that pertained to the E-2 line and added that Production was working with HRSC to investigate. The potential problems were that the employees could not read or write English, causing concern that they would not be able to read blueprints. During his interview, PD-3, E-2/C-2 Shop Supervisor, told the senior investigator he suspected that template resumes were being produced by his crew leader. PD-3 told the investigator he reported his suspicions to the HRCSW Representative, HRSC-3. In their interviews, PD-3 and HRSC-3 confirmed that at least one of the resumes that appeared to be a template was submitted by an employee who was hired as an AI.

156. The investigator obtained copies of two resumes: one from PD-3 crew leader and one from an artisan that was hired to be an AI. She verified that the current experience sections on both resumes were identical. FRCSW HRSC personnel stated they believe this to be an "isolated incident and not a systemic problem." We directed an IG investigation into this matter. On 27 September 2012 we were informed that a parallel FRCSW inquiry has been ongoing for some time.

157. During his interview on 27 January 2012, PD-4, Production Officer, was asked if he was aware of contractors coming in as artisans and then using a template resume to apply for AI

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positions. PD-4 responded, "Oh I am a little aware of that. I know that there was an investigation going on or management inquiry going on into that. That was brought to our attention by HR and it was part of a larger investigation where I recommended to the CO that it looked like there was some travel fraud as well and there was a big ...yeah, so I'm aware of that ... that folks were hired that were probably unqualified to do the work, whether it's because of the language barrier or the inability to read blueprints. I'm sure you know the big NCIS investigation of some stuff that went on with some dealings with some contract and manufacturing out, a Mr. Brian Delaney, and a few of those folks. Brian Delaney³¹, I guess, was the deputy program manager when some of those folks got hired and it was one of the thoughts that he hired those guys as a favor for doing some other work for him personally. He was in the E-2/C-2 Program."

158. We have assigned Naval Inspector General Hotline Tracking System (NIGHTS) number 201203116 to the IG investigation.

Discussion and Analysis

159. As explained near the beginning of this report, we were unable to identify criteria the supporting Human Resources Office (HRO) actually uses to evaluate applications for AI positions that we consider meaningful and useful. Nor could we correlate the criteria the HRO uses with the criteria FRCSW rating panels use to rate the "qualified" applicants forwarded by the HRO Office when selecting applicants best suited to be accepted into the AI training program.

160. Based on the totality of the evidence the investigators were able to obtain, we believe that QASS and Production Supervisors who know the quality of artisan work based on their observations encourage people they think would make good AIs to apply for the program. These people put enough information into their applications to get past HRO review, then they are

³¹ Brian Delaney, an FRCSW E-2/C-2 Deputy Program Manager, pled guilty in federal court to conspiracy, corruption and other charges stemming from a wide-ranging cash for contracts scheme with three separate contractors. NCIS participated in the investigation. According to a 29 March 2012 LA Times article, Delaney and three other FRCSW E-2/C-2 employees admitted accepting more than one million dollars in cash, gifts, and home remodeling in return for falsifying contract orders with the companies. The article asserts one of the contractors was paid at least \$2.20 million in connection with the fraud scheme. Three contractor employees also pled guilty. Sentencing is now scheduled for 9 October 2012. For more information, see <http://articles.latimes.com/2012/mar/29/business/la-fi-navy-bribery-20120329>

selected by rating panels that consist of at least one QAS and one Production Supervisor. In short, the evidence suggests artisans are preselected for the AI training program.

161. We do not consider this type of preselection improper, as long as everyone who wants to apply has a reasonable opportunity to do so and all applications are fairly considered. We found no evidence to suggest some artisans are discouraged from applying, or that the rating panels score applicants based on personal preference rather than an honest assessment of qualifications, although those assessments may be based on personal knowledge rather than the paper record before the panel. We understand that FRCSW has limited the area of consideration for most, if not all, AI hiring efforts to current FRCSW employees. That is not improper and given that the existence of the ConCert program is widely known to the FRCSW artisan population, the extremely short announcement period (five calendar days including a weekend in a recent announcement) does not appear to unfairly limit competition. We might reach a different conclusion if the allegation for review was that qualified artisans are excluded from consideration for AI positions in the hiring process.

162. But the allegation we address here is whether people entering the AI training program are qualified artisans when first selected to become AIs. We think the evidence clearly establishes they are, whatever the criteria used to determine qualification. While we hesitate to express a final opinion on this matter pending completion of the NAVAUDSVC audit, our informal conversations with the auditors do not give us any reason to believe our conclusion is unsound.

163. Most of the discussion about this matter presupposed that only "experienced journeyman" were qualified artisans. If a journeyman is defined as someone who is a WG-10 employee, the evidence shows that 85% (74 of 87) FRCSW AIs were WG-10 artisans when accepted into the AI program. Using this standard, we would conclude that the 13 AIs who were WG-8s when selected to become AIs were not qualified because they did not meet the FRCSW definition of journeyman. However, this approach means that artisans with extensive military and private sector experience were "not qualified" simply because they had to accept WG-8 positions in order to enter the FRCSW workforce. All 13 AIs who were WG-8s when hired into the ConCert program had prior related military and/or private sector experience and some had CDI or CDQAR experience, the military equivalent of an FRCSW AI. To exclude them, in our opinion, would be absurd.

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164. Viewed from the perspective of experience rather than grade level, most witnesses agreed that artisans who had three to four years experience performing aircraft maintenance could be considered journeymen or to have the requisite experience for acceptance into the program, although one of the Complainants thought they should have at least eight years of experience.

165. Our review of the resumes of artisans accepted into the AI program revealed that all but two of the 87 AIs had performed related aircraft maintenance for between three and 39 years before being selected for the AI program; 82 of the 87 had at least four years experience; 51 of the 87 had 10 or more years of experience. When averaged, the typical artisan selected to join the AI program had 15 years of related maintenance experience. Typically, this experience was gained while serving in the Navy, working at FRCSW or another Navy depot level maintenance facility. Some private sector artisans had worked alongside FRCSW artisans as contractor employees performing the same work before joining the federal civilian workforce.

166. In reaching our conclusion that almost all of the artisans hired by FRCSW have been qualified to be selected for the AI program, we also give substantial weight to the fact that, based on the number of defective work order reports being issued, AIs appear to be discovering as many defects in work performed in the shop by other artisans as did the QASs they have replaced. Although the Complainants point to specific inspection errors made by an AI as evidence that AI was not a qualified artisan, given the experience of those AIs, we believe those errors are better addressed in allegation two, where we consider the adequacy of AI training.

167. While we conclude allegation one is not substantiated, we have a number of concerns about FRCSW practices.

168. During the course of this investigation many witnesses told the investigators that they had knowledge of "template" resumes being submitted during the application process. They indicated that one applicant would copy the identical language used by another applicant, even if the copied language did not reflect the submitter's actual qualifications. Duplicate resumes were most likely to be submitted by FRCSW artisans who spoke English as a second language and had difficulty communicating in English, orally and in writing. The investigators interviewed a number of artisans who had difficulty communicating in English during their interviews. Witnesses gave investigators two resumes that contained identical language in the areas of current knowledge, skills, experience, and outside activities.

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169. PD-4, the FRCSW Production Officer, candidly admitted he knew that template resumes were being used to qualify employees for the AI positions that were probably unqualified. The investigators obtained evidence indicating that many other FRCSW personnel were aware of this issue, including the CO. However, the investigators were unable to find evidence that anything has been done to address this matter, which constitutes falsification of official records. Because FRCSW management appeared unwilling to pursue this matter, we opened a separate IG investigation to address it.

170. Another concern pertains to documentation of personnel qualifications. The Complainants identified several artisans selected to become AIs who did not have completed IQRs, and the AMMT unscheduled inspection noted the same deficiency in February 2012. The Complainants point to incomplete IQRs as evidence that an artisan is not fully qualified to perform all necessary artisan tasks. However, in our opinion, the evidence demonstrates that incomplete IQRs are an example of FRCSW's failure to adhere to its own documentation requirements. We found similar problems in our earlier investigations of FRCSW that also can be traced directly to failure to adhere to requirements of the FRCSW Quality Manual.

171. The FRCSW Quality Manual contains many paragraphs that require both production and quality assurance personnel to ensure that IQRs are accurate and current. Ultimately, this responsibility extends to the Commanding Officer. Ensuring completeness of records such as the IQR is fundamental to the performance of the FRCSW mission because allowing only personnel who are properly qualified to perform work assigned to them is fundamental to ensuring safety of flight. Indeed, many inspections consist of verifying records about work performed rather than examining the work itself.

172. Given the importance of ensuring personnel are properly qualified, we would expect an IQR review would be built into the AI selection process. However, FRCSW personnel, including Quality Department leaders, told us the HRSC will not permit them to review an artisan's IQR as part of the selection. Indeed, QD-6 told the investigators the HRSC would consider this improper "pre-selection." HRSC-3, Supervisory HR Specialist, said she would welcome the IQR's being reviewed before an AI selection is made because this would help determine that the best qualified candidate would be selected. She went on to state that the reason this would be pre-selection prior to the candidate being selected is because not every candidate has an IQR available to review, especially if the candidate is working for a contractor. Given the fact that FRCSW only allows its own

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employees to compete, we simply do not understand this reasoning. More to the point, we do not understand why FRCSW does not conduct frequent reviews of artisan IQRs to ensure they are accurate and current, whether or not they are applying to become AIs.

173. We noted other problems. For example, during one of the Executive ConCert Council meetings there was a discussion about whether a QAS or an AI should conduct product surveillance. AI surveillance resources continue to be a problem. Without a full complement of AIs in a product line, the QAS is forced to continue doing verification to support the product line. QAS numbers were based on all AI positions being filled and QA moving from defect detection to defect prevention. If the QASs are to continue to be a substantial presence in the verification process it will be difficult for them to effectively support surveillance, audits, investigations and AIRSpeed. The QAS numbers are low due to the early out that was offered to the QAS job series and attrition. FRCSW is now in the process of hiring five more QASs, and is pushing to add more AIs. The QAS is still a vital part of the Quality Department.

174. We also were surprised to learn that AI applicants are not interviewed during the selection process. This would enable the raters or selecting officials to confirm qualifications, the accuracy of applications, and assess whether the applicant has the communications and people skills required to perform the AI function, which includes conflict resolution.

Conclusion

175. The allegation that FRCSW management failed to hire qualified candidates for AI positions is **not substantiated**.

Recommended Actions

176. Include more detailed explanation of necessary qualifications in job announcements and the FRCSW Quality Manual, such as number of years working independently on a specific aircraft platform and trade area. Include specific training areas completed such as egress; tire and wheel maintenance; corrosion control; specific to the position being advertised.

177. Make ConCert an assessable unit in the FRCSW Internal Controls Program and periodically review all IQRs to ensure they are accurate and current as an internal control.

178. Review IQRs of FRCSW employees as part of the hiring process. Preferably, provide all potential applicants an

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opportunity to update their IQRs in advance of any vacancy announcement. Require similar verification of those who are not FRCSW employees if they are eligible to compete for a position.

179. Interview AI applicants in person as part of the selection process and ensure that a QAS actively participates in the interview before an applicant is offered an AI position.

180. The Quality Department should have a more active role in the hiring process of the AI instead of the Production Department. The Quality Department should initiate the hiring action, write the position description, review the cert, interview the candidates, and make the selection.

181. The HR Department should notify individuals selected for a position, not the Production Supervisor.

182. NAVAIR IG will conduct a separate investigation into the duplicate resume issue under NIGHTS 201203116.

183. Revise Quality Manual to reflect current NAMP including making it clear that AIs report to Quality Department when performing inspections

184. Make AI functions a "collateral duty" to facilitate oversight and add AI functions to performance appraisals, awards, etc.

185. Clarify whether AIs or QASs will continue to conduct AI training.

Allegation Two

That FRCSW management failed to suitably train AI candidates to perform AI functions, (not substantiated).

Findings

186. Appendix 7-D.4, Policy, of the FRCSW Quality Manual states:

All artisans selected as AIs/CIs shall be trained to meet the profile requirements outlined herein. After successful completion of the training program, the trainee shall continue to work under the guidance of an AI/CI OJT instructor to enhance their skills. When the AI/CI trainee has gained enough practical experience on the T/M/S aircraft or aircraft component, he/she shall demonstrate their knowledge to Quality Assurance (QA). After proper

demonstration to QA, the AI/CI and QA shall certify the AIs/CI's AI/CI Training Sheet, FRCSW 12410/83.³²

187. COMNAVAIRFORINST 4790.2 series,³³ Section 7.2.5 Quality Verification states, *Verification is accomplished by personnel who are trained and qualified to perform the QA function.* This policy was in place prior to the ConCert Pilot and was the compliance reference for FRCSW to initiate the program.

188. COMNAVAIRFORINST 4790.2 series, Section 7.6.15.3, Quality Training Requirements, states:

D-level FRC departments will ensure their personnel are thoroughly trained in the performance of their duties. Training shall include the latest state-of-the-art processes, techniques, and procedures. Proper orientation of personnel in the functional responsibilities of each and every department within the D-level FRC will ensure an understanding of their responsibilities within the DLQP.

Description of AI Training Program

189. After selection to be AIs, FRCSW artisans are given one year temporary promotions to WG-11 positions, and begin their training program. For convenience, we will refer to them as AI trainees to distinguish them from artisans and fully trained and qualified AIs.

190. As noted in the presentation of allegation one, the evidence provided us indicates that few, if any, people who are not already FRCSW artisans have been selected to enter the AI training program. Thus, all of them should possess IQRs that demonstrate they have all of the skills necessary to perform their artisan duties. However, the majority of artisans selected to become AIs have not had complete IQRs, as noted in the AMMT unscheduled AMI conducted in February 2012 at the direction of RDML Penfield AI-6.

191. The investigators were told that the IQR of a new AI trainee may be incomplete because the artisan never obtained a particular skill or knowledge, or, especially in the case of

³² The abbreviation "CI" refers to a "component inspector."

³³ As discussed in an earlier section of this report, the NAMP was revised in May 2012 to include specific ConCert AI program requirements and describe its parameters. Where changes between version "A" (2005) and "B" (2012) are pertinent, they will be identified; otherwise, we refer to "series" to indicate the language in 2B remains essentially unchanged from that in 2A.

recent FRCSW hires, the artisan did not yet have the opportunity to demonstrate the knowledge or skill to a QAS who would then fill in the appropriate section of the IQR.

192. The investigators were told that the QAS responsible for the AI trainee reviews the IQR with the AI trainee to ensure the AI trainee already has the requisite artisan skills, or obtains them during the AI training period. We did not attempt to determine the extent to which the incomplete IQRs demonstrated training deficiencies, inadequate documentation of accomplished training, or instances where a particular artisan did not need training on an item listed in the IQR before being selected to be an AI. We discuss the situation of specific AIs the Complainants said had incomplete IQRs below.

193. The ConCert Training consists of:

Two day classroom formal training, including Dilemma/Conflict Resolution.

Approximately eight weeks³⁴ of OJT instruction from a QA (to be determined by the Quality Department), to include training in the Quality Assurance Workbench (QAWB), which is the FRCSW electronic data tracking system.

194. The FRCSW Quality Manual states the following requirements must be met in order to qualify as an AI/CI:

Successful completion of AI/CI ConCert Course consisting of two days of formal classroom training.

Successful completion of QAWB training as documented on the AI/CI training sheet, FRCSW 12410/83 (now the JQR).

Completion of the AI/CI Training Sheet FRCSW 12410/83 (now JQR).

Completion of the AI/CI Designation Form, FRCSW 4790/43 (now JQR).

195. FRCSW now administers a written test at the end of the two day AI classroom course to determine the trainee's knowledge of classroom training material. This test is composed of fourteen multiple choice, true/false, or fill in the blank questions. No one could remember when FRCSW first started giving written tests; the interviews of numerous AIs revealed that some had

³⁴ The FRCSW Quality Manual states OJT will be for a "maximum" of 8 weeks but in practice, the QAS may decide some trainees require more than 8 weeks.

received a written test and others had not, but there was no established pattern or chronology.

196. After completing the classroom training, an AI trainee is assigned to one or more QAS trainers who work the AI trainees through the JQR.³⁵ The QAS first demonstrates a particular skill the AI is expected to be knowledgeable of, such as inspecting a particular item that has been overhauled or repaired. Later, the QAS observes the AI trainee perform similar inspections, usually referred to as "verifications" of an artisan's work. Once the QAS is satisfied that the AI trainee has acquired the required knowledge and skill for an item identified in the JQR, the QAS places his stamp in the area indicated to show the knowledge has been acquired.

197. Some skills require repeated observations before the AI trainee is deemed to be sufficiently knowledgeable of the process to be considered fully qualified to perform the operation alone. In some cases, repetitive items must be performed on different days, or the nature of the inspection process prevents completing more than one in a day. When the stamps for such tasks indicate completion on the same day, this may be evidence of falsification, or it may mean the AI trainee and QAS failed to enter information in the JQR as soon as a task was performed, which is what they are expected to do.

198. The expectation is that the average AI trainee should be able to successfully complete on-the-job training within eight weeks. Not all do so, and while there appears to be no objection to taking more time if the QAS deems it necessary, we discuss one incident where AI trainees received their AI stamp before the QAS deemed he was ready.³⁶

199. Once all the steps in the process are complete (IQR and JQR filled out; classroom and on-the-job training finished; training records reviewed by Quality Department; AI meets with Commanding Officer and receives the AI stamp), the AI is no longer a trainee and may perform independent AI verifications.

³⁵ As quoted in paragraph 186, the FRCSW Quality Manual indicates that an AI/CI may conduct AI trainee OJT and certify training sheets. All witnesses asked about training said a QAS conducts both classroom training and OJT. Our finding that training is adequate is due, in part, to our understanding that a QAS conducts OJT. While no one said an AI conducts OJT, QD-6 said they may mentor AI trainees. We cannot rule out the possibility that FRCSW intends to turn AI training over to AIs once it has a large enough group of experienced AIs.

³⁶ See section titled "Complainants' Assertions of Inadequate Training."

200. In asserting that the AI training program is inadequate, the Complainants compare the length of time (roughly two months) anticipated to be necessary to train the average AI trainee to the length of time, usually measured in years, to train a QAS. It should be noted, however, that senior Quality Department personnel emphasized to the investigators that AIs do not perform any quality assurance function other than inspection (verification), and even that work is limited to a specific group of verifications. By comparison, they said a fully qualified QAS must know and apply many other quality assurance skills and undertake tasks an AI is not permitted to perform.

Conflict Resolution Training

201. Conflict Resolution classroom course is a required part of AI training and trainees are supposed to complete the course during OJT. However, not all AI trainees attend the conflict resolution class before receiving their AI stamp. The AMMT unscheduled 2012 AMI inspection found that 75% of the AIs had not completed the Conflict Resolution course.

202. The AMMT report dated 6 March 2012 states, "This discrepancy was classified as minor because we feel the interview process conducted by the CO, Production Officer and Quality Director [when the AI receives their stamp] is sufficient to ensure personnel understand qualification responsibilities and avenues to address conflict."

203. QD-6, QD-5, and the FRCSW Commanding Officer stated the Conflict Resolution Course is provided by a private vendor who charges \$2500.00 whether there are five or twenty-five people in the class. FRCSW has decided it is more cost effective to wait until it has 25 people to take the course, so it allows AIs to receive their stamps and begin performing verifications before taking the Conflict Resolution course, even though FRCSW leadership points to the course as a significant part of its attempts to mitigate the risk of allowing Production Department personnel to conduct Type I verifications.

Development of Job Qualification Requirements Training Record

204. When FRCSW started the ConCert Program in 2007, it used a one-page document called an Aircraft/Component Inspector Training Sheet to document AI trainee training and demonstrate trainees had the knowledge of specific areas. The QAS who verified the trainee's knowledge would sign and stamp the knowledge area to demonstrate accomplishment. This one-page document contained three sections: (1) Aircraft/Component Inspection; (2) Panels and Door Closures; and (3) a Signature Section at the bottom for the AI/CI and QAS along with the dates

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of signature. This one-page document is included in the 2010 FRCSW Quality Manual.

205. In October 2011, FRCSW started using a 50-page booklet, called "Job Qualifications Requirements" or "JQR" to document AI trainee progress.³⁷ This booklet contains nine sections and eleven subsections to document the AI trainee has gained the knowledge in his/her specific trade. The nine sections include: Acknowledgements, Introduction, Acronyms, Introduction to Fundamentals, Introduction to Systems, Introduction to Trade Areas, Qualification Progress Summary, List of References and JQR Feedback Form.

206. The three sections used to verify skills are: Section 100 Introduction to Fundamentals, Section 200 Introduction to Systems (which is reserved for future development), and Section 300 Introduction to Trade Areas. The Introduction to Fundamentals section includes: Section 101-Aviation Maintenance Fundamentals for AI's; Section 102-Quality Assurance Fundamentals for AI's; and Section 103-Information Technology Fundamentals for AI's. The Introduction to Trade Areas section includes: Section 301-Trade Fundamentals for AIs-All Trades; Section 302-Trade Fundamentals for AIs-Aircraft Mechanic (WG/WL - 8852); Section 303-Trade Fundamentals for AIs-Sheet Metal Mechanic (Aircraft); Section 304-Trade Fundamentals for AIs-Aircraft Electrician (WG/WL-2892); Section 305-Trade Fundamentals for AIs -Machinist (WG/WL-3414); and Section 306-Trade Fundamentals for AIs-Pneudraulic Systems Mechanic (WG/WL - 8255). Sections 307 and 308 are for future development.

Complainants' Assertions of Inadequate Training

207. One of the Complainants provided an email from QD-7 dated 12 April 2011 to QD-5 regarding ConCert Training. This email states:

This is to confirm today's meeting with QD-5, QD-6, and QD-8 regarding Artisan Inspector Certification Training. The following artisans were stamped and qualified by me as a

³⁷ The investigators were told the booklet was adopted because of comments made during the 2011 AMI. It clearly provides much better documentation of training. However, because it lists all knowledge components for the inspection of all trades (mechanic, sheet metal, etc.), the AI-6s used to document knowledge that does not apply to a specific trade are left blank or marked "N/A." This may lead to the incorrect conclusion a trainee has not obtained all required skill sets for the trade he or she will work. As mentioned earlier, the entry of the same date to indicate successful completion of multiple knowledge areas suggests falsification of the entries.

QAS on April 1, 2011. AI-9, AI-10, AI-11. At this meeting, I also notified the above that I felt under pressure to certify the three AIs listed above. I will be sending an email to all, to confirm the areas that I feel the AIs are not fully trained and qualified.

208. QD-7 told an investigator he was designated to train the newly hired AIs in Yuma. He talked to his supervisor about training production employees when he was a QA employee because while he knew he could train QA employees, he didn't think his position description allowed him to train production employees. QD-7's QA supervisor told him he would look into his concern.

209. Later, QD-7's supervisor directed him to train the Yuma AIs, which he tried to do. He told the investigator that it wasn't a good working environment because the Production Manager would not allow the AIs sufficient time for him to train them correctly.

210. QD-7 notified his bosses that the site manager was not allowing him to train the AIs correctly. There were discussions between QA Management, the Yuma site manager, and QD-7. The result was QD-7 was called into a meeting with QD-1 and QD-6 of the FRCSW QA Department. They asked him what his concerns were with the AI training in Yuma. QD-7 told them that the AIs needed more training in specific areas. QD-7 provided a list of these training areas to QD-1 and QD-6, who stated they would provide the Yuma AIs further training in the areas they were lacking.

211. QD-7 added that he is still training AIs in North Island. When asked about this, QD-5 told the investigator that QD-7 was scheduled to rotate out of Yuma at the time he expressed concerns about the AIs he was training. QD-5 said they asked QD-7 what those concerns were and he provided a list. QD-5 said the new QAS that went to Yuma ensured that those areas were sufficiently covered with additional training. Despite this explanation, QD-7 still believes he was transferred in order to put a QAS in Yuma who would certify the AI trainees immediately upon his arrival.

212. In his interview on 23 February 2012, FRCSW CO-2 stated "QA determines whether or not the guy's ready to be [designated as] an AI. At the end of the day, it is QA making [the] recommendation. So without QD-1 or QD-5, but primarily Don Coles saying this guy's ready to be an AI, that's the go/no go."

Authority to Conduct Type I Verifications

213. The OSC tasking letter states the Complainants maintain that "many of the AIs now performing flight critical product verifications [critical inspections] reflect a similar lack of training and preparedness" and expressly contend that AIs are prohibited from conducting such Type I verifications:

The whistleblowers noted that pursuant to COMNAVAIRFORINST 4790.2A, para: 7.1.4.5. only QA Specialists can perform Type I verifications, which are defined in para. 7.1.5.3 (a) as characteristics which would be classified as critical if found defective. Thus, the whistleblowers contend that allowing AIs to continue to perform flight-critical product verifications violates the principles of Quality Assurance outlined in COMNAVAIRFORINST 4790.2A and places pilots and the public at risk.

214. A Type I verification is required for, among other items, work that if not performed correctly could result in a critical defect that may lead to loss of an aircraft. The ConCert pilot program allowed E2/C-2 AIs to perform Type I verifications. This authority appeared in the 2010 FRCSW Quality Manual and now appears in the 2012 NAMP. More to the point, the paragraph the Complainants cited to OSC addresses work performed at an intermediate level maintenance facility, not at a depot such as FRCSW. According to QD-1 at COMFRC, the union had raised this same concern in 2010 and she informed the union of its erroneous reading of the instruction at that time. The title of paragraph 7.1.4.5 (now 7.4.2.3 in the 2012 edition) is "D-Level Inspection Certification at I-level Activities." The restriction the Complainants refer to still appears as a note under this paragraph. The restriction simply does not apply to depot-level maintenance performed at FRCSW.

215. The NAMP section 7.6.5, Quality Verification, defines verification as "... a method of objective evaluation employed to determine and measure the effectiveness of the Certification Program. The term 'verification' refers to the determination of product conformance by actual examination, measurement, witnessing of tests, witnessing redundant or concurrent certification, or review of documented objective evidence describing product or quality characteristics and comparison to prescribed quality requirements. Verification is accomplished by personnel who are trained and qualified to perform the QA function."

216. Section 7.4.7.2 of the 2012 NAMP states, "Although AIs are assigned to production work centers, they function in the same

capacity as QA specialists and shall meet the activity's local qualification requirements. AIs shall be responsible to the QA Officer when performing QA functions and may be assigned on a temporary or permanent basis." This requirement extends to AIs performing flight critical product verifications. However, there is nothing in the 2010 FRCSW Quality Manual that makes a similar statement. Based on our interviews, we are not certain FRCSW leadership ever intended that AIs would report to the Quality Department, despite their statements to the contrary.

AI Trainees or AIs Removed from Program

217. When a maintenance task discrepancy is identified during inspection, a Deficiency Work Order (DWO) is supposed to be prepared. A DWO may be prepared by an AI after verifying an artisan's work; by a QAS during the course of performing a sampling or random verification of an AI's verification of an artisan's work; by a QAS during an E-2/C-2 confidence inspection; or by a QAS performing inspections on the flight line where aircraft are tested after leaving the shop.

218. The investigators were told that for some platforms, if an AI fails to identify a significant number of critical defects while performing (Type I) verifications, an "M" is placed on the call board beside each upcoming verification the AI will perform. The "M" stands for "mandatory" and means that all of the verifications the AI performs must be verified by a QAS before the job goes further. This requirement stays in effect until the crew leaders (not the QAS) feel the AI is consistently performing acceptable verifications again. However, the practice of tagging AI verifications with an "M" because an AI is missing discrepancies is not standard across all platforms.³⁸

219. QD-6, as QA Division Head and ConCert Program Manager, is responsible for the training of the newly hired AIs by the QASs, who are in his reporting chain.

220. QD-6 provided a spreadsheet that listed all AIs that were no longer in the position. Three AIs were removed because during training it was found they did not meet selection requirements. One AI was removed because he did not meet requirements after his training was completed.

³⁸ Although this implies that someone is tracking AI verification errors, the Quality Department has been unable to provide us information on AI verifications that miss non-conforming work and consequently merit writing a DWO on the AI's own verification. We think it essential to closely track statistics of that nature.

AI AI-12 Fails to Discover Missing Cotter Pin

221. One Complainant provided investigators a copy of a Quality Correction Notice (QCN)³⁹ for work performed on an E-2 dated 16 August 2010. The Complainant wrote a comment above the Notice that states, "Since the implementation of Concert, there has been an abundance of Quality Escapes as a result of marginally qualified inspectors. In some cases it's obvious the inspections were not even accomplished."

222. The QCN states that QA discovered a missing cotter pin on the Left Hand Aileron Actuator. The Artisan and AI stamp numbers were listed on the QCN. The AI was AI-12 who received his AI stamp, CC016 in 2007. When some deficiencies are found, QCNS are written when corrective action is required by the supervisor through counseling, retraining or in severe cases stamps are revoked. In this instance in 2010, a QCN was written and AI-12 received a review on proper hardware installation, along with counseling by the shop supervisor.

223. The complainant's claim that AI-12 is a "marginally qualified inspector" based on missing the cotter pin during his inspection is not supported by AI-12's resume, which reflects 17 years of aircraft maintenance experience. A spreadsheet listing the 87 AIs currently in the program provided by QD-5 in late September 2010 shows that AI-12 was one of the first AIs selected for the program, in July 2007. Between July 2007 and September 2012, his work as an artisan has been verified by a QAS or an AI 191 times and no defects were identified. That is, according to these records we can say AI-12 has a 100% "defect free rate" while working as either an artisan or as an AI.⁴⁰

224. During that same timeframe, AI-12 has performed 8,417 AI "observations" (verifications) of other artisans' work. He found 401 defects, for a defect "discovery" or "observation" rate of 4.76%, as compared to the average defect discovery rate of 12.04% for AIs and 12.11% for QASs. QD-5 was unable to provide information on the number or percentage of times AI-12

³⁹ A QCN is similar to a DWO, but is used to identify process defects rather than materials defects.

⁴⁰ This is because on 2 October 2012, QD-5 said these statistics include DWOs written on AI verifications, so they also measure the accuracy of AI verifications, even though it is not possible to distinguish one from the other. In this case, the 100% defect free rate does mean that no subsequent observation by an AI or a QAS found AI-12 failed to spot a defect in another artisan's work during the Type I verifications he performed. However, QCNS are not included in the computation of the defect rate, which is computed based only on DWOs issued.

was found to have made errors in the verifications he performed. We think a comparison of his verification error rate to that of QASS and other AIs would be most helpful, but based on the evidence we do have, we cannot conclude AI-12 is not a fully qualified and competent AI.

E-2/C-2 AI AI-13

225. One Complainant provided a QCN dated in 2010 showing AI stamp number CC012 (assigned to AI-13) missed a major deficiency.⁴¹ This deficiency of an incorrectly wired switch was found during an operational check of the Angle of Attack (AOA) system that revealed the "press to test" system was inoperable. The QCN also contained information indicating AI-13 had a history of missed major defects. AI-13's resume stated he was in the Navy for 20 years. Depending on which squadron he was serving in, he was a CDI, QAR, and CDQAR. AI-13 was one of the original 13 artisans to become an E-2/C-2 AI; he became an Electrical AI in February 2007 shortly after ConCert started. After additional training in mechanical work, AI-13 was also designated a Mechanical AI in 2007.

226. The investigators were told AI-13 is the only AI to hold dual AI designations. In March 2010, AI-13 had his Mechanical AI designation revoked by the FRCSW CO because he failed to discover a missing cotter pin in a pedestal and on a separate occasion failed to discover an incorrect installation of the Universal Assembly. After these incidents, FRCSW decided that AIs would not be certified in more than one trade. AI-13 retained his electrical AI designation and conducted 3470 inspections from August 2011 to January 2012 with a defect detection rate of 0.81% (compared to an average of 12.04% for all AIs). He was promoted to an FRCSW Evaluation and Examination position in January 2012. AI-13 was not listed in the spreadsheet describing AI performance that QD-5 provided us because he is no longer an AI.

⁴¹ The following definitions may be helpful: Critical - a discrepancy that constitutes a hazardous or unsafe condition, or as determined by the evaluator's experience and judgment could conceivably become so, thus making the aircraft unsafe for flight or endangering program personnel or equipment. Major - A discrepancy other than a critical that could result in an equipment failure or could materially reduce the usability of the activity/s program for its intended purpose. Minor - A discrepancy that does not materially reduce the usability of the activity's program for its intended purpose, or is a departure from standards, but does have an impact on the effectiveness of the activity's program.

C-2 Aircraft N737 Loose Control Wheel Nut

227. One of the Complainants gave the senior investigator two photographs of a wheel nut assembly for a C-2 aircraft designated as N737. One photo was labeled "Incorrect." It showed a nut holding the control wheel to the splined shaft on the control column was loose, not secured, and had almost backed off the shaft. The photograph also showed the screw holding the wire bundle had not been secured with the required safety wire. The second photograph, labeled "Correct," showed the nut tightened down properly and secured with safety wire. The loose nut constituted a "critical defect," meaning it could result in loss of an aircraft if not corrected.

228. This aircraft went through ten inspection processes in the shop involving six different people, including Evaluation and Examination (upon receipt by FRCSW); Operational Check; verification by a Mechanical AI; Rigging; continuity check; artisan verification; another Operational Check; final compartment inspection by an artisan; and final AI verification. However, the location of this deficiency was not in any area where work by FRCSW personnel had been conducted or verified. The deficiency was found by the QAS during the Confidence Inspection in the shop before the aircraft went to the flight line. During a Confidence Inspection, the QAS is free to examine any portion of the aircraft he thinks appropriate; the QAS is not limited to a review of work performed at FRCSW.⁴²

229. The QAS who discovered the deficiency sent an email to the E-2/C-2 Production Manager and cc'd the QA Department Head, Division Head, and Quality Assurance Officer describing this deficiency on the aircraft. The QAS who discovered the deficiency also wrote a Nonconformance report, dated 23 March 2011.

230. As a result of the discovery of this specific defect, a mandatory inspection of the security of the pilot's and co-pilot's control wheel was added to the Analytical Maintenance Program (AMP) books on all subsequent aircraft.

231. After reviewing the photograph contained in the complaint, a member of the NAVAIR AMMT that conducted the 2011 and 2012

⁴² We did not examine the criteria used to determine what the QAS looks at during Confidence Inspections in the shop, which can generate DWOs or CQNs, or QAS examinations on the flight line, which can generate MAFs. We think knowing the extent to which these QAS examinations duplicate AI verification efforts is important, but that effort must remain for a subsequent inquiry.

FRCSW AMIs, told the investigator that the E-2/C-2 Shop is the only one in FRCSW that requires a Confidence Inspection by QAS before an aircraft is ready to go to the flight line. He also stated that the system worked because this discrepancy was found during the confidence inspection. As stated in the preceding paragraph, this critical deficiency was not discovered until a QAS found it during this Confidence Inspection, which was the last step before the aircraft would have gone to the flight line.

232. The QA Division Head told the investigator that the reason the E-2/C-2 shop requires a confidence inspection is due to the amount of FOD that was being discovered at the flight line. One of our COMFRC SMEs, told us there were other quality assurance concerns pertaining to AI work on the E-2/C-2 production line that factored into this decision.

Discussion and Analysis

233. The senior investigator's communications with the Complainants reveal that they believe any training that is not as time-consuming or comprehensive as the training they received to become a QAS is inadequate and consequently unsuitable. The fundamental flaw in this contention is that AI is only being trained to perform one of the many functions a QAS performs.

234. The ConCert program only requires the AI to inspect or verify the work of an artisan. The training program has developed over time. We think an excellent example of that development is demonstrated by comparing the original one-page training record document used for the E-2/C-2 program to the 50-page JQR booklet that has been used for F/A-18 and other platform training (including E-2/C-2) since the summer of 2011. The Complainants at FRCSW never referred to the JQR; the gaps in qualifications they pointed to were in the IQRs of individual AIs. Complainants have not identified any knowledge or skills they believe an AI should be trained in that are not included in the JQR as currently designed.

235. As for the duration of the training, while the instructions speak of an eight-week "maximum" OJT period, the program, in practice, does appear to allow for completion in a longer or shorter period of time, depending on the knowledge of the AI training upon entry and the speed at which the AI picks up the skills required for the inspection or verification process. Indeed, during their interviews, AIs expressed some frustration that they could not complete their OJT within eight weeks because (1) they had too many artisan functions to perform during OJT or (2) there were insufficient opportunities to

obtain certain skills required by the JQR within a given eight week period. An example given by some was the "wheels and tires" training requirement because there was a period of time when there was no work available to inspect that would provide the training necessary for a QAS to sign off on this skill.

236. For the most part, OJT appears to have been accomplished within a period of 6 - 8 weeks of training, but this is most likely to occur when the new group of AI trainees has a similar set of skills and experience and in some cases the anticipated time for training does not adequately account for significant differences in skill level or experience within the group. That said, exceptions to the 6 - 8 week timeframe were, for the most part, attributed to scheduling, extenuating personal circumstances, or AIs needing additional training. We anticipate the NAVAUDSVC report also will address this.

237. As the training program is currently structured, we do not understand the basis for arguing the time allowed for OJT is inadequate, given the fact that the driving force is completion of the items in the JQR booklet. Whether it takes six weeks or 16 weeks, an AI trainee should not become an AI until all JQR items applicable to the work the particular AI will inspect have been completed.

238. The evidence suggests to us that during classroom training, and perhaps during OJT, some AIs are exposed to skills and techniques that do not apply to the areas of work they will be responsible for as AIs. Likewise, the same JQR booklet is used for every trade - electrical, mechanical, sheet-metal, etc. - and is not tailored to each individual trade. Consequently, when an AI trainee has learned all the tasks required for the work he or she will perform, there may be blanks in the JQR. To avoid confusion, a better approach would be to tailor the JQR booklets to specific trades. Care should be taken to ensure AI trainees do not mistakenly believe that they are authorized to inspect every trade that is discussed in the classroom.

239. The testimony provided during the week of 16 April 2012 indicates a lack of consistency in how the ConCert Training test administered at the end of the two days of classroom training was administered. Some interviewees stated everyone was given the test to complete on their own at the end of the classroom training, others stated that the test was reviewed as a class exercise at the end of the classroom training, while others stated they did not see a test at all.

240. Although FRCSW cites fiscal prudence as a reason to delay the provision of Conflict Resolution Course to AI trainees such

that some do not receive it until after they become AIs, this is an important requirement of the JQR, and should be accomplished before AI certification. Based on the observations of personnel conducting AMIs, we think Conflict Resolution training could be more closely tailored to the specific conflicts experienced by the QAS and, more recently an AI. This training could be brought "in-house" to be conducted by AIs and QASs who have first-hand experience and appropriate skills and personality to effectively address this very important area.

241. The investigation team noted an inconsistent trend when interviewing AIs about what Conflict Resolution is and what constitutes a Conflict of Interest. Some were able to illustrate the difference by using a real life example. Others were not able to describe or appear to understand what the two concepts are. FRCSW advocates teaching a Conflict Resolution course, provided by a contract facilitator. But most of the AIs, starting from program inception, did not attend this class or have documentation in their records demonstrating they attended the class. All personnel involved in the performance of work subject to evaluation for conformance with standards, whether they be artisans, AIs, QASs, Production or Quality Department Supervisors or Managers, should undergo initial and annual refresher to deal with Conflict Resolution and Conflict of Interest.

242. Several members of the investigation team observed the meeting between the AI trainee, the CO, Production Officer and Quality Director that takes place when the CO gives the trainee his or her AI stamp. The team members agreed that when an AI leaves a meeting such as the one they observed with their stamp, they should understand their responsibilities and who to go to when there is a conflict. Nonetheless, the AI interviews indicate this is not always the case and we cannot over-emphasize the importance of Conflict Resolution training.

243. In every training situation, sufficient time must be provided to a QAS in order to complete the required AI training areas. Whether it impacts a Production schedule or not, adequate training must be a priority. The QAS assigned to Yuma provided a list of specialized functional areas that needed more training. FRCSW QA Management recognized that the training provided to the AIs in Yuma did satisfy the requirements of their Training Program, but more emphasis needed to be placed in certain specialized areas. We were told this specialized training was provided to the AIs by the next QAS who rotated to Yuma, and we confirmed it took place with that QAS and the AIs who were involved in this matter.

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244. The findings of fact describe the circumstances surrounding two AIs who failed to perform their AI functions properly in selected instances. Both AIs were experienced artisans when they became AIs, and we found no specific deficiencies in their training. They simply made errors during the performance of their work. We are not persuaded that these deficiencies demonstrate AI training is inadequate. The evidence surrounding the loose control wheel nut indicates that no one at FRCSW had worked on this item or in the area of this item while the aircraft was at FRCSW. QAS confidence and flight-line observations are not limited to work performed at FRCSW and we do not understand how the discovery of issues pertaining to work not performed or inspected at FRCSW indicates the AI training program is inadequate or AIs are not qualified.

245. We are extremely concerned by any suggestion of falsification of training records, which is exactly what the 2012 AMI found upon reviewing the JQRs. Implying it is anything less than falsification by referring to it as "gun decking" or "pencil whipping," as if this practice can be tolerated in small amounts, is unacceptable. The AI trainee must have the JQR available at all times to ensure data is entered when the training is accomplished, and the QAS responsible for that training must stamp it at that time or not at all.

246. In our opinion, the real test of the adequacy of AI training may be found in the quality of the work being turned out by FRCSW. As noted in other sections of the report, the evidence available to us indicates little if any, and certainly no significant, change in the defect rate in FRCSW work that is subject to AI verification. In addition, information provided by QD-5 on 2 October, 2012 indicates the average "defect incurred rate" for AIs, based on 7,037 total observations of either their artisan or AI work, is only 4.79%. We think this significant, even if it does not distinguish one from the other.

Conclusion

247. The allegation that FRCSW management failed to suitably train AI candidates to perform AI functions is **not substantiated**.

Recommended Actions

248. FRCSW should continue to comply with the training requirements set forth in the NAMP and FRCSW Quality Manual.

249. AI trainees should complete Conflict Resolution Training before receiving their AI stamp. Some form of Conflict Resolution refresher training should be conducted annually.

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Extend the training to all personnel involved in the performance of work subject to evaluation for conformance with standards, whether they be artisans, AIs, QASs, Production or Quality Department Supervisors or Managers.

250. Use the ConCert Classroom Training Course, including the written evaluation, as an opportunity to remove from the program those trainees whose verbal and written communication skills are inadequate to allow them to function effectively as AIs.

251. Revise and expand the written test given at the end of classroom training; 14 questions is insufficient to adequately evaluate whether the AI has absorbed the information presented in this segment of AI training. Ensure the written tests are completed individually and not as a group exercise.

252. Revise the current JQR to more accurately reflect specific job skill sets required for specific work area or trade, i.e. Center Barrel line, Canopy Shop, Fabrication, sheet metal, mechanical, electrical, etc. to avoid marking sections N/A, lining out and changing titles by hand, or leaving blank items in the AI trainee's JQR because an item does not apply.

253. Discipline anyone found to have engaged in falsification of a JQR. Accuracy, integrity and candor are at the heart of any quality assurance program; gun decking or pencil whipping cannot be tolerated.

254. Provide AI refresher training periodically, or at least every four years, to comply with NAMP section 7.2.4.3.7, which states: "Refresher training will be provided to certified individuals every 4 years and whenever the review of quality data reveals adverse trends."

255. Determine whether the QAS or the AI will conduct the classroom and OJT portions of AI training. Justify any decision to shift training to the AI, or modify the FRCSW Quality Manual to reflect only a QAS may perform these functions.

Allegation Three

That FRCSW E-2/C-2 AI AI-1 inspected mechanical work when he was only certified to inspect electrical work, in violation of Appendix 7-D, paragraph 5.d, subparagraph 3 of the FRCSW Quality Manual. (**substantiated**).

Findings

256. Appendix 7-D, Concurrent Certification Program, of the FRCSW Quality Manual states, at paragraph 5.d, that AIs shall:

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(1) Not perform "second set of eyes" AI/CI inspections or concurrent certification on their own work, per COMNAVAIRFORINST 4790.2A and this Manual.

(2) Determine what trade the request for inspection involves.

(3) Perform inspections accurately and completely per applicable specifications and only on operations, tasks, or functions they are trained, qualified and certified to perform.

257. Aircraft Operation Work Order 9000095557, dated 3 November 2010, contained four Operation Descriptions: (1) Perform Wheel Brake System Operational; (2) Perform Arresting Gear System Operational; (3) Perform Elevator Control System Operational; and (4) Perform Flap and Aileron Droop System on an E-2. All operations were all verified by stamp CC002, assigned to AI-1. These repairs are mechanic operations but AI-1 was only certified to perform Electrical AI functions.

258. During his interview on 7 December 2011, the senior investigator asked AI-1 if he had ever stamped an area that he was not certified in and he stated, "No." During his interview on 26 January 2012, AI-1 was asked if he was qualified to do mechanical certifications. He responded, "Just the panel closures."

259. During a follow-up telephone interview on 9 March 2012, the investigator asked AI-1 about the Work Order 9000095557 specifically asking if "Perform Wheel Brake System Operational" was considered a closed panel inspection and he responded "No." The investigator then asked AI-1 why he verified the repair since he was only certified as an Electrical AI. AI-1 responded, "Because they didn't have a "Mech"⁴³ up there [Point Mugu] and our supervisor told me to go ahead and stamp it." The investigator asked who the supervisor was and AI-1 responded, "QD-9." QD-9 is a senior QAS for the E-2/C-2 Program. AI-1 also responded, "It is pretty normal if on travel" and added "QD-9 has a good gauge on who feels comfortable and tells them to go ahead and do it after he talks to them." AI-1 also advised during the telephone interview that this "normal" practice had stopped about a month and a half ago and they were no longer allowed to stamp outside of their trade.

260. During his interview on 16 April 2012, the senior investigator asked QD-9 if he ever asked someone to certify or

⁴³ "Mech" is a term that plant personnel use when referring to Mechanical.

verify work outside of their trade and he responded, "No." The investigator then asked if a shortage of Mechanic AIs ever caused him to ask an AI to certify work in Point Mugu that was outside of their trade and he responded, "No."

Discussion and Analysis

261. The FRCSW Quality Manual states that AIs are only authorized to verify "operations, tasks, or functions they are trained, qualified and certified to perform." The evidence demonstrates that AI-1 inspected a mechanic operation when he is only certified to inspect an electrical operation.

262. During his initial interview under oath on 7 December 2011, AI-1 was not truthful when he said "no" after being asked if he had ever stamped an area that he was not certified in. Although he subsequently admitted his violation when confronted with additional evidence, AI-1 justification that he only did this because his supervisor, QD-1, told him to "go ahead and stamp it" does not authorize or justify his own wrongful action.

263. Although AI-1 stated that QD-9 instructed him to conduct this verification, QD-9 denied ever telling anyone to inspect outside of their trade, thus presenting a question of credibility for the investigator. The investigator believes QD-9 displayed a sincere demeanor during his interview and appeared shocked when the inspector suggested that he would tell someone to inspect outside of his trade. AI-1 boastful demeanor and untruthfulness during the first interview, as well as his disregard of FRCSW rules on multiple occasions (see Allegation 5), caused the investigator to find him less credible than QD-9.

264. The issue that raises the most concern about AIs certifying outside of their trade is the lack of internal controls to prevent this type of violation from occurring. Many AIs told the investigators during their interviews that they have been asked to certify outside of their trade, but refused to comply.

265. The AI interviews also demonstrate people in FRCSW shops do not understand which AIs have the authority to inspect specific trades. Before ConCert, Production personnel had to ask a QAS, who has authority to inspect any trade, to certify their work. But each AI may only inspect a single trade and the workforce has not caught up with this change in authority.

266. The spreadsheet provided by CDR QD-5 indicates that AI-1 was one of the original AIs certified in February 2007. Since that time, the spreadsheet indicates his work as an artisan (or as an AI) has been observed by a QAS or another AI 47 times and

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no defects have been noted. That is, according to the information provide to us in September, he has a 100% defect free rate for work he performs as both an artisan and as an AI. In that same timeframe, the spreadsheet indicates he has performed 1,907 AI observations, and noted 82 defects of one type or another, for a 4.30% defect observation rate. This compares to a 12.04 average defect observation rate for all AIs, and a 12.11 average defect observation rate for QASs.

Conclusion

267. The allegation that FRCSW E-2/C-2 AI AI-1 inspected mechanical work when he was only certified to inspect electrical work, in violation of Appendix 7-D, paragraph 5.d, subparagraph 3 of the FRCSW Quality Manual is **substantiated**.

Recommended Actions

268. Processes must be put in place to ensure that verifications are conducted accurately and completely per specifications and only on operations, tasks, or functions that Artisan Inspectors are qualified and certified to perform.

Personnel Actions Planned or Taken

269. FRCSW Management should take appropriate action to hold AI-1 accountable for verifying mechanical work when he was only certified to verify electrical work.

Allegation Four

That FRCSW F/A-18 AI AI-2 inspected machinist work when he was only certified to verify sheet metal work, in violation of Appendix 7-D, paragraph 5.d, subparagraph 3 of the FRCSW Quality Manual. (**substantiated**).

Findings

270. Appendix 7-D, Concurrent Certification Program, of the FRCSW Quality Manual states, at paragraph 5.d, that AIs shall:

- (1) Not perform "second set of eyes" AI/CI inspections or concurrent certification on their own work, per COMNAVAIRFORINST 4790.2A and this Manual.
- (2) Determine what trade the request for inspection involves.
- (3) Perform inspections accurately and completely per applicable specifications and only on operations, task, or

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functions they are trained, qualified and certified to perform.

271. Enclosure 2/Complainants Enclosures 4 and 5 of the OSC Tasking Letter show Production Work Order A0028908 dated 24 August 2011 with an Operation Description of "SW41 Repair Damaged Fastener Hole #1324" was verified by stamp AI048. This is machinist work, but AI stamp AI048 is assigned to AI-2, who is only certified as a Sheet Metal AI.

272. During his initial interview on 8 December 2011, AI-2 was asked if anyone ever asked him to verify an area not in his IQR, outside of his training, or that he had not been trained on. His answer was "No."

273. During his follow-up interview on 26 January 2012, the investigator showed AI-2 work order A0028908 and was asked to confirm that was his stamp and that he verified that work order. He said "Yes" to both questions. When the investigator asked AI-2 why he stamped the work order knowing he was only certified in sheet metal he stated, "Because I thought we can do it all ..."

274. The investigator asked AI-2 if he was certified in sheet metal. He answered, "Yes." The investigator asked, "Do you see a conflict with that?" He answered, "Yes, I know." The Work Order clearly showed a Machinist Operation. AI-2 stated that he thought he could stamp this because Machinist and Sheet Metal artisans work together. AI-2 later explained that during AI training they demonstrated verifying all trades, and he thought he could verify any of them that were demonstrated.

275. This violation occurred in AI-2's first week as an AI and was caught by QD-10, a QAS, while he was conducting QA surveillance on AI-2's AI verifications. QD-10 informed FRCSW QA Management. QD-4 and QD-3 counseled AI-2 on verifying work outside of his trade.

276. During his interview on 8 December 2011, QD-3 testified that he knew AI-2 had verified work outside of his trade.

Discussion and Analysis

277. The FRCSW Quality Manual states that AIs are only authorized to verify "operations, tasks, or functions they are trained, qualified and certified to perform." The evidence demonstrates that AI-2 inspected a machinist operation when he is only certified to inspect sheet metal operations.

278. Although AI-2 stamped outside of his trade it is important to note that this incident occurred within the first week of his receiving his AI stamp. Based on how questions had to be repeated by the investigator during his interviews, the investigator believes AI-2's language barrier could have played a role in his misunderstanding his authority.

279. After learning of this violation, AI-2 said he believed he should have only been shown sheet metal inspections in AI training. AI-2's testimony was credible enough for the investigator to believe he thought he was authorized to stamp all of the trades that were taught in ConCert training.

280. The spreadsheet provided by QD-5 shows that AI-2 has been an AI since September 2011. Since that time, a QAS or an AI has verified his work as an artisan or an AI 66 times, and two defects were observed, for a 98.21% "defect free rate" on his artisan and/or AI work. The information we have does not permit us to distinguish his work as an artisan from his AI verifications. In that same timeframe, he made 397 AI "observations" and recorded 86 defects of one type or another, for a defect observation rate of 21.66%, considerably higher than the 12.04% average defect observation rate for all of the 87 people currently performing AI functions at FRCSW.

Conclusion

281. The allegation that FRCSW F/A-18 AI AI-2 inspected machinist work when he was only certified to verify sheet metal work, in violation of Appendix 7-D, paragraph 5.d, subparagraph 3 of the FRCSW Quality Manual is **substantiated**.

Actions Planned or Taken

282. AI-2 was counseled by QD-4 and QD-3 on verifying work outside of his trade and clearly emphasized the fact that he was only certified to inspect sheet metal work as stated on his designation letter from the CO.

Recommended Actions

283. Tailor classroom training to ensure that discussions of work aspects that do not apply to all AIs include only those AI trainees that will perform the work being discussed. If this is not possible, emphasize during training that even though the trainer may be covering all trades during the discussions or demonstrations, each AI is only authorized to verify the trades listed in the AI designation letter the CO gives to that AI.

Allegation Five

That on March 28, 2011, FRCSW E-2/C-2 AI AI-1 verified the aircraft operation work order maintenance book for an aircraft that was returned to squadron custody on March 15, 2011, in violation of Chapter 4, Paragraph 4, section e(7) of the FRCSW Quality Manual. (**substantiated**).

Findings

284. The OSC tasking letter states the Complainants alleged that on March 28, 2011, an AI certified an aircraft that had been removed to squadron custody on March 15, 2011, indicating the certification was completed without actually conducting a hands-on, in-person verification of the aircraft.

285. Chapter 4, Paragraph 4, section e(7) of the FRCSW Quality Manual states that certifiers in all organizations shall "certify their own work, or work done by others for whom they are accepting responsibility, at the time the work is completed."

286. Because the copy of the work order contained in Enclosure 2 of the OSC tasking letter was incomplete (it contained only four of the pages), the senior investigator obtained a complete copy of the Aircraft Work Order forms for the aircraft identified as "ED05G," consisting of 16 pages.

287. After reviewing the complete package, the investigator noted the Work Order forms contain multiple Artisan stamps with different dates acknowledging the work completed on this aircraft on pages 1 - 13. Each work order line item that required work to be completed was stamped and certified by the artisan on a date prior to the aircraft's return to the squadron. These pages also demonstrate that the AI responsible to verify the Artisan's work did so before the aircraft was sold back to the squadron.

288. However, Page 1 of 1 for Repair ID: 9000095557, Part: E2CG1.M0EX990200 work order for the "Sell Final Assembly P/W to QA" was not stamped and dated by AI-1 until 28 March 2011, which was approximately two weeks after the aircraft was sold back to the fleet. This aircraft was in squadron custody on 15 March 2011.

289. AI-1 told the investigator who originally raised this matter with him that the aircraft may have been sold back to the squadron before the work order maintenance book for the aircraft had been reviewed and closed out. The aircraft was at Point Mugu, CA, therefore the Artisans and AIs went there to perform

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the maintenance and verifications, but instead of staying with the aircraft, the work order maintenance books were returned to FRCSW to be reviewed for closure.

290. PD-4 said the process of separating the work order maintenance book from the aircraft before the aircraft is returned to the squadron is inappropriate because it would give "the wrong impression." Therefore he said the work order maintenance books are now closed at the site where work is performed and when the work is completed.

291. PD-4 stated that Quality Assurance personnel investigated this matter in the March/April 2011 timeframe and determined "everything was done the way it was supposed to be in this situation." However, shortly thereafter, management started enforcing the requirement that work order maintenance books be closed out before aircraft are returned to squadrons.

292. The investigation that PD-4 referred to in his statement was the FRCSW Root Cause Analysis Investigation Report dated 29 March 2011, that was submitted by QD-9, E-2/C-2 Senior QAS, on an E-2/C-2 Aircraft, Seq. ED04G, that was sold back to the fleet prior to verifying the work order maintenance books. This incident occurred just before the one identified by the Complainants. The Root Cause Analysis Investigation Report contained the following recommendations:

E2 CNS/ATM Team complies with Chapter 4 of reference (b) when certifying/verifying AOWO books during the modification process.

E2 CNS/ATM Team requests assistance from IET/PAR/E&E personnel when alterations to the work documents are required.

E2 CNS/ATM Team refrains from releasing aircraft to receiving squadron prior to completion of all work documentation.

E-2/C-2 Program Leadership develop a POA&M to fully staff and support the E2 CNS/ATM Team at Point Mugu.

Discussion and Analysis

293. Review of the Work Order forms show that the Artisan and AI stamps for each line item denoting the maintenance performed on Aircraft "ED05G" are all dated before 15 Mar 2011, the day the aircraft was returned to the squadron. The only verifications dated after 15 Mar 2011 are those of AI-1, who performed the workbook review and closing.

294. The violation occurred when AI-1 verified the work order maintenance book knowing the aircraft had already been returned, or "sold back," to the squadron.

295. PD-4 told the investigator that FRCSW leadership, including Production and Quality leadership, deemed this process "inappropriate." PD-4 advised that FRCSW has changed the process to ensure that all work order maintenance books are verified and that the work order maintenance books are closed out before the aircraft is returned to the fleet.

Conclusion

296. The allegation that on March 28, 2011, FRCSW E-2/C-2 AI AI-1 verified the aircraft operation work order maintenance book for an aircraft that was returned to squadron custody on March 15, 2011, in violation of Chapter 4, Paragraph 4, section e(7) of the FRCSW Quality Manual is **substantiated**.

Actions Planned or Taken

297. PD-4 advised that FRCSW has changed the process to ensure that all work order maintenance books are certified and that the work order maintenance books will be closed out prior to aircraft being returned to the fleet.

Recommended Actions

298. That FRCSW Management take appropriate action against AI-1 for certifying completed work performed on an aircraft after it had been returned to squadron custody.

Allegation Six

That, before moving the Type I verification function from the Quality Department to the Production Department, FRCSW did not perform an operational risk management analysis conforming to the criteria set forth in OPNAVINST 3500.39C, Operational Risk Management (**substantiated**).

Findings

Basis of This Allegation

299. The management interviews and slide presentations obtained during this inquiry are replete with assertions that when performing inspections or verifications, AIs work for, and report to, the Quality Department rather than the Production Department. Senior FRCSW personnel said the same thing during

their interviews, and insisted that AIs know this. COMFRC and NAVAIR leadership made similar statements.

300. But the Complainants contend this is simply not true. For example, the OSC tasking letter states:

Furthermore, the whistleblowers specifically note that AIs still report to their Production Department supervisors, and are expected to conduct quality verifications on the work completed by their Production Department colleagues. These are the same verifications that were previously conducted by QA Specialists, who report to a chain of command within the Quality Assurance Department and are not critiquing the work of their own colleagues.

301. The Complainants made similar assertions to the investigators during their interviews and in emails that asked them to clarify what they meant by a "conflict of interest." Clearly, both FRCSW Management and the Complainants appear to believe that who the AIs report to during Quality Assurance work is critical to this matter. Before presenting the facts pertinent to this issue, we think it appropriate to discuss the meaning of a conflict of interest and the applicable standards as we understand FRCSW personnel are using that term.

Definition of Conflicts and Selection of Standards

302. When we asked people at FRCSW what the concept of a conflict of interest means to them, almost everyone mentioned the concept of conflicting loyalties. Although we emphasize that we are not dealing with the rules on conflicts that pertain to contracting with the private sector, we found the following general definition, which appears on a Defense Acquisition University (DAU) Conflicts of Interest website, aptly captures the fundamental concept when it states:

A conflict of interest is a situation where a person is torn between duties (or loyalties) to two or more different parties. A conflict of interest can arise when someone finds him- or herself trying to serve (or to be loyal to) two or more persons or organizations whose interests conflict with one another; i.e., "serving two masters."⁴⁴

303. The DAU goes on to identify three broad categories of conflicts by referring to GAO and Federal Acquisition discussions of conflicts:

⁴⁴ See <https://acc.dau.mil/CommunityBrowser.aspx?id=338613>

The Government Accountability Office identifies three broad categories of conflict of interest: (i) Unequal access to information; (ii) Impaired objectivity; (iii) Biased ground rules. FAR Part 3 (Improper Business Practices and Personal Conflicts of Interest) provides in-depth coverage of personal conflicts of interest. FAR Subpart 9.5 (Organizational and Consultant Conflicts of Interest) covers organizational conflicts of interest.

304. Although the conflicts concepts found in GAO accounting and auditing standards and the various levels of the federal acquisition regulation fundamentally rely on the general definition DAU gives, the rules they establish do not directly apply to the situation we see at FRCSW. Likewise, the Office of Government Ethics Regulations found at 5 C.F.R. § 2635 and the federal criminal conflicts laws in 18 U.S.C. Chapter 11 upon which they rely do not apply directly to the ConCert Program.

305. Another way to look at "conflicts" is to analyze a situation from the perspective of independence and objectivity, basic principles that are intended to ensure fairness in virtually every government operation, including the conduct of audits, inspections, and investigations. The current trend is to analyze circumstances for "impairments" to independence and objectivity. Using this approach, one could easily conceive that it would be imprudent, if not improper, to allow an AI to verify the work of a relative or a superior. Verifying the work of a close personal friend, an artisan with whom the AI has an outside financial relationship, or with whom the AI is feuding would appear improper to most neutral observers. Using this analysis, the argument the Complainants are raising is that the members of the Production Department form a "family" whose members cannot be objective about the quality of the work members of the family perform, and consequently should not be allowed to verify the work of other family members.

306. We discussed the conflicts issue with the NAVAUDSVC team conducting the audits related to this inquiry. They told us that FRCSW has not included ConCert as an assessable unit in its internal controls program, which leaves ConCert vulnerable to various forms of errors, including fraud. They suggested that the "conflict" being described could be analyzed under the internal controls concept of "separation of duties." The objective of this concept is to divide tasks comprising a process among two or more people or groups in order to create a form of checks and balances on the process.

307. Following the separation of duties theory, it would be unwise to allow artisans to complete the final inspection of

their own critical work. Artisans do check ("inspect") all of their own work to ensure it conforms to those standards and then they "certify" that work to demonstrate they have performed the work in accordance with applicable standards. With respect to non-critical work not subject to Type I verification, that is the end of the process; we were told that after artisan certification, non-critical work is not verified by a "second set of eyes" except perhaps to the extent a QAS reviews it during a confidence inspection or flight line review. Thus, there is no "separation of duties" for non-critical work. Since the approach to non-critical work did not change with the introduction of ConCert, we do not think Complainants are challenging FRCSW practice for non-critical work.

308. ConCert does build in a degree of separation of duties for critical work, because artisans and AIs may not verify their own critical production work; another AI must verify it. This is a first step in implementing separation of duties. But the auditors said that the greater the degree of separation, the better. For example, they said it would be appropriate to implement controls that ensure the AI and the artisans whose work the AI inspects are not on the same crew and do not work for the same production supervisor. Allowing AIs to inspect only work performed in segments or divisions with which they did not normally interact in a production capacity would be even better. In that regard, we note AI-4's testimony that he will not verify the work of his subordinate, but will ask an AI on another team to verify it. We think this an excellent idea, but are not aware that this has been built into ConCert.⁴⁵

309. In undertaking any conflict analysis, however, it is important to remember that all FRCSW personnel work for the Commanding Officer, who is responsible for balancing quality, timeliness and cost against each other. In this sense, production personnel, including supervisors, must have some responsibility for quality; the argument that supervisors pressure their subordinates to get the job done quickly without any regard for doing the job right is too simplistic. Pushed far enough, the separation of duties concept would require using inspectors from outside of FRCSW. We believe this is impractical and unnecessary, so in the absence of a good internal controls program, we decided to focus our inquiry at this point to determining what operational risk management

⁴⁵ Complainants would go even further since they challenge the fact that ConCert authorizes one artisan to perform Type I verification on a different artisan's critical work rather than require that verification be performed by a QAS who works in the Quality Department.

practices FRCSW employs, using OPNAVINST 3500.39C, Operational Risk Management, dated 2 July 2010, as our standard.

310. As explained in the opening discussion of that document:

Risk is inherent in all tasks, training, missions, operations, and in personal activities no matter how routine. The most common cause of task degradation or mission failure is human error, specifically the inability to consistently manage risk. ORM reduces or offsets risks by systematically identifying hazards and assessing and controlling the associated risks allowing decisions to be made that weigh risks against mission or task benefits. As professionals, Navy personnel are responsible for managing risk in all tasks while leaders at all levels are responsible for ensuring proper procedures are in place and that appropriate resources are available for their personnel to perform assigned tasks.

311. To address the risk analysis, our findings of fact address three issues: (1) to whom do the AIs report when performing AI functions; (2) are there real or perceived pressures to "keep the work moving" that would cause an AI to sign off on work he or she did not inspect, to perform an inspection too quickly to do an adequate evaluation or to accept nonconforming work; and (3) has FRCSW, through the conduct of a risk analysis, developed meaningful mechanisms to mitigate the risks created by shifting the inspection or verification function from the QAS to the AI.

Evidence Establishes AIs Report Only to Production Department

312. Evidence, discussed in allegation one, indicates a QAS from the Quality Department helps rate AI applications. We also believe Production Supervisors and Quality Department personnel encourage artisans they believe would make good AIs to apply for AI vacancies. For now at least, a QAS conducts AI classroom training and OJT, and recommends that AI trainees receive their AI stamp when the QAS believes they have completed OJT.

313. The evidence also demonstrates that when the CO gives each new AI his or her stamp upon the completion of OJT, he tells the AIs they work for him when performing QA functions. AIs participate in periodic ConCert Council meetings where they can discuss concerns with members of the Production and Quality Departments. But we found no evidence that AIs report to, or are rated by, anyone outside of the Production Department. On the contrary, QD-2, QD-6's predecessor, told us there was no intention to have AIs report to the Quality Department when the parameters of the ConCert Program, for which he was largely

responsible between 2006 and his retirement in July 2010, were established.

314. In response to a request for FRCSW HR documents on hiring actions for AIs, the investigator received an email from the FRCSW Total Force Director, FRCSW-1 that stated:

Attached is a sample of each in the E2/C2 line - just to clarify, the artisan inspectors do not work for the QA department, they work for the production lines.

315. Documents obtained from FRCSW-1 showed that Production Supervisors signed off on all hiring and personnel actions for the AI. The Quality Department has no role in AI hiring actions even though Quality Department leadership insists they are in the AI chain of command. While we did find some position descriptions that had been signed by both Production and Quality Department personnel, we found no AI personnel actions that had been signed by Quality Department Personnel. For example, the AI performance evaluation is conducted only by the Production Department. The Quality Department has no role in the Artisan Inspector performance evaluation. We found no evidence that indicates an artisan's performance of AI functions is even considered during the performance appraisal cycle.

316. Likewise, FRCSW CO-3 told the investigators: "I pay production to move production along, but I pay quality to ensure we do it effectively." Presented the opportunity to assert Production's responsibility for a quality product, FRCSW CO-3 instead focused on monetary reward as an incentive for moving the work along and even suggested the primary function of the Quality Department is "effectiveness" rather than quality. FRCSW CO-3 gave this explanation while describing to the investigators what he says to the new AI upon presentation of the AI stamp. FRCSW CO-3 also tells the new AI he can come to Quality Department Leaders and even the CO if the AI believes work isn't being done properly. While "going to the CO" may be practical in the squadron environment, we are skeptical of the "effectiveness" of such assurances in the much larger FRCSW environment.

317. The investigators were unable to find that the Production Department provides any positive reinforcement for quality AI performance. When PD-1, FRCSW Production Director, was asked if AIs receive any awards from Production for the quality of their AI work, he responded in an email dated 5 June 2012:

I doubt that Production has given an award solely for AI performance. Special Act awards typically cite a range of acts, serving as an AI could be mentioned along with how

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the individual excelled with tangible (quality, cost, cycle time) or intangible (morale) performance.

318. PD-1 did further research and provided the following information in an email dated 21 June 2012:

All AI awards have been pulled. The awards were for a range of performance based achievements and there were no awards for AI performance. The awards recognized individuals for team based achievements, citations for Artisan of the Quarter and special acts that provided tangible and intangible achievements. I personally reviewed each of the 217 awards.

319. AI testimony establishes that while the aircraft is on the Production floor, the Production Supervisor is in charge and the AIs report to him. AIs indicated that if one of them has problems with an artisan's work, the AI may or may not go to anyone in the Quality Department for Assistance.

320. During their interviews, AIs made statements suggesting the Production Supervisors wanted them to "let things go" or "move through the inspection faster." But no AIs said they let that happen or saw someone else let something go. Most of the AIs interviewed wanted to keep their Production supervisors happy and referred to the Production Supervisor, not someone in the Quality Department, as their supervisor. They explained that as an Artisan/AI, you are hired by a Production supervisor who writes your evaluation and is your reporting supervisor in the shop.

321. AIs understand they are not rated independently on their AI performance by Quality Department personnel. Their performance rating is based on the Production Supervisor's perception of their work as artisans. AIs do not perceive the Quality Department has input into things that matter to them, such as performance evaluations and awards. We were not provided any information that suggests Production Supervisors are rated on the quality, as opposed to the timeliness, of their work, although we find it difficult to believe that a supervisor who repeatedly allows non-conforming work would not eventually face some form of sanction.

Pressure to Keep Production Moving

322. Although the FRCSW Quality Assurance (QA) Officer, QA Division Head, and Production Director all testified that the AIs report to their QA chain while conducting inspection work and report to their Production chain while conducting artisan

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work, the E-2/C-2 Local ConCort Council (LCC) Meeting Minutes for 26 October 2010 state:

Below are several concerns that our AIs shared not only in this meeting but also in past meetings which still exist. It's recommended that our production managers review these concerns and take appropriate corrective action:

1. Pressure by Supervisors and Crew Leaders to hurry their work and have expressed concern (making negative comments) to the AIs when they find discrepancies while performing AI functions."

323. On 29 September 2011, FRCSW Supervisory Human Resources Specialist, HRSC-3 was notified by FRCSW Total Force Director, FRCSW-1, of an issue concerning an AI who raised concerns regarding the roles and responsibilities of an AI between QA and Production and provided the following examples:

- a. He was directed to write-up only Foreign Object Debris (FOD) during the inspection on E2 sequence number ESR01:
- b. He was directed not to discuss this direction, or any other quality issues with the Quality Assurance (QA) Department;
- c. There is a perceived pressure by the AIs) that they must go faster even when this could be at the expense of quality.

324. As a result of the AI concerns, HRCS-4 and HRCS-5, Human Resources Specialists from the HRO Coronado Site Office conducted a Management Inquiry on "Alleged Supervisor/Product Line Infringement on Aircraft Inspector Roles and Responsibilities" by FRCSW based on the information received by HRSC-3.

325. Results of the Management Inquiry dated 21 October 2011, indicate the Crew Leader and Supervisor statements support this finding. However, the HR report did not indicate that it had received any indication AIs were pressured by management to work faster without regard to quality.

326. RDML Matthews stated in his interview that while he was COMFRC, he directed FRCSW to review workbook standards to make sure "we weren't squeezing the artisans' time so much that they were not able to - they felt that they were under too much pressure and didn't have time to do proper and thorough inspections. So that's one of the concerns we had that maybe they would feel, as production people, rushed to get an

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inspection done and were not given the requisite time to do a thorough inspection."

327. AI testimony left the investigators with the impression that AIs feel pressured to sign off on work that they wanted to devote more time to verifying, due to the fact that Production prepares their performance evaluations and the AIs think it is necessary to do whatever it takes to keep Production happy. On the other hand, no AIs said they had been forced to "let something go" that would sacrifice aircraft safety. Nor did any AIs indicate they believed anyone had "falsely certified" that a task was performed when it had not.

328. Some AIs said they may have completed the inspection faster than normal, but no one, in the 104 interviews conducted, stated they sacrificed quality or safety.

329. The AI performance evaluation is conducted by the Production Department. The Quality Department has no role in the AI performance evaluation, even though Quality Department leadership insist the AI is in the Quality Chain of Command when conducting AI duties.

330. PD-4 told the investigator the AIs are told during their training to expect to be pressured but that they have a "no vote." They are told they can go to the QASs, to him as the Production Officer, and to the ECC meetings. As noted, the Commanding Officer makes similar statements when giving AIs their stamps after they complete training.

331. Since 2006, the QAS Staff has significantly been reduced at FRCSW. There has been a steady decrease in the QAS ranks from 78 in 2006 to 52 in 2011. This reduction was achieved by not backfilling retirements and offering the Voluntary Separation Incentive Program (VSIPs) to those holding QAS positions.

332. In late 2011, FRCSW QA Management recognized that the number of QASs had become too low to accomplish the tasks required by the department, so it started hiring actions to bring more QAS on board. Four additional QAS have been hired bringing the total to 56. This still represents a significant reduction in QAS Staff from 2006. With the implementation of ConCert, the focus of the QAS was redirected from "flashlights and mirrors" (inspections) to conducting audits, providing metrics and supporting ConCert with training and surveillance.

333. Pressure was on the QASs to properly train the new AIs, while taking on the new responsibilities with audits and metrics. Several of the QASs that were interviewed were overwhelmed with the amount of work and responsibilities placed

on their shoulders and not enough of them to accomplish the tasks. One of the Complainants stated, "The number of QA Staff has been diminished to the point of being ineffective."

334. QD-5 told the investigator that when he arrived at FRCSW in September 2010 he asked the CO: "We're going to do this or we're not - Pick." The CO responded: "We're doing ConCert; I'm in with both feet." QD-5 stated they found: "We cut too many people out of QA. Our audit NAMP - Not NAMP compliance, but our ability to monitor the NAMP compliance and do our audits and stuff was insufficient."

335. The investigators also found the Production Department has applied pressure to the QASs. As an example, they were told of an incident in 2009 when a QAS was challenged by a Production Department employee over why he would "not go along with" an incorrect Engineering Information Rapid Reply Request (3R) for aircraft N730.

336. The 3R has since been replaced by a Request for Engineering Instruction/Temporary Engineering Instruction (REI/TEI). They are used when there are issues with the aircraft that are not covered in existing repairs or sometimes to deviate from a standard report for some justifiable reason. The main issue with this incident was not whether the 3R was written incorrectly; it was the response by a Production employee to a QAS, which exhibited a threatening, abrasive manner. The Production employee told the QAS: "If I have to go talk to your boss, I'll have you ripped out of that seat!" Except for the QAS who received the threat, most of the people involved in this incident are no longer at FRCSW.

337. During the week of 16 April 2012, the Investigation Team was given a demonstration of how AIs obtain their inspection work and conduct their verifications. An AI demonstrated each step and explained the factors he dealt with. During the demonstration, one of the production crew leaders became visibly and verbally upset that the Investigation Team was in the shop interrupting his schedule and causing the AI to take too long to complete the verification because of the explanations the AI was giving the Investigation Team as he conducted the verification.

Discussions of Risk Analysis in FRCSW Slide Presentations

338. A September 2006 FRCSW slide presentation given to NAVAIR contained several slides introducing ConCert. One mentioned a "Programmatic Risk Assessment" based upon the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD (AT&L)) Systems and Software Engineering, Enterprise Development (SSE/ED) Risk Management Guide For DOD

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Acquisition. One slide depicted the risks, benefits, mitigating factors and barriers associated with their concept of the way the Industrial Quality Management System could do business. The concept was based on Lean 6 Sigma to "Improve Quality" and "Do it for Less." The slide listed such risks as Product Integrity and Checks/Balances. Some of the listed benefits were Cost, Customer Relations, Competency, Ownership, Flexibility, and Incentives. Some of the Mitigating Factors listed to reduce risk were ConCert Councils, Visible Metrics, Accountability, Selection, Audits, and Incentives. Listed barriers included Culture, Capability, Cost, and Customers.

339. COMFRC QD-1, COMFRC Director of Quality Assurance and Policy, prepared an Issue Paper in May 2008 to address ConCert implementation beyond the E-2/C-2 platform, which would require COMFRC approval. The suggested decision required COMFRC to review and approve or disapprove the ConCert process and implementation. The factors listed in the issue paper as significant in making this decision were:

Inherent risk exists and has been acknowledged within the proposed ConCert Artisan verification process. Supporting processes were established to minimize the direct risk of critical product deficiency escapes. Strict adherence to the supporting processes is the primary mechanism to assure control is maintained.

Method to establish and implement the supporting processes to oversee and reduce risk for deployment at remote sites must be provided and discussed.

340. FRCSW CO-1 presented a ConCert status brief at the Commanders Conference in June 2008 that contained slides discussing risks, benefits, and mitigation for the ConCert Program. The listed risks included: Degradation or compromise of quality standards; Diminished Capabilities - QA function, capacity, skills reduced; Diminished Capabilities - a regulatory authority diminished; Diminished Capabilities - Degraded effectiveness-analysis; Production Burden.

341. Some of the benefits listed in his brief included: Artisans more involved with process improvements; Artisans more aware of requirement accuracy and feasibility; Artisans more cognizant of customer requirements and expectations; Leverages positive peer pressure to enhance performance; Contributes to uninterrupted work flow; Reduces the number of QA indirect billets; Shifts indirect function to a direct function; Improves the quality of mandatory observation (proficient artisan).

342. The following mitigating factors were identified as some that could be used to lower risks identified in the: Competency Improvement Program for training all managers, artisans and QA; Implement ConCert Support Councils; Delegate CO authority; Metrics to establish baseline and control limits; Obtain clear objective standards; Work Area Certification; Enhance accountability; Pay/Promotion/Awards; QA audits and reviews; External audits (AMMT).

343. QD-5, FRCSW Quality Assurance Officer, presented a brief in March 2011 that listed three Benefits of the Concert Program: Artisans become more aware of process improvements, cognizant of customer requirements, task requirements and enhances performance through positive peer pressure; Promotes a cultural change of ownership of product quality by artisans; and QASS become more process specialist independent of product type allowing to focus on AIRSpeed, Continuous Process Improvement (CPI), and prevention. The Risks listed in the brief were: Compromise of quality standards through peer pressure; Supervisory pressure; and Schedule pressure. To minimize these Risks, the mitigating factors listed were: ConCert Council meetings; Continuous Quality Assurance oversight; and Continuous measurement/metrics.

344. QD-5's March 2011 brief contained Lessons Learned over the past 5 years with the pilot and implementation of the ConCert Program. The lessons learned are: Selection Process (Initial selections miscalculated); Preplanning Essential (Computer access, IQRs, Promote culture change, brief management/workforce); ConCert Council Meetings demonstrate the resolution system is working; AI must maintain stamp certification or change to lower grade will be processed.

345. The investigator requested documents that reflected an operational risk management analysis for the ConCert Program had been conducted and received this response from Mr. Don Coles, FRCSW QA Dept Head, "Really wish we had one as I agree with you that it would really help matters."

346. The only mitigating factors observed by the investigators were the ECC/LCC Meetings, CO/AI meetings, external audits, and CO designation of AIs with accompanying AI meeting with CO upon presentation of AI stamp.

347. AMMT-1, NAVAIR 5.0D, AMMT, has performed a number of FRCSW QA Department maintenance inspections. He said during his interview on 4 January 2012 that the AI is serving two masters, which results in a conflict of interest.

348. AI-4, one of the AIs mentioned earlier in this report, is an F/A-18 work crew leader. He said he will not perform AI functions for the work of members of his crew, but asks another AI from a different crew to do those inspections, because he feels it would not be appropriate for him to do them himself. The investigators did not obtain any evidence indicating other AIs follow a similar practice, or are required to do so by either Production or Quality Department management.

Discussion and Analysis

349. We think there can be no doubt, despite Management's assertions to the contrary, that AIs are Production Department personnel who report only to Production Supervisors, even when they are performing quality assurance functions.

350. We also conclude there are real pressures on everyone to keep the work moving in order to meet FRCSW timeliness and cost objectives. As discussed in our concluding observations, this does not mean that quality has gone down. But it may not have improved, either.

351. There is a natural conflict of interest between Production and Quality Assurance. Although both work for the same CO, they have very different responsibilities for the same work product. The QAS have dealt with this for a very long time, and are independent of Production Management by virtue of being members of the Quality Department. By placing an AI in a role where he/she is responsible for the two distinct functions of Artisan and AI without then carefully defining the group of artisans whose work the AI may verify, FRCSW dilutes the separation of duties gained by not allowing an AI to verify his or her own critical work. In doing so, the Command has created a situation that increases the risk critical defects may escape FRCSW and go to the customer. We have not determined whether the checks performed on the flight line, which do not appear to have changed since the introduction of ConCert, are sufficient to mitigate these new risks.

352. The list of risks, benefits and mitigating factors presented in briefs from 2006 to 2012 have varied only slightly over the years. A few of the mitigating factors identified in the slides, such as the Executive and Local ConCert Councils, CO/AI meetings and external audits, have been implemented. More of the significant ideas were not. For example, we know that FRCSW has the ability to compile metrics for AI verification accuracy based on responses to our inquiries about specific AI violations noted by the Complainants, but we have been presented no evidence that baseline or control limits were established, or

that FRCSW is actively using metrics for DWOs, MAFS, or AIDRs, to track the number of times an AI's verification is found deficient based on subsequent reviews built into the process.

353. Notably absent, in our opinion, are efforts to enhance accountability for quality and make quality of work a basis for recognition, especially in the area of promotions and awards. Indeed, given the decision to shift responsibility for the conduct of Type I verifications from the Quality Department QAS to the Production Department AI, we would expect to see a corresponding shift in responsibility and accountability for quality of production work to the Production Supervisor. While we are certain that in some intuitive sense Production Supervisors know they are responsible for the quality of the work performed by their subordinates, that responsibility is not reflected in any formal manner. The result of this oversight, intended or not, places Supervisors and their subordinate artisans who are also AIs in conflict with each other.

354. The decline in QAS positions demonstrates FRCSW Management's failure to ensure that appropriate resources are available for AIs to manage risks. The unavailability of the QAS to support AI functions in a timely manner, and the pressure from Production, caused the AIs to experience a struggle between QA and Production. The Quality Department was negatively impacted by the reduction of QASs. In late 2011, FRCSW QA Senior Management recognized this lack of resources and began to hire for more QAS positions to replace those that had been cut in earlier years.

355. Insofar as we have been able to determine, no meaningful operational risk analysis was conducted prior to or during the implementation of the ConCert Program. There is nothing to back up the words on the slides we have seen, which simply reiterate basic concepts without explaining what they mean in the context of ConCert or explain how they have been addressed. This is a cause for concern because human error is a common cause of task degradation or mission failure, arising from the failure to consistently manage risks.

Conclusion

356. The allegation that, before moving the Type I verification function from the Quality Department to the Production Department, FRCSW did not perform an operational risk management analysis conforming to the criteria set forth in OPNAVINST 3500.39C, Operational Risk Management, **is substantiated.**

Recommended Actions

357. That FRCSW Quality Department be given authority and responsibility for AI hiring, firing, performance (including metrics for evaluating), and award decisions.

358. That FRCSW Production Department Supervisor responsibility and accountability for the quality of the work of the artisans under them be made more clear and specific, and be included as a separate element in their performance evaluations so as to reduce the risk created by moving the responsibility for Type I verifications from the Quality Department to the Production Department.

359. That FRCSW establish formal mechanisms an AI may use to obtain assistance from Quality Department personnel in the event the AI perceives Production Department personnel: (1) are not providing sufficient time or resources necessary for the AI to conduct a verification process; (2) are pressuring the AI to accept non-conforming work; (3) are pressuring the AI to stamp work as verified when the AI has not conducted the verification; or (4) are pressuring the AI to insert a date for the conduct of the verification other than the date it was actually performed. That FRCSW discipline Production personnel found to have interfered with the AI verification process.

360. That FRCSW conduct a formal operational risk management analysis for the ConCert Program that conforms to the principles found in OPNAV Instruction 3500.39C.

361. That FRCSW complete the annual OPNAV 3502/3 ORM Program Assessment Sheet for the ConCert Program, as required by OPNAV Instruction 3500.39C.

362. That, as part of the risk analysis effort, FRCSW create a baseline for metrics to be used to analyze how well the ConCert Program is functioning.

363. That FRCSW create measurable standards to measure the effectiveness of the ConCert Program.

Allegation Seven

That ConCert increases the risk to safety of flight and consequently poses a substantial and specific danger to public safety. (Undetermined At This Time)

Findings of Fact

364. As noted earlier in this report, SME-1 reviewed materials gathered at the beginning of this inquiry and concluded that information did not cause him to personally believe there was an impending risk to safety of flight for any of the aircraft that FRCSW had delivered to the fleet through early 2012.

365. Likewise, the February 2012 AMI, focusing on areas recommended in SME-1's memo, did not express a concern for safety of flight. Yet the AMI, which focused primarily, if not exclusively, on a "review of the paperwork" that supports the program, did note there were deficiencies in the IQRs and JQRs of AIs that suggested some degree of falsification of the information in them. Having served as a leading team member on many AMMT inspections across all NAVAIR rework facilities, AMMT-2 stated administrative training document deficiencies are not uncommon in the Quality Departments.

366. The data for DWOs, MAFs, and AIDRs provided by FRCSW suggests little change in the number or type of defect reported over time. While this evidence may not tend to support the FRCSW argument that ConCert improves quality to any significant extent, it does tend to refute the Complainants' argument that ConCert poses a danger to safety of flight.

367. The NAVAUDSVC statistician who reviewed similar data contained in the NPS Masters Thesis concluded that type of analysis is not dispositive. More to the point, preliminary findings from the NAVAUDSVC audit suggests there may be inconsistencies between the E-2/C-2 AIDRs reported by FRCSW and those reported by the squadrons receiving the aircraft after depot level maintenance has been performed. Specifically, NAVAUDSVC has received evidence of seven AIDRS squadrons have written for critical defects in E-2/C-2s, while FRCSW states to us it has "accepted" only one critical deficiency on an E-2/C-2, in March 2010 (NAVAUDSVC indicates FRCSW accepted another in April 2010). This indicates a disagreement between the squadrons and FRCSW over the AIDRS that must be explored before drawing any conclusions about the work in question.

Discussion and Analysis

368. Analysis of the paperwork is a critical first step in an inspection, audit, or other form of programmatic review and we certainly do not want to minimize its importance. But it is only the first step. Certainly, if the paperwork is missing, incomplete, or not done correctly, that raises concerns about the quality of the work it is intended to document. But finding the paperwork is done correctly does not necessarily mean the work itself is being performed correctly. That requires additional effort, to include observation of work and/or inspections while they are being performed, or examination of completed work to determine conformance with applicable specifications after it has been inspected and approved.

369. In this case, the AMI found discrepancies in the paperwork that could suggest falsification of qualifications and training efforts. While the AMI dismissed these as examples of "gundecking" or "pencil whipping," they may be evidence of lack of attention to detail when completing required paperwork or falsified records that require further consideration.

370. We have repeatedly stated our belief that the best evidence of the success of ConCert is to be found in the results of MAFs and AIDRS, which are inspection and verification efforts performed after the work leaves the shop. We expected to find FRCSW was closely monitoring AI performance by using metrics that measured those efforts. We did not see it, and preliminary information from NAVAUDSVC about E-2/C-2 AIDRS raise concerns.

371. If the NAVAUDSVC audit of AIDRS generated by the customer squadrons demonstrates an increase in defects escaping FRCSW, we would not be surprised to learn that changes in FRCSW's response to customer feedback, rather than ConCert, are the root cause.

Conclusion

372. The allegation that ConCert increases the risk to safety of flight and consequently poses a substantial and specific danger to public safety remains undetermined (is neither substantiated nor not substantiated) at this time, pending completion of further audits and inspections. **We emphasize that nothing in our findings to date should be used to argue Navy should ground aircraft serviced by FRCSW.**

Recommended Action

373. Since the ongoing NAVAUDSVC limited scope audit focuses only on the E-2/C-2 program, NAVINSGEN will add Aviation Depot Level Maintenance to the annual Opportunities and Risk

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Assessment Analysis that it and NAVAUDSVC prepare for senior Navy leadership to consider and will recommend that NAVINGEN and/or NAVAUDSVC conduct an inspection, program audit, or similar review of the program in 2013 that will extend to, at a minimum, the Vertical Lift and F/A-18 product lines.

374. We also recommend the conduct of an independent third party audit of FRCSW that focuses on ConCert by an organization such as the Performance Review Institute, NQA-USA, or perhaps even one of the DCMA offices that monitors the work of Boeing or NGC. An audit by an outside organization would enable FRCSW to benefit from a review by personnel who review similar work that is performed in the private sector, and to obtain industry recognition of the quality of the FRCSW programs by submitting to the auditing processes used to measure the effectiveness of others who perform similar work in the aviation industry.

Warning Against Reprisal or Retaliation

375. The OSC tasking letter contains the following paragraph:

Further, in some cases, whistleblowers who have made disclosures to OSC that are referred for investigation pursuant to 5 U.S.C. § 1213 also allege retaliation for whistleblowing once the agency is on notice of their claims. I urge you to take all appropriate measures to ensure that those reporting wrongdoing are protected from such retaliation and from other prohibited personnel practices, including informing those charged with investigating the whistle blower's allegations that retaliation is unlawful and will not be tolerated.

376. We have made certain the complainants, and other witnesses in this investigation, are aware of their right to be free from reprisal or other forms of retaliation.

377. We did learn that some personnel were advised to cooperate with the investigators and "give them whatever they asked for" in such a way as to imply they should answer only the precise question asked, provide only documents precisely identified, and avoid volunteering information they thought investigators might need or desire but had not expressly requested. We consider such advice to violate the duty of candor required by paragraph 12-501 of the DoD Joint Ethics Regulation. Fortunately, we learned that the AIs and QASs we interviewed are too independent to follow that advice, although we cannot say the same for all witnesses or others who were asked to provide documents to support our inquiries. Except for the time required to conduct this inquiry, we do not believe this adversely impacted our inquiry, but we cannot rule out the possibility that FRCSW

personnel did not provide information that could have lent more support for some of the FRCSW decisions and actions.

Observations

378. We wish to express our appreciation to the subject matter experts, some not mentioned in this report, who provided invaluable assistance during this inquiry. AMMT-2, AMMT-3, SME-2, COMFRC QD-1, SME-2, and SME-3 provided patient and detailed explanations of aviation maintenance terms and procedures, in addition to reviewing and commenting on the work of the NAVAIR and NAVINGEN IG investigators and reviewers and correcting our errors. COMFRC QD-1 proved to be the ConCert program archivist; without the detailed records she provided (and the interpretation of their meaning), our ability to describe the growth of ConCert over the years, and to demonstrate that COMFRC and NAVAIR did provide program development oversight, would have been difficult, if not impossible to present to the reader.

379. Many FRCSW witnesses provided valuable information, but several people in the Quality Department patiently bore the brunt of our requests for information, records, and explanations throughout this overly long inquiry. We must thank QD-5, QD-6, and QD-11, who AI-6 incessant emails and phone calls from the outset of the investigation to the day the report was forwarded to the Secretary of the Navy for review. FRCSW-2, FRCSW Command Evaluator, handled all logistics for interviews and provided other invaluable assistance.

380. Initial reaction to the OSC complaint within the aviation community suggested to the investigators a belief that the concerns were driven by union officials and members who fear the loss of their jobs. FRCSW and COMFRC have been addressing these issues for a number of years and we sensed that, during the initial round of interviews, that they did not think the allegations presented to OSC had any merit.

381. Yet that first round of interviews tended to substantiate the specific allegations of standards violations discussed in allegations three through five, and our inability to immediately develop dispositive evidence for allegations one and two became a matter of concern for the investigators.

382. By April, given the lack of meaningful credible evidence being provided to the investigators, we began to question whether we had made clear the scope of our inquiry and our belief that the complaint fairly called into question the possibility that ConCert has increased the risk to safety of flight. We reviewed the OSC tasking letter and our 23 January 2012 memo to NAVAIR and CNAF, which also went to COMFRC and

FRCSW, and concluded everyone had fair notice of our intentions and expectations.

383. We eventually learned that mid-level management personnel at FRCSW from whom we obtained most of our information had been advised to respond to our questions, and provide what we asked for, but to go no further to assist the investigators in their efforts. There is no doubt this hampered and delayed our efforts, especially during the pursuit of evidence pertaining to allegation one. But we also must point out the Complainants provided incomplete and consequently misleading evidence as well. Their failure to mention the apprenticeship program, from which one of them graduated, is an excellent example, but the evidence also establishes they did not fairly present the FRCSW ConCert implementation efforts to OSC, either.

384. FRCSW acknowledges the original ConCert implementation in the E-2/C-2 platform had a number of shortcomings. We have observed substantial efforts to improve the quality of the program over time, both before and after the start of this investigation. Contrary to the assertions of one of the Complainants, we think sincere efforts to improve the program, even if taken after the start of the investigation, are a positive step; the Vertical Lift and F/A-18 ConCert programs are benefiting from those lessons and we compliment Quality Department leadership who have made these improvements. Because it is a more sophisticated aircraft, application of the ConCert program to the F/A-18 platform needs to be even more precise, but FRCSW needs to go back and correct the deficiencies in the E-2/C-2 program that cause it to have a substantially higher defect rate than other platforms.

385. For example, AIDR analysis of platforms over a period of six months indicates that of the three aircraft platforms currently employing ConCert, the E-2/C-2 platform has a defect free rate of only 67%, while the Vertical Lift defect free rate is 98% and the F/A-18 defect free rate is 96%. This is troubling because E-2/C-2 should be a mature process at this juncture of program longevity. The concern over falsification of resumes arose during E-2/C-2 program implementation, and most of the individual defects discussed in this report concerned work performed on E-2/C-2 aircraft.

386. Staffing and experience were observed as a consistent theme of discussion at FRCSW. Most concerned AI increases. Between the start of the pilot program in 2007 and 2010, there were only around 13 AIs at any one time. Between 2010 and 2012 the number rose to 91 in Feb 2012. Currently, there are 87 AIs onboard, with a target projection of 140 by December 2012.

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Conversely, QASs have gone from 78 to a low of 52, and are now up to only 56, yet the scope of their work has increased to include an expanded role in providing cost effective defect free maintenance, repair and overhaul, AI training and surveillance, as well as metrics and audits. As an aggregate, QA has taken a 31% reduction in staffing when compared with the total population of FRCSW personnel, which increased from 2881 in FY06 to 3176 in FY11.

387. These statistics reinforce our opinion that, contrary to the assertion of FRCSW personnel over the years, the objective underlying ConCert is not an attempt to build in "quality at the source" as that concept is used in the private sector, but is rather a mechanism to transfer the inspection function from the QAS to the artisan for reasons that primarily relate to hopes or expectations that this will create costs savings that do not appear to have materialized in actual practice.

388. During our conversations with private sector personnel we learned that Operator self-verification or self-inspection as applied in industry requires the training of most, if not all, artisans or technicians, not just a select few (less than 10% of the FRCSW artisan workforce is trained in AI inspection techniques). The purpose of that training is not simply to substitute one inspector for another, but to improve the quality of the work as it is being performed in the first place so that there will be less defects for an inspector to discover upon subsequent inspection or verification. That is the meaning of building in quality at the source in the private sector. We believe the naval aviation community should move in the direction of operator self-verification as practiced in the private sector, with appropriate second set of eyes verification where metrics establish they are warranted, but we have seen nothing that suggests FRCSW or other FRCs plan to extend AI training beyond the number of artisans sufficient to carry out current inspection requirements. A senior FRCSW Quality Department manager acknowledged that ConCert as currently implemented does not improve the quality of the individual artisan's work.⁴⁶

389. We believe FRCSW has oversold ConCert in other material respects as well. Slide presentations over the years, including that made to the Naval Inspector General at the outset of this program, assert that ConCert improves quality at the source, but

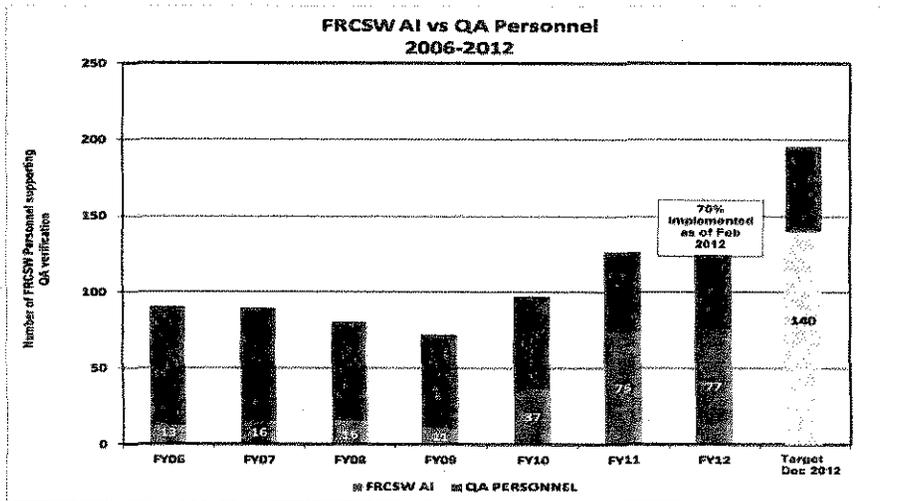
⁴⁶ We also note that not all private sector "second set of eyes" verifications are conducted by artisans or technicians within their production departments. Some organizations reserve those functions for Quality Department personnel.

FRCSW has provided no evidence of improvements that are statistically significant, and some at FRCSW concede, as the NAVAUDSVC statistician observed, that it is difficult, if not impossible, to segregate the improvements, if any, that are attributable to ConCert, given the other efforts that are made in parallel with it.

390. As for cost savings, our own observations, as well as our discussions with the NAVAUDSVC, lead us to conclude the information presented to senior aviation leadership included projections in the early years of the program that never materialized. It appears that FRCSW continues to rely on outdated statistics that inaccurately reflect the true costs incurred or present an incomplete picture of program costs.

391. In sum, we find a remarkable lack of candor in the assertions made in the attempt to "sell" ConCert to the rest of the aviation community. Suggestions that there are "management controls" in place to mitigate conflicts of interest and quality/safety risks imply that FRCSW has applied management internal control principles to ConCert when it has not. The assertion that the Quality Department, through the QAS, ensures the quality of AI verifications through a sampling inspection process fails to note that AIs know what work will be inspected because the QAS actually watches while the AI does the verification, thus ensuring that if an AI is inclined to submit to any "pressure" to accept nonconforming work, it will not take place for work a QAS will inspect. Worst of all, FRCSW points to conflict resolution training as a key mitigating factor for peer and production supervisor pressures, while failing to note that, due to considerations of cost, an AI may not receive this training until after he/she has received the AI stamp and has been performing AI verifications for some period of time.

392. There was a significant division between QAS who supported ConCert and those that did not. The concern that the program may be getting rid of QAS personnel in lieu of AIs is of concern to many as well as the Union's representing subjects. The chart below illustrates the population of QAS to AIs since the ConCert Program inception in FY06. The initial plan was to decrease QAS personnel as the ramp up on AIs increased. That trend was consistent until 2011 where it was recognized that too many QAS had in fact been let go. (FRCSW offered an early out retirement to the QAS community as a means to decrease their numbers). The AI count stood at 91 in February 2012 to 56 QAS onboard.



393. One of the concerns noted by the Complainants was FRCSW management said there would be no reduction in Quality Personnel. QASS were not replaced after VSIP, retirement, or attrition. The number of QAS became so low, that FRCSW Senior Management had to act and initiate a hiring action to get more QAS on-board as soon as possible. Four QAS were hired in late 2011/early 2012.

394. One complainant provided an email dated February 2010, from QD-2, FRCSW QA Division Director and QA ConCert Implementation Leader (retired) to the QA and Production Leads regarding QA Staffing and ConCert. QD-2 described the importance of proper staffing of QAS in the E-2/C-2 and F/A-18 Programs. QD-2 stated in his email that without the proper QA staffing during the assessment, training and conversation process the ConCert "implementation would most probably fail." QD-2 based his opinion on his experience and knowledge as the originator of the ConCert concept, the lessons learned and the Commands QA expert on ConCert.

395. QD-2 closed his email by stating:

The ConCert Program is a most viable concept in changing both the Quality organization and Product Lines, enabling total quality ownership by production to produce a defect free product and changing QA focus to verifying, ensuring and changing processes. This can't be accomplished when this structured program is manipulated to individual wants. To remain a successful program proper QA staffing and oversight cannot be disputed.

396. FRCSW must continue to monitor the ratio of QAS to AI personnel and the workload of QASS. Although QD-2's email was written in 2010, the same thought process holds true in 2012 - QASS play a vital role in the success of the ConCert Program.

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Private Sector companies warn against using operator self-verification to reduce the number of QA personnel, and FRCSW senior leadership seems to have acknowledged this issue even as it relies on outdated cost projections based on reducing the QA workforce to demonstrate cost savings.

397. Clearly there is a group of non-supportive QAS personnel that believe the ConCert Program is not producing as advertised, creates more work on them and at times introduces increased safety risk to selling of aircraft back to the fleet. Yet the general consensus of both AIs and the QAS personnel who actually work with the AIs is that ConCert is worth continuing.

398. The interviews show that the AI population is very loyal and responsible. AIs are proud of their skills and what they offer the organization. For the most part, they like the program and consider themselves the very best of personnel to be in this position due to their experience and background. As one AI with over 39 years of experience as an aircraft mechanic stated in his interview:

You know - this is a great improvement over the old system ... and it's been due for a long time because of the amount of personnel that we have and the limited amount of QAS that we were using, those guys were overwhelmed with work.

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Appendix A - Witness List

All interviews conducted in person unless otherwise noted.

1. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
2. (name omitted) (SME) Aircraft Control & Custodian, Chief, NAVAIR 5.0D
3. (name omitted), (witness) Quality Analyst, GS-11, FRCSW (original and one follow-up interview)
4. (name omitted), (witness) Composite Fabricator/AI, WG-11, FRCSW
5. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
6. (name omitted), (witness) FRCSW QA Division Director and QA ConCert Implementation Lead (retired July 2010)
7. (name omitted), (witness) Crew Leader/AI, WL-11, FRCSW
8. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
9. (name omitted), (witness) QA Division Head/ConCert Program Manager, GS-13, FRCSW (original and three follow-up interviews including email and telephone)
10. (name omitted), (witness) Aircraft Examiner, WD-6, FRCSW
11. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW (Lemoore)
12. (name omitted), (witness) Supervisor, GS-12, FRCSW
13. (name omitted), (SME) Director Policy and Quality Department, GS-15, COMFRC
14. (name omitted), (witness) Crew Leader/AI, WL-11, FRCSW
15. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW (Lemoore)
16. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
17. (name omitted), (witness) QA Director, GS-14, FRCSW
18. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW

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19. (name omitted), (witness) System Components & Calibration Division Product Manager, GS-14, FRCSW
20. (name omitted), (SME) HRSCSW Specialist, GS-12 (contacted through email)
21. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW (Pendleton)
22. (name omitted), (SME) HRSCSW Specialist, GS-11 (contacted through email)
23. (name omitted), (witness) Quality Mgmt Division Head, GS-13, FRCSW
24. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW (Lemoore)
25. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
26. (name omitted), (witness) QAS, GS-9, FRCSW (Yuma)
27. (name omitted), (witness) QAS, GS-9, FRCSW (original and one follow-up interview)
28. (name omitted), (witness) E-2/C-2 Product Mgr, GS-14, FRCSW
29. (name omitted), (complainant), QAS, GS-11, FRCSW (original and one follow-up interview)
30. (name omitted), (SME) Lead BFM(authored NPS Study), LCDR, NAVAIR PMA263
31. (name omitted), (witness) QAS, GS-9, FRCSW (Yuma) (original and one follow-up interview)
32. (name omitted), (witness) QA Airspeed Deployment Director, GS-13, FRCSW
33. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
34. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
35. (name omitted), (SME) Office of Counsel, NAVSEA
36. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW (Pendleton)

SUITABLE FOR PUBLIC RELEASE (names removed)

37. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
38. (name omitted), (witness) Senior QAS, GS-11, FRCSW
39. (name omitted), (witness) Electronic Integrated Systems Repair Inspector, WG-13, FRCSW
40. (name omitted), (witness) QAS, GS-10, FRCSW
41. (name omitted), (Complainant), QAS, GS-9, FRCSW
42. (name omitted), (witness) Force Material N42 Officer, CAPT, CNAF
43. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
44. (name omitted), (witness) Overhaul & Repair Production Supervisor, GS-10, FRCSW
45. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
46. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW (Yuma)
47. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
48. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
49. (name omitted), (witness) Artisan (Previous AI), WG-10, FRCSW
50. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
51. (name omitted), (witness) Crew Leader/AI, WL-11, FRCSW
52. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
53. (name omitted), (SME) GS-14, CNAP/CNAF (contacted through email)
54. (name omitted), (witness) QAS, GS-9, FRCSW
55. (name omitted), (SME) Director Fleet Readiness OPNAV N43, RDML, CNO (Pentagon)

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56. (name omitted), (witness) QAS, GS-9, FRCSW
57. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
(Pendleton)
58. (name omitted), (witness) Deputy Program Mgr Vertical Lift,
GS-13, FRCSW
59. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
60. (name omitted), (witness) Vice Commander COMFRC, CAPT,
COMFRC
61. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
62. (name omitted), (SME) Management Analyst Industrial QA, GS-
11, FRCSW
63. (name omitted), (SME) Artisan Inspector, WG-11, FRCSW
64. (name omitted), (witness) Corporate Operations Director,
GS-15, FRCSW
65. (name omitted), (witness) Supervisory HR Specialist, Navy
Region SW
66. (name omitted), (witness) Deputy Program Mgr F/A-18, GS-13,

FRCSW
67. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
68. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
69. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
70. (name omitted), RDML COMFRC
71. (name omitted), (subject) Crew Leader/AI, WL-11, FRCSW
(original and one follow-up interview)
72. (name omitted), (SME) NAVAIR AMMT Division Head
73. (name omitted), (witness) QA Branch Mgr, GS-12, FRCSW
74. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW

SUITABLE FOR PUBLIC RELEASE (names removed)

75. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
76. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
77. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
78. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
(Lemoore)
79. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
80. (name omitted), (SME) CDR, NAVINGEN N37
81. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
82. (name omitted), (witness) QAS Manager, GS-12, FRCSW
83. (name omitted), (SME) Aircraft Controlling Custodian
Officer, GS-15, NAVAIR
84. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
85. (name omitted), (witness) Production Director, GS-15, FRCSW
86. (name omitted), (SME) AFCM, NAVAIR AMMT
87. (name omitted), (witness) Production Officer, CDR, FRCSW
88. (name omitted), (SME) Executive Officer, CAPT, FRCSW
(contacted through email)
89. (name omitted), (witness) Commanding Officer, CAPT, FRCSW
(original and one follow-up interview)
90. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
91. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
92. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
93. (name omitted), (witness) Industrial QA Officer, LCDR,
FRCSW
94. (name omitted), (witness) QA Officer, CDR, FRCSW (original
and two follow-up interviews including email and telephone)

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95. (name omitted), (witness) Deputy Program Mgr E-2/C-2, GS-13, FRCSW
96. (name omitted), (Complainant), Retired QAS, GS-11(ret), FRCSE Jacksonville (Telephone Interview)
97. (name omitted), (witness) QAS, GS-11, FRCSW
98. (name omitted), (witness) Artisan Inspector, WG-11, FRCSW
99. (name omitted), (witness) QA Product Line Specialist, GS-11, FRCSW
100. (name omitted), (witness) Lead Artisan inspector, WL-11, FRCSW (Yuma)
101. (name omitted), (witness) Deputy COMFRC, SES Level 1, COMFRC
102. (name omitted), (subject) Artisan Inspector, WG-11, FRCSW (One interview in person, one by telephone)

Appendix B - Documents Reviewed

Omitted from Public Release Version of Report

SUITABLE FOR PUBLIC RELEASE (names removed)

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**Appendix C - Consolidated List of Recommended Actions
From Allegation One**

1. Include more detailed explanation of necessary qualifications in job announcements and the FRCSW Quality Manual, such as number of years working independently on a specific aircraft platform and trade area. Include specific training areas completed such as egress; tire and wheel maintenance; corrosion control; specific to the position being advertised.
2. Make ConCert an assessable unit in the FRCSW Internal Controls Program and periodically review all IQRs to ensure they are accurate and current as an internal control.
3. Review IQRs of FRCSW employees as part of the AI hiring process. Preferably, provide all potential applicants an opportunity to update their IQRs in advance of any vacancy announcement. Require similar verification of those who are not FRCSW employees if they are eligible to compete for a position.
4. Interview AI applicants in person as part of the selection process and ensure that a QAS actively participates in the interview before an applicant is offered an AI position.
5. The Quality Department should have a more active role in the hiring process of the AI instead of the Production Department. The Quality Department should initiate the hiring action, write the position description, review the cert, interview the candidates, and make the selection.
6. The HR Department should notify individuals selected for a position, not the Production Supervisor.
7. NAVAIR IG will conduct a separate investigation into the duplicate resume issue under NIGHTS 201203116.
8. Revise Quality Manual to reflect current NAMP including making it clear that AIs report to Quality Department when performing inspections
9. Make AI functions a "collateral duty" to facilitate oversight and add AI functions to performance appraisals, awards, etc.
10. Clarify whether AIs or QASs will continue to conduct AI training.

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From Allegation Two

11. FRCSW should continue to comply with the training requirements set forth in the NAMP and FRCSW Quality Manual.
12. AI trainees should complete Conflict Resolution Training before receiving their AI stamp. Some form of Conflict Resolution refresher training should be conducted annually. Extend the training to all personnel involved in the performance of work subject to evaluation for conformance with standards, whether they be artisans, AIs, QASs, Production or Quality Department Supervisors or Managers.
13. Use the ConCert Classroom Training Course, including the written evaluation, as an opportunity to remove from the program those trainees whose verbal and written communication skills are inadequate to allow them to function effectively as AIs.
14. Revise and expand the written test given at the end of classroom training; 14 questions is insufficient to adequately evaluate whether the AI has absorbed the information presented in this segment of AI training. Ensure the written tests are completed individually and not as a group exercise.
15. Revise the current JQR to more accurately reflect specific job skill sets required for specific work area or trade, i.e. Center Barrel line, Canopy Shop, Fabrication, sheet metal, mechanical, electrical, etc. to avoid marking sections N/A, lining out and changing titles by hand, or leaving blank items in the AI trainee's JQR because an item does not apply.
16. Discipline anyone found to have engaged in falsification of a JQR. Accuracy, integrity and candor are at the heart of any quality assurance program; gun decking or pencil whipping cannot be tolerated.
17. Provide AI refresher training periodically, or at least every four years, to compliance with NAMP section 7.2.4.3.7, which states: "Refresher training will be provided to certified individuals every 4 years and whenever the review of quality data reveals adverse trends."
18. Determine whether the QAS or the AI will conduct the classroom and OJT portions of AI training. Justify any decision to shift training to the AI, or modify the FRCSW Quality Manual to reflect only a QAS may perform these functions.

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From Allegation Three

19. Processes must be put in place to ensure that verifications are conducted accurately and completely per specifications and only on operations, tasks, or functions that Artisan Inspectors are qualified and certified to perform.

20. FRCSW Management should take appropriate action to hold AI-1 accountable for verifying mechanical work when he was only certified to verify electrical work.

From Allegation Four

21. Tailor classroom training to ensure that discussions of work aspects that do not apply to all AIs include only those AI trainees that will perform the work being discussed. If this is not possible, emphasize during training that even though the trainer may be covering all trades during the discussions or demonstrations, each AI is only authorized to verify the trades listed in the AI designation letter the CO gives to that AI.

From Allegation Five

22. That FRCSW Management take appropriate action against AI-1 for certifying completed work performed on an aircraft after it had been returned to squadron custody.

From Allegation Six

23. That FRCSW Quality Department be given authority and responsibility for AI hiring, firing, performance (including metrics for evaluating), and award decisions.

24. That FRCSW Production Department Supervisor responsibility and accountability for the quality of the work of the artisans under them be made more clear and specific, and be included as a separate element in their performance evaluations so as to reduce the risk created by moving the responsibility for Type I verifications from the Quality Department to the Production Department.

25. That FRCSW establish formal mechanisms an AI may use to obtain assistance from Quality Department personnel in the event the AI perceives Production Department personnel: are not providing sufficient time or resources necessary for the AI to conduct a verification process; are pressuring the AI to accept non-conforming work; are pressuring the AI to stamp work as

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verified when the AI has not conducted the verification, or to insert a date for the conduct of the verification other than the date it was actually performed. That FRCSW discipline Production personnel found to have interfered with the AI verification process.

26. That FRCSW conduct a formal operational risk management analysis for the ConCert Program that conforms to the principles found in OPNAV Instruction 3500.39C.

27. That FRCSW complete the annual OPNAV 3502/3 ORM Program Assessment Sheet for the ConCert Program , as required by OPNAV Instruction 3500.39C.

28. That, as part of the risk analysis effort, FRCSW create a baseline for metrics to be used to analyze how well the ConCert Program is functioning.

29. That FRCSW creates measurable standards to measure the effectiveness of the ConCert Program.

From Allegation Seven

30. Since the ongoing NAVAUDSVC audit focuses only on the E-2/C-2 program, NAVINSGEN will add Aviation Depot Level Maintenance to the annual Opportunities and Risk Assessment Analysis that it and NAVAUDSVC prepare for senior Navy leadership to consider and will recommend that NAVINSGEN and/or NAVAUDSVC conduct an inspection, audit, or similar review of the program in 2013 that will extend to, at a minimum, the F/A-18 product line.

31. We also recommend the conduct of an independent third party audit of FRCSW that focuses on ConCert by an organization such as the Performance Review Institute, NQA-USA, or perhaps even one of the DCMA offices that monitors the work of Boeing or NGC. An audit by an outside organization would enable FRCSW to benefit from a review by personnel who review similar work that is performed in the private sector, and to obtain industry recognition of the quality of the FRCSW programs by submitting to the auditing processes used to measure the effectiveness of others who perform similar work in the aviation industry.

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