DEPARTMENT OF THE NAVY
COMMANDER
UNITED STATES PACIFIC FLEET
250 MAKALAPA DRIVE
PEARL HARBOR, HAWAII 96860-3131

IN REPLY REFER TO:

5830
Ser N00/ 0736
21 Jul 10

Exe (b)(6)

FINAL ENDORSEMENT on CAPT [redacted], USN, ltr of 13 Apr 10

From: Commander, U.S. Pacific Fleet
To: File

Subj: SUPPLEMENTAL COMMAND INVESTIGATION INTO THE PERFORMANCE, TRAINING, AND DOCTRINE OF FLEET AREA CONTROL AND SURVEILLANCE FACILITY, SAN DIEGO, AS IT RELATES TO THE COLLISION OF A MARINE AH-1W AND COAST GUARD C-130 ON 1909T, 29 OCTOBER 2009

1. After careful review of subject investigation, the findings of fact, opinions and recommendations of the investigating officer, as endorsed by Commander, Naval Air Forces, U.S. Pacific Fleet (CNAP), are approved as modified below.

2. This mishap and the tragic loss of life that resulted was entirely preventable. Although mishap aircrews were operating under Visual Flight Rules with the responsibility to maintain aircraft separation, more rigorous airspace management advisory procedures along with better use of communication protocols by controllers and aircrews may have prevented this accident. Leaders in the aviation community at all levels must continue to stress vigilance and the grave threats posed by complacency when operating in highly fluid environments.

3. This investigation recommends that commands possessing air traffic control responsibilities review their policies and procedures to ensure compliance and standardization with governing directives. I concur. To that end, a copy of this report is hereby forwarded to OPNAV requesting appropriate action on recommendations 7 through 9.

4. Nine service members lost their lives on this tragic day. The United States Navy shares the profound sadness of our sister services. The expeditious implementation of all remedial measures is important to demonstrate our commitment to preventing these types of incidents in the future.

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In order to ensure timely completion, CNAP shall ensure monthly updates are provided to the point of contact until all remedial actions are completed.

Exe (b)(6)

5. My point of contact is CDR [redacted] who is available at (808)474-6793 or [redacted]d@navy.mil.

Exe (b)(6)

P. M. WALSH

Copy to:
OPNAV (N09BL)
USCG 11th District
CG THIRD MAW (SJA)
USFF (N01L)
CNAP (N01J)
CNAL (N02L)
COMTHIRDFLT (N00J)
CAPT [redacted]

Exe (b)(6)

DEPARTMENT OF THE NAVY
COMMANDER NAVAL AIR FORCE, PACIFIC
BOX 357051
SAN DIEGO, CALIFORNIA 92135-7051

5830
Ser N01J/1286
16 Aug 10

Exe (b)(6)

AMENDMENT OF FIRST ENDORSEMENT on CAPT [redacted], USN, ltr of 13 Apr 10

From: Commander, Naval Air Force, Pacific
To: Commander, U.S. Pacific Fleet

Subj: SUPPLEMENTAL COMMAND INVESTIGATION INTO THE PERFORMANCE, TRAINING, AND DOCTRINE OF FLEET AREA CONTROL AND SURVEILLANCE FACILITY, SAN DIEGO, AS IT RELATES TO THE COLLISION OF A MARINE AH-1W AND COAST GUARD C-130 ON 1909T, 29 OCTOBER 2009

Ref: (a) COMNAVAIRPAC ltr 5830 Ser N01J/678 of 22 Apr 10

Encl: (101) ACC [redacted] Statement of 13 Aug 10 Exe (b)(6)

1. To correct the record, reference (a), the original COMNAVAIRPAC endorsement of the subject investigation report, is hereby modified to append enclosure (101). Additionally, Finding of Fact 98 is modified to read:

> 98. The FWS and RC were not immediately sent to a Flight Surgeon for examination following the mishap. After the Radar Branch Chief reviewed the FACSFAC SD air traffic controller video and audio records of the mishap, she concluded that the controllers did not cause the aircraft to collide. She observed that the Radar Operation Control Center's emergency binder mishap checklist contained a requirement to send the watchstanders to a Flight Surgeon for examination if it appears that they have caused a collision, but she did not realize that evening that this requirement should also be applied if the watchstanders were a contributing factor to the mishap. She collected the FWS and RC statements, and sent them home at approximately 2230 after telling them to return to work at 0600 the next day. They reported to the Branch Medical Clinic at NAS North Island the following day and were examined by a Flight Surgeon. [Encls (92) and (101)]

2. The opinions and recommendations generated to address this finding of fact, Opinion 20 and Recommendation 15, are corrective actions directed solely to FACSFAC SD and are not in need of modification.

[redacted] Exe (b)(6)
Chief of Staff

Copy to:
CAPT [redacted] Exe (b)(6)

DEPARTMENT OF THE NAVY
COMMANDER NAVAL AIR FORCE, PACIFIC
BOX 357051
SAN DIEGO, CALIFORNIA 92135-7051

5830
Ser N01J/678
22 Apr 10

Exe (b)(6)

FIRST ENDORSEMENT on CAPT [redacted], USN, ltr of 13 Apr 10

From: Commander, Naval Air Forces, U.S. Pacific Fleet
To: Commander, U.S. Pacific Fleet

Subj: SUPPLEMENTAL COMMAND INVESTIGATION INTO THE PERFORMANCE, TRAINING, AND DOCTRINE OF FLEET AREA CONTROL AND SURVEILLANCE FACILITY, SAN DIEGO, AS IT RELATES TO THE COLLISION OF A MARINE AH-1W AND COAST GUARD C-130 ON 1909T, 29 OCTOBER 2009

Encl: (100) CO, FACSFAC SD ltr dtd 20 Apr 10

1. Forwarded, I concur with the findings of fact, opinions, and recommendations of the Investigating Officer. The following is a brief summary of relevant facts:

At approximately 1909, 29 October 2009, a USMC AH-1 and a USCG C-130 had a mid-air collision in Warning Area 291 (W-291), east of San Clemente Island, resulting in the loss of both aircraft and all nine aircrew.

U.S. Marine Corps (USMC) and U.S. Coast Guard (USCG) investigations into the mishap note that while no single factor or individual action caused the collision, Fleet Area Control and Surveillance Facility San Diego (FACSFAC SD) contributed to the incident. These reports shared the opinion that FACSFAC SD controllers were operating under conflicting and inadequate written guidance which was misinterpreted by controllers, that they failed to prioritize an actual SAR mission above scheduled training events, that they did not correctly prioritize their aircraft handling requirements, and that they failed to provide traffic advisories and safety alerts.

This command initiated a Supplemental Command Investigation to provide an internal, focused look from an air traffic controller perspective of FACSFAC SD doctrine, training and performance as it relates to the mishap.

Subj: SUPPLEMENTAL COMMAND INVESTIGATION INTO THE PERFORMANCE, TRAINING, AND DOCTRINE OF FLEET AREA CONTROL AND SURVEILLANCE FACILITY, SAN DIEGO, AS IT RELATES TO THE COLLISION OF A MARINE AH-1W AND COAST GUARD C-130 ON 1909T, 29 OCTOBER 2009

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2. Captain [redacted] findings, opinions, and recommendations regarding FACSFAC SD's involvement in this mishap are consistent with those of the USMC and USCG investigation reports. This incident was caused by a series actions taken by both aircrews and air traffic controllers; all of which were compounded by a lack of communication between the parties.

3. FACSFAC SD has acted aggressively to address those recommendations under its control, and will implement remaining matters within the deadlines provided by enclosure (100). Specific accomplishments include:

a. To institute recommendations 1, 2, 3, and 6, FACSFAC SD is revising its air traffic controller operating guidance to address position roles and responsibilities, coordination with external agencies, airspace prioritization, and search and rescue responsibilities.

b. To strengthen communication between controllers throughout the area, per recommendation 4, FACSFAC SD intends to clarify command and control relationships with San Clemente Island Tower personnel through a proposed Letter of Agreement (LOA).

c. To effect recommendation 5, FACSFAC SD is establishing LOAs with USCG District 11 to better define Search and Rescue (SAR) support services for Southern and Northern California Operation Areas. Moreover, USCG and FACSFAC personnel have conducted reciprocal site visits. Importantly, FACSFAC SD has provided USCG commands with a clearly established single point of contact for W-291 flight controller operations.

d. Per recommendation 10, FACSFAC SD has completed a review of its training practices to address deficiencies in supervisory and/or controller functions.

e. In accordance with recommendation 11, FACSFAC SD is examining the potential for modification of a Collision Avoidance Alarm that would provide the controller an added safety system while still being able to turn the alarm off for aircraft engaged in intercept activities.

f. Per recommendation 12, FACSFAC SD is planning to promote greater awareness of its services through face to face presentations to user commands after revision of its operating instruction is complete.

g. To implement recommendations 14 and 15, FACSFAC SD is developing a Human Factors Council Instruction to better determine watch stander physical and mental fitness, and a Pre-Mishap Plan Instruction that will address the taking of blood and urine samples should a future mishap occur.

4. Because action on recommendations 7 through 9 would take place under the cognizance of OPNAV N885, I recommend that a copy of this report be provided to that office for review, implementation, and feedback on action taken.

5. Recommendation 13 will be implemented throughout the Naval Air Force following official promulgation of the mishap causal factors and corrective actions in the final endorsement.

6. Commander, Naval Air Forces, U.S. Pacific Fleet will monitor, and validate FACSFAC SD's implementation of corrective actions in response to recommendations of the Investigating Officer with an overall completion date of 1 July 2010.

7. Punitive action is not warranted; however, appropriate corrective measures were taken concerning the air traffic controllers on duty. Per enclosures (93) through (98), the Approach Controller (AP) and Facility Watch Supervisor (FWS) were suspended from all Air Traffic Control duties on 30 October 2009. Moreover, only the FWS will be allowed to complete a training plan that requires over-the-shoulder supervision to obtain reinstatement of his controller qualifications. The AP remains suspended awaiting revocation proceedings regarding an unrelated incident.

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Exe (b)(6)

8. My point of contact is LCDR [redacted], JAGC, USN. He may be reached at, (619) 545-5045, or by E-mail at, [redacted]@navy.mil.

Exe (b)(6)

T. J. KILCLINE

Copy to:
COMNAVAIRLANT
CAPT [redacted] Exe (b)(6)

DEPARTMENT OF THE NAVY
FLEET AREA CONTROL AND SURVEILLANCE FACILITY
NAVAL AIR STATION, NORTH ISLAND
P.O. BOX 357062
SAN DIEGO, CALIFORNIA 92135-7062

3700
20 Apr 10

MEMORANDUM

From: Commanding Officer, Fleet Area Control and Surveillance Facility San Diego
To: Commander, Naval Air Force, U.S. Pacific Fleet

Subj: FACSFAC SAN DIEGO CORRECTIVE MEASURES POST USMC-USCG AIRCRAFT MISHAP

Ref: (a) Supplemental command investigation into the Performance, training, and doctrine of Fleet Area Control and Surveillance Facility San Diego, as it relates to the collision of a Marine AH-1W and Coast Guard C-130 on 1909T, 29 October 2009, dtd 14 April 2010, submitted by CAPT [redacted] USN, Investigating Officer, to CNAP
(b) Command Investigation into the Circumstances Surrounding the Class "A" Mishap Aircraft Collision of an AH-1W with a USCG C-130 that Occurred on 29 October 2009, dtd 23 Feb 2010, submitted by LtCol [redacted], USMC, Investigating Officer, to CG, 3rd MAW
(c) Report of Investigation: CG 1705 Mid-Air Collision of 29 Oct 2009, dtd 17 Mar 2010, submitted by CAPT [redacted], USCG, Senior Member, Board of Investigation, to CGD ELEVEN

Exe (b) (6)

1. This memorandum details Fleet Area Control and Surveillance Facility San Diego's actions that address the recommendations of the referenced command investigations.

2. Fleet Area Control and Surveillance Facility San Diego (FACSFAC SD) is dedicated to professionally executing its mission to provide off-shore air traffic control and surveillance as well as active management of assigned airspace, operating areas (OPAREA), ranges, and training resources in order to support homeland defense and enhance combat readiness of U.S. Pacific Fleet units in all warfare areas. Trained and qualified Air Traffic Controllers and Operations Specialists vigilantly man the Operations Control Center watch floor 24/7/365 to perform this mission. FACSFAC SD is keenly aware

ENCLOSURE(00)

that Carrier Strike Groups, Amphibious Readiness Groups, numerous U.S. Navy and U.S. Marine Corps units, as well as other Joint Forces use our assigned OPAREAs to prepare for combat. In short, the Sailors and civilians of FACSFAC SD are dedicated warfighters, serving warfighters.

3. The mishap that occurred on 29 October 2009 revealed vulnerabilities in FACSFAC SD performance, training, and doctrine - vulnerabilities that contributed to the midair collision. FACSFAC SD identified many of these in our own internal review of the mishap. Other and related areas have been noted in the Navy, Marine Corps, and Coast Guard command investigations (refs (a) thru (c)) that subsequently followed.

4. FACSFAC SD is equally dedicated to correcting these vulnerabilities in our performance, training, and doctrine in order to improve the execution of our mission and to help ensure that a mishap like this never occurs again in our assigned airspace. Along the way we will share these lessons learned with other facilities to help improve aviation safety in general.

U.S. NAVY INVESTIGATION RECOMMENDATIONS

5. Navy Recommendation #1: FACSFAC SD should conduct a critical and comprehensive review of its command instructions, especially the FACSFAC 3710.1F and ATCINST 3710.1A. The subsequent update should address the following salient topics: position roles and responsibilities, Facility Watch Supervisor (FWS) coordination with external agencies, airspace prioritization, and search and rescue responsibilities for cases where the USCG is SAR Mission Coordinator (SMC), where FACSFAC SD is the SMC and for self-contained events where ships use organic air assets to conduct the mission.

a. Concur.

b. Actions: FACSFAC SD is currently revising FACSFACSDINST 3120.1F Manual of EASTPAC and MIDPAC Fleet Operating Areas. Changes include removal of conflicting/confusing info, refocus on OPAREA user info through removal of irrelevant information, and addition of OPAREA kneeboard cards. FACSFACSDINST 3710.1

(ATCINST 3710.1A) Facility Manual (FACMAN) is also in revision and will incorporate a position chapter to include duties and responsibilities for each position. In addition, FACSFAC SD will submit wholesale change recommendations for Chapters 7 (Radar Operations) and 10 (Fleet Area Control and Surveillance Facility) with regard to position duties and responsibilities as they currently conflict with FAA JO 7110.65. FACSFAC SD is also currently developing a comprehensive SAR instruction in coordination with C3F and USCG District 11.

c. Status: FACSFACSDINST 3120.1F re-write - 80% complete, estimated completion date 15 May 2010. FACSFACSDINST 3710.1 re-write - 40% complete, estimated completion date 1 July 2010.

6. Navy Recommendation #2: FACSFAC SD should revisit ATCINST 3710.1A to ensure that policy guidance for combining positions is effective in achieving the mission of providing safe, effective and efficient air traffic control services; and sufficient rationale exists for every occurrence of position combination.

a. Concur.

b. Action: Facility Directive 10-01 modified FACSFACSDINST 3710.1 (ATCINST 3710.1A) and provides policy and guidance on combining positions. Additional training has been incorporated into the Local Qualification Standards and lesson plans specifying requirements to be met for combining positions.

c. Status: Complete.

7. Navy Recommendation #3: FACSFAC SD should standardize and implement improved aircraft check-in procedures with Beaver Control to ensure that aircraft provide all the requisite information to controllers to include intentions and request for services and controllers provide a more comprehensive assessment of the airspace picture. Consideration should be given to communicating those unique mission situations such as formation flight composition (standard vs. non-standard), use of night vision devices or any other points which would improve controller awareness.

a. Concur.

b. Action: Revised check-in procedures will be incorporated into the revised FACSFACSDINST 3120.1 including aircrew kneeboard cards. Previous controller techniques best practices for check-in and airspace briefs have been incorporated into local standard operating procedures.

c. Status: FACSFACSDINST 3120.1F revision - 80% complete, estimated completion date 15 May 2010.

8. Navy Recommendation #4: FACSFAC SD should clearly define command, control, and coordination relationships with subordinate commands and controlling agencies that provide air traffic control service in adjacent or embedded airspace.

a. Concur.

b. Action: FACSFAC SD Airspace Officer has submitted revised Letters of Agreement with San Clemente Island (KNUC) Tower clarifying command and control relationships. In addition, supplemental training for all Facility Watch Supervisors was conducted on priorities and authorities.

c. Status: Training complete. LOA with KNUC pending signature.

9. Navy Recommendation #5: FACSFAC SD and CGD11 should improve and standardize coordination procedures for active SAR missions in FACSFAC controlled special use airspace. As such, recommend frequent liaison and familiarization between CGD11 and airspace control agencies. Additionally, a face-to-face meeting between a prospective FWS and the CGD11 command center staff should be considered as a local qualification standard requirement. Reciprocal arrangements should be made for prospective CGD11 watch standers holding equivalent positions.

a. Concur.

b. Action: FACSFAC SD hosted USCG D11, USCG Sector SD, and USCG Air Station Sacramento on 14 January 2010. As a result of this meeting USCG is now aware of the single stop POC for W-291 which has drastically increased coordination and support of CG activity off of California. FACSFAC SD is currently working

with USCG D11 to establish LOAs for SAR to better define support and services in SOCAL and NOCAL. We hope to expand this LOA to include OPAREAs in the Northwest as well. FACSFAC members have also participated in orientation flights on USCG C-130s. Visits to D11, RCC Alameda, Sector SD, and Air Station Sacramento are in works.

c. Status: Ongoing/Continuous.

10. Navy Recommendation #6: FACSFAC SD should rewrite the FACSFAC SD 3710.1F section 2.14.5 regarding separation. It is also recommended that a corresponding section of the ATCINST 3710.1A also be added to dispel any misunderstanding of correct ATC priorities and procedures. This section of the range users manual should provide clear expectations of service for users while the facilities manual should provide clear guidance for the controllers. Both of these documents should be consistent to minimize any confusion.

a. Concur.

b. Action: FACSFAC SD is currently revising FACSFACSDINST 3120.1F to include removal of conflicting/confusing info, refocus on OPAREA user info through removal of irrelevant information, and addition of OPAREA kneeboard cards. FACSFACSDINST 3710.1 (ATCINST 3710.1A) Facility Manual (FACMAN) is also in revision to ensure consistency and synchronization of aircrew and controllers.

c. Status: FACSFACSDINST 3120.1F - 80% complete, estimated completion date 15 May 2010, estimated completion date 15 May 2010.

11. Navy Recommendation #7: OPNAV N885, TYCOMs and subordinate commands that possess air traffic control responsibilities review all policies and procedures to ensure compliance with governing FAA directives, guidance, and policy. Ensure this guidance is clearly articulated in publications and instructions designed for both facility/command operations and heightened airspace user compliance and awareness.

a. Concur.

b. Action: FACSFAC SD will submit wholesale change recommendations for Chapters 7 (Radar Operations) and 10 (Fleet Area Control and Surveillance Facility) of NAVAIR 00-80T-114 with regard to position duties and responsibilities as they currently confuse/conflict with FAA JO 7110.65. In addition, FACSFAC SD has engaged COMTHIRDFLT to address conflicting tasking in C3F OPORD 201, Appendix 18 to Annex C, which states that support to civil SAR is conducted on a not to interfere basis with the unit's primary mission.

c. Status: Ongoing.

12. Navy Recommendation #8: OPNAV N885, TYCOMs and subordinate commands that possess air traffic control responsibilities review all directives to ensure standardization in all applicable common policy and procedural areas. FACSFAC SD, FACSFAC VACAPES and FACSFAC JAX should all have standardization in core mission areas affecting facilities management and service provision procedures not specific to their unique operating areas and environments.

a. Concur with modification. The inherent differences in equipment, capabilities, manning, area of responsibility, and activity hinder any value added through a standardized common policy and procedures, even in core mission areas.

b. Actions: FACSFAC SD hosted the first annual FACSFAC Working Group in February 2009 followed by the FACSFAC VACAPES hosted Working Group in February 2010, in which mishap lessons learned were discussed. These working groups provide a superb forum to address community issues and exchange best practices. Development of a core set of missions, functions, and tasks by CNAF across all FACSFACs along with standardization of manpower billet structure is a required first step in establishing uniform operational capabilities.

c. Status: Pending.

13. Navy Recommendation #9: All FACSFACs should discuss the policy for transponder assignment(s) for large or loose formations in special use airspace, especially given the limitations associated with primary radar returns. Screen clutter and impacts on display ranges have been cited by

controllers as issues and should be considered during these discussions. Consideration should be given to making this an option that can either be requested by the flight leader or recommended by the air traffic controller. Current or amended policy guidance should be included in the applicable range user manuals (FACSFAC SD 3710.1 series) to ensure that military and government users are aware of the ATC facility capabilities and limitations to provide advisory services for large formation flights or those that involve large separation distances between aircraft.

a. Non-concur. Assessing formation design and requirements are not within FACSFAC's or an Air Traffic Controller's purview.

b. Recommend:

(1) OPNAVINST 3710.7U change recommendation (5.1.12 Formation Flying) to include definitions of "standard" and "non-standard" formations as defined by the FAA.

(2) OPNAVINST 3710.7U change recommendation (5.1.12 Formation Flying) to add sections on Flight Lead responsibilities. Also, include transponder assignment(s) for large or loose formations in special use airspace which may be requested by the flight.

14. Navy Recommendation #10: FACSFAC SD must apply greater rigor at all levels of training, especially qualification and designation standards, with emphasis in the following areas: supervisory functions of the FWS and RS, external coordination responsibilities of the FWS, understanding and due regard for the prioritization and special handling of operational missions, controller prioritization for airspace management, and policy interpretation regarding physical and mental suitability to perform the mission. FACSFAC SD should conduct a thorough review of all formal and informal training practices to address any actual or perceived deficiencies in supervisory or controller functions.

a. Concur.

b. Action: As described in recommendation.

c. Status: Review complete.

15. Navy Recommendation #11: Results of this mishap should be evaluated to determine if any urgent equipment status upgrades should be made to FACSFAC operating and communications systems to improve effectiveness in mission accomplishment.

a. Concur.

b. Action. Evaluation complete. FACSFAC is researching and drafting an OCIR to modify the Collision Avoidance Alarm in FACTS to disable the alarm based on Mode 3 Squawk. The ability to disable specific squawks would provide the controller the added safety system while being able to turn the alarm off for aircraft engaged in intercept activities. Planned Watch Floor expansion project will enhance facility situational awareness and provide a common operating picture to the watch team.

c. Status: Ongoing/TBD.

16. Navy Recommendation #12: FACSFAC SD should promote and provide greater awareness of services, capabilities and limitations to range user commands through FACSFAC SD hosted visits, user site visits, and improved command published materials (range users manual, kneeboard cards, etc.)

a. Concur.

b. Action: FACSFAC SD had budgeted for road shows and will coordinate visits at major user concentration areas following completion of the FACSFACSDINST 3120.1 rewrite.

c. Status: Pending.

17. Navy Recommendation #13: All investigative reports from this mishap should be briefed to all FACSFAC user commands, all military air traffic control facilities/commands, and all air traffic control training commands.

a. Concur.

b. Action: FACSFAC SD has already briefed the findings of our internal review to FACSFAC JAX and FACSFAC VACAPES and intends to brief other major user commands following formal

release of the Mishap Analysis Report. FACSFAC SD Director of Operations is scheduled to brief HSCWP COs on 20APR10 on JAGMAN reports.

c. Status: Ongoing/Pending.

18. Navy Recommendation #14: FACSFAC SD should consider establishing a human factors council and human factors board process to better determine the physical and mental fitness of all watch standers to effectively perform the mission. A successful program should serve as a model for other ATC facilities/commands.

a. Concur.

b. Action: FACSFAC SD is developing a Human Factors Council instruction.

c. Status: HFC Program instruction - 33% complete, estimated completion date 1 June 2010.

19. Navy Recommendation #15: FACSFAC SD should create a pre-mishap plan to include an execution checklist per NAVAIR 00-80T-114 and the OPNAV 3750.6 series. Overarching policy guidance should be reviewed to ensure a consistent core standard across all air traffic control facilities/commands as applicable.

a. Concur.

b. Action: FACSFAC SD will also submit change recommendations to NAVAIR 00-80T-114 and the OPNAV 3750.6 to clarify requirements and guidance for ATC facilities, to include the requirement for FACSFACs to have a dedicated Flight Surgeon or Corpsman to support pre-mishap plan actions and Human Factors Council program.

c. Status: FACSFAC SD Pre-Mishap Plan Instruction - 25, estimated completion date 1 July 2010%. Change recommendations - Pending.

U.S. COAST GUARD INVESTIGATION RECOMMENDATIONS

20. Coast Guard Recommendation #30.a.: FACSFAC SD Controllers should pursue positive radar contact with aircraft upon check in, prior to addressing other issues beyond immediate safety of flight issues.

a. Concur.

b. Action: See #7. FACSFAC SD controllers track all aircraft that enter W-291 - military, government, and civilian. Additionally, controllers establish positive radar contact (i.e. provide flight following services) for those aircraft that request it and depending upon controller workload in accordance with FAAO 7110.65S. FACSFAC SD controllers focus on establishing positive radar contact for all military/government aircraft that enter W-291 for training/operations as well as IFR traffic (i.e. assign squawk, provide working area, ops normal calls, etc.).

c. Status: Complete.

21. Coast Guard Recommendation #30.b.: FACSFAC SD watch-standers should enforce airspace prioritization (SAR missions take priority over training missions).

a. Concur.

b. Action: See #5 - #10. FACSFAC SD controllers have been briefed on airspace prioritization and on FACSFAC SD authority to enforcing such airspace prioritization in support of aircraft emergencies, MEDEVAC, and SAR. This has been integrated into our training program and we have re-emphasized that SAR missions take priority over training missions.

c. Status: Complete.

22. Coast Guard Recommendation #30.c.: FACSFAC SD controllers should provide a more thorough in-brief (to include active/hot areas and other aircraft in area) to all aircraft upon check in.

a. Concur.

b. Actions: See #7. FACSFAC SD standard procedure is to in-brief active/hot areas and altimeter upon check-in. To this

we have added the procedure to provide traffic advisories (traffic working in the local area) to all aircraft at check-in and throughout the flight as required for aircraft separation (previously a technique; now policy). Services beyond that depend on what is requested by the aircraft and controller workload (IAW NATOPS).

c. Status: Change to the Users Manual (FACSFACSDINST 3120.1F) in work. 60% complete, estimated completion date 15 May 2010.

23. Coast Guard Recommendation #30.d.: FACSFAC SD controllers should be aware of the size and configuration of formation flights, and consider airspace footprint and associated flight safety margins.

a. Non-concur.

b. Recommendations. See #13. While we agree knowing the size of the formation is important (which is known based on the flight progress strip), we do not believe knowing the configuration of the formation is a practical recommendation. Formation configuration can vary depending on Visual Meteorological Conditions, tactical/war vice peacetime training, and can vary several times throughout the flight. Moreover, formation flights - standard and non-standard - are controlled as a single aircraft as per FAAO 7110.65S.

FAAO 7110.65S provides an additional one mile lateral separation for standard formation flights as it pertains to IFR traffic. For non-standard formation flights (not complying with these limits) lead and trail aircraft or all aircraft in formation will squawk in order to provide the controller with a depiction of the size of the formation.

24. Coast Guard Recommendation #30.e.: FACSFAC SD should review Facility Watch Supervisor (FWS) watch-manning authority in relation to minimum manning levels required by SOP. Additionally, review minimum staffing levels to ensure mission demands are met. Finally, ATC Facility Manual 3710.1A should be reviewed and updated to reflect recent changes in controller positions.

a. Concur.

b. Action: See #6. FACSFAC SD and watch team manning were adequate to support the 29 Oct 09 1400-2200 watch rotation. Even though FACSFAC SD had to compensate for the unplanned loss of the ATC Facility Officer and for its fair-share of providing Individual Augmentation personnel to GWOT missions, on the day of the mishap, we were staffed and manned accordingly in compliance with our FACSFAC SD Facility Manual. Even so, we identified watch floor composition as an area of concern in our internal review. Thus, we no longer combine the Facility Watch Supervisor position with the Radar Supervisor position, except in very limited situations (i.e. taking a head break, or for the Radar Supervisor to conduct training). The current manning requirements are sufficient to carry out the mission.

c. Status: Complete. FACSFACSDINST 3710.1A Facility Directive 10-01 clearly details FWS and RS position combining procedures.

25. Coast Guard Recommendation #30.f.: FACSFAC SD should review procedures and develop one clearinghouse ("gatekeeper") for all air activity occurring in their OPAREA to avoid outside agencies being handed off to multiple other entities within FACSFAC SD. By current SOP, this should be the Facility Watch Supervisor (FWS).

a. Concur.

b. Action: See #5, #8, and #9. The FWS is the clearing house for air activity in our OPAREA. We are updating our EASTPAC OPAREA guidance (FACSFACSDINST 3120) and our San Clemente Island Range Complex (SCIRC) Range Users Manual (RUM) to ensure all range and Warning Area users are advised of this.

c. Status: FACSFACSDINST 3120.1F re-write - 80% complete, estimated completion date 15 May 2010. FACSFACSDINST 3710.1 re-write - 40% complete, estimated completion date 1 July 2010. San Clemente Island Range Complex (SCIRC) Range Users Manual (RUM) re-write - 90% complete, estimated completion date 15 May 2010.

26. Coast Guard Recommendation #30.g.: FACSFAC SD should reiterate to controllers that traffic advisories are always

appropriate, regardless if radar contact is established or not, since aircraft separation and de-confliction responsibilities are paramount.

a. Concur.

b. Action: See #5, #6, and #10. We have reiterated to controllers that their number one priority is the separation of aircraft and issuance of safety alerts, and we will continue to train on this topic.

c. Status: Training complete. FACSFACSDINST 3120.1F re-write - 80% complete, estimated completion date 15 May 2010. FACSFACSDINST 3710.1 re-write - 40% complete, estimated completion date 1 July 2010.

27. Coast Guard Recommendation #31: Coast Guard Commandant liaise with CNAF and recommend FACSFAC SD review its process for immediate fluid sampling for members involved in a mishap to ensure timely collection of specimens immediately following a mishap.

a. Concur.

b. Action: See #18 and #19. We are in the process of generating a Pre-Mishap Plan that will address this issue.

c. Status: FACSFAC SD Pre-Mishap Plan Instruction - 25%, estimated completion date 1 July 2010.

28. Coast Guard Recommendation #32: Coast Guard Commandant liaise with CNAF and recommend FACSFAC SD consider incorporating more descriptive wording regarding SAR priority and Facility Watch Supervisor responsibilities in their SOP.

a. Concur.

b. Action: See #5, #8, #9, and #11. In addition to updating FACSFACINST 3120.1F and FACSFAC ATCINST 3710.1A we are creating a SAR Instruction, which will incorporate more descriptive wording regarding SAR priority handling. We have also created an expanded real-time SAR status board to include ongoing civilian SAR and available air and surface SAR assets. Additionally, we have trained watch teams on proactive SAR

coordination with units checking in and have designated the surface operations division officer as the SAR Officer and have scheduled him to attend the National SAR school.

c. Status: SAR Instruction - 25% complete, estimated completion date 1 July 2010. FACSFACSDINST 3120.1F re-write - 80% complete, estimated completion date 15 May 2010. FACSFACSDINST 3710.1 re-write - 40% complete, estimated completion date 1 July 2010.

U.S. MARINE CORPS INVESTIGATION RECOMMENDATIONS

29. Marine Corps Recommendation #8: That 3d MAW recommends to CNAF to review all FACSFAC San Diego instructions for compliance and consistency with all applicable directives and orders pertaining to air traffic controller duty priorities.

a. Concur.

b. Action: See #5, #6, #7, and #10.

c. Status: FACSFACSDINST 3120.1F re-write - 80% complete, estimated completion date 15 May 2010. FACSFACSDINST 3710.1 re-write - 40% complete, estimated completion date 1 July 2010.

30. Marine Corps Recommendation #9: That 3d MAW recommends to CNAF to review all FACSFAC San Diego instructions for adequate guidance and procedures pertaining to SAR missions within SOCAL OPAREAS.

a. Concur.

b. Action: See #5, #8, #9, #11, and #28.

c. Status: SAR Instruction - 25% complete, estimated completion date 1 July 2010. FACSFACSDINST 3120.1F re-write - 80% complete, estimated completion date 15 May 2010. FACSFACSDINST 3710.1 re-write - 40% complete, estimated completion date 1 July 2010.

[redacted] Exe (b)(6)

5830
N01J/552
13 Apr 10

From: Captain [redacted] U.S. Navy
To: Commander, Naval Air Force, U.S. Pacific Fleet

Exe (b)(6)

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Ref:

(a) JAGINST 5800.7E, CH 2
(b) COMDTINST M5830.1A
(c) Command Investigation into the Circumstances Surrounding the Class "A" Mishap Aircraft Collision of an AH-1W with a USCG C-130 that Occurred on 29 October 2009, dtd 23 Feb 2010, submitted by LtCol [redacted], USMC, Investigating Officer, to CG, 3rd MAW
(d) Report of Investigation: CG 1705 Mid-Air Collision of 29 Oct 2009, dtd 17 Mar 2010, submitted by CAPT [redacted], USCG, Senior Member, Board of Investigation, to CGD ELEVEN
(e) Aeronautical Information Manual
(f) FAA JO 7110.65T, Air Traffic Control
(g) NAVAIR 00-80T-114
(h) FACSFACSDINST 3120.1F
(i) FACSFAC SD ATCINST 3710.1A
(j) OPNAVINST 3710.7U
(k) COMDTINST M16130.2E

Encl:

(1) CNAF ltr 5830 N01J/552 of 01 Apr 10, CAPT [redacted] e-mail of 7 Apr 10, CAPT [redacted] e-mail of 12 Apr 10
(2) Excerpts from U.S. National Search and Rescue (SAR) Supplement to the International Aeronautical and Maritime SAR Manual
(3) Excerpts from U.S. Coast Guard Addendum to the U.S. National Search and Rescue (SAR) Supplement to the International Aeronautical and Maritime SAR Manual
(4) MISLE Case #480062 201 SITREP
(5) Summary of Interview Conducted by LtCol [redacted] USMC of LT [redacted], USCG
(6) USCG District Eleven Command Center SOP
(7) CG 1705 Weather Brief dtd 29 Oct 09
(8) Revised Search Pattern on Aero chart
(9) Excerpts from COMDTINST 3710.1F
(10) Summaries of Interviews Conducted by LtCol [redacted] USMC of Air Station Sacramento personnel
(11) Unsworn Statements Provided to LtCol [redacted], USMC by USCG D11 personnel
(12) USCG Estimate of the Number of Annual SAR Cases in which Air Assets utilize W-291 Airspace
(13) Unsworn Statements Provided to LtCol [redacted] USMC by Capt

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[redacted] USMC

(14) Unsworn Statements Provided to LtCol [redacted] USMC by 1st Lt [redacted] USMC

(15) Unsworn Statement Provided to LtCol [redacted] USMC by LtCol [redacted], USMC

(16) Unsworn Statement Provided to LtCol [redacted] USMC by 1st Lt [redacted] USMC

(17) Unsworn Statements Provided to LtCol [redacted] USMC by Maj [redacted] USMC

(18) Unsworn Statement Provided to LtCol [redacted] USMC by Capt [redacted], USMC

(19) Excerpts from FAA Aeronautical Information Manual (AIM) 2010

(20) Excerpts from FAA Air Traffic Control Manual, FAA JO 7110.65T

(21) Excerpts from FAA Special Use Airspace, FAA JO 7400.8S

(22) Excerpts from NATOPS Air Traffic Control Manual, NAVAIR-00-80T-114

(23) Excerpts from NATOPS General Flight and Operating Instructions, OPNAVINST 3710.7U

(24) Excerpts from Mission, Functions, and Task of Fleet Area Control and Surveillance Facility (FACSFAC) San Diego, COMNAVAIRPAC Instruction 5450.41B

(25) Manual of EASTPAC and MIDPAC Fleet Operating Areas, FACSFAC SD INST 3120.1F (Aug 2008)

(26) FACSFAC San Diego Facility Manual, ATCINST 3710.1A (Aug 2009)

(27) FACSFAC SD Facility Directive 10-01 dtd 11 Jan 2010 to the FACSFAC SD ATCINST 3710.1A of 19 Aug 2009

(28) Excerpts from FACSFAC VACAPES Instruction 3120.1J

(29) SOCAL Range Complex EIS/OEIS Final (December 2008)

(30) Los Angeles Sectional Aeronautical Chart, 85th Ed. (FAA National Aeronautical Charting Office)

(31) CG 1705 Bernie Book chart of W-291

(32) Unsworn Statement provided by CDR [redacted], USN, FACSFAC SD dtd 6 Apr 10

(33) Summary of Interview with CDR [redacted] USN, FACSFAC SD dtd 7 Apr 10

(34) Summary of Interview Conducted by LtCol [redacted], USMC of CDR [redacted] USN

(35) Unsworn Statement provided by ACC [redacted], USN, FACSFAC SD dtd 6 Apr 10

(36) Summary of Interview with ACC [redacted] USN, FACSFAC SD dtd 7 Apr 10

(37) Unsworn Statement provided by ACC [redacted], USN, FACSFAC SD dtd 6 Apr 10

(38) Summary of Interview with ACC [redacted] USN, FACSFAC SD dtd 7 Apr 10

(39) Summary of Interview Conducted by LtCol [redacted] USMC of AC1 Doyle, USN

(40) Unsworn Statement provided by AC1 [redacted], USN, FACSFAC SD dtd 6 Apr 10

(41) Summary of Interview with AC1 [redacted] USN, FACSFAC SD dtd 7 Apr

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Exe (b)(6)

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(42) Post-mishap Incident Report by AC1 [redacted], USN, FACSFAC SD
(43) Unsworn Statement provided by AC1 [redacted] USN, FACSFAC SD dtd 6 Apr 10
(44) Summary of Interview with AC1 [redacted], USN, FACSFAC SD dtd 7 Apr 10
(45) Unsworn Statement provided by AC3 [redacted], USN, FACSFAC SD dtd 6 Apr 10
(46) Summary of Interview with AC3 [redacted], USN, FACSFAC SD dtd 7 Apr 10
(47) Post-mishap Incident Report by AC2 [redacted], USN, FACSFAC SD
(48) Unsworn Statement provided by AC2 [redacted], USN, FACSFAC SD dtd 6 Apr 10
(49) Summary of Interview with AC2 [redacted] USN, FACSFAC SD dtd 7 Apr 10
(50) Summary of Interview Conducted by LtCol [redacted], USMC of AC2 [redacted], USN
(51) Unsworn Statement provided by AC2 [redacted], USN, FACSFAC SD dtd 6 Apr 10
(52) Unsworn Statement provided by AC2 [redacted] USN, FACSFAC SD dtd 6 Apr 10
(53) FACSFAC Manning Question for the Record
(54) FACSFAC SD UIC 09528 Manpower Summary for 6 Apr 10
(55) FACSFAC SD UIC 09528 Activity Manpower Document as of 23 Dec 09
(56) FACSFAC SD UIC 09528 Officer Distribution Control Report as of 5 Oct 09
(57) FACSFAC SD UIC 09528 FLTMPS Spreadsheet Showing Authorized Billets and Personnel On-Board, run 6 Apr 10
(58) FACSFAC SD UIC 09528 Enlisted Air Traffic Control Manning on 29 Oct 09
(59) FACSFAC Radar Operations Control Center Watchbill for October 2009
(60) CNAF Force Surgeon e-mail dtd 6 Apr 10
(61) CNAF (N74) Training Jacket Assessment Summary Completed on 8 Apr 10
(62) AC1 [redacted] Facility Watch Supervisor Designation Letter
(63) AC1 [redacted] Radar Supervisor Designation Letter
(64) Local Qualification Standards for Facility Watch Supervisor, AC1 [redacted]
(65) Local Qualification Standards for Radar Supervisor, AC1 [redacted]
(66) AC1 [redacted] Facility Watch Supervisor Designation Letter
(67) AC1 [redacted] Radar Supervisor Designation Letter
(68) AC3 [redacted] Proof of Qualification Designations
(69) Local Qualification Standards for Controller, AC2 [redacted]
(70) AC2 [redacted] Proof of Qualification Designation
(71) AC2 [redacted] Proof of Qualification Designation
(72) ACAN [redacted] Proof of Qualification Designation
(73) FACSFAC ATC Operator Currency and Proficiency Tracker
(74) CNAF(N74) Report of Air Traffic Control NATOPS Evaluation on FACSFAC SD Conducted 1-4 Feb 10
(75) FACSFAC Equipment Check Logs for 28 Oct 09 (Day), 29 Oct 09 (Day/Eve), 30 Oct 09 (Day), 5 Apr 10 (Day)

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(76) NAWCAD e-mail regarding FACTS Collision Detection Functions dtd 6 Apr 10
(77) FACSFAC Radar Branch Chief description of Mosaic Radar/FACTS System dtd 8 Apr 10
(78) Summary of CG 1705 Cockpit Voice Data Recorder (CVDR)
(79) FACSFAC SD Transcripts (OOC, POS 1, POS AI) of 29 Oct 09
(80) SCORE Track Density and SIMDIS Powerpoint Slides
(81) Naval Surface Warfare Center, Corona Division, Radar Track Slides
(82) FAA SOCAL TRACON Warhorse 53/CG 1705 Plot Data
(83) FACSFAC SD Manually Generated Flight Progress Strip for CG 1705 (1640T-1816T)
(84) FACSFAC SD Daily Record of Facility Operation - 29 Oct 09
(85) FACSFAC SD Radar Operations Control Center Position Logs
(86) FACSFAC SD SAR Log/Checklist
(87) MISLE Case #480105 201 SITREP
(88) Unsworn Statement Provided to LtCol [redacted], USMC by LCDR [redacted], USN
(89) Unsworn Statement Provided to LtCol [redacted] USMC by CDR [redacted] USCG
(90) SCORE Chronological Summary, [redacted]
(91) FACSFAC SD Post-Mishap Summary of Events
(92) Summary of Interview Conducted by LtCol [redacted], USMC of LCDR [redacted] USN
(93) Synopsis of Controller Evaluation Board (Incident CEB) for AC1 [redacted]
(94) Synopsis of Controller Evaluation Board (Incident CEB) for AC2 [redacted]
(95) Synopsis of Controller Evaluation Board (Incident CEB) for AC1 [redacted]
(96) Suspension of ATC Qualifications Letter for AC1 [redacted]
(97) Suspension of ATC Qualifications Letter for AC2 [redacted]
(98) Reinstatement Training Plan ICO AC1 [redacted]
(99) FACSFAC Command Initiated Evaluation dtd 15 Dec 2009

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Preliminary Statement

1. Per enclosure (1), I have conducted an investigation in accordance with reference (a), to inquire into the facts and circumstances surrounding the subject incident.

2. The purpose of this report is to provide a comprehensive summary of the investigation into the performance, training, and doctrine of Fleet Area Control and Surveillance Facility, San Diego (FACSFAC SD), as it relates to the collision of a Marine AH-1W and Coast Guard C-130 at 1909T on 29 October 2009.

3. Two related investigations into this incident were conducted by the United States Marine Corps, pursuant to reference (a), and the United States Coast Guard, pursuant to reference (b). These investigations were conducted as a collaborative effort, with both investigation teams conducting joint

interviews and sharing information to develop a joint finding of facts. Separate reports, references (c) and (d), were produced leading to the development of independent opinions and recommendations supported by the joint findings of fact. These reports provide a holistic account of the mishap, and contain additional information concerning the actions of the Marine Corps and Coast Guard flights that are outside the scope of this report.

4. This investigation focuses on the actions of FACSFAC SD personnel and their communications with other parties in the course of the subject incident. Many of the joint findings of fact noted in references (c) and (d) are utilized and included in this report. Moreover, additional findings of fact are introduced as a result of this independent investigation.

5. All reasonably available evidence was collected for this investigation and each directive of the Convening Authority was met. Enclosures (1) through (99) contain factual material evidence pertinent to this investigation.

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6. Legal assistance was provided by Lieutenant Commander [redacted], U.S. Navy, Deputy Force Judge Advocate, Commander, Naval Air Force, U.S. Pacific Fleet.

7. Witnesses were interviewed at Naval Base Coronado (Naval Air Station North Island), California. No difficulties were encountered while interviewing witnesses.

8. All social security numbers and other personal indentifying information were obtained from administrative sources so no witnesses were advised of their rights under the Privacy Act in accordance with Paragraph 0523, reference (a).

9. Verbal communications from and within the USCG C-130 were reconstructed from the FA2100 Cockpit Voice and Flight Data Recorder (CVDR), which was recovered from the aircraft wreckage. The CVDR data was downloaded and decoded by L3 Communications in Sarasota, Florida. The CVDR did not have the capability to download aircraft flight data, therefore all headings, altitudes and airspeeds were derived from external radar information.

10. Historical radar display presentations were viewed via the FACSFAC radar system (FACTS) playback mode. Investigating officer viewed the recorded radar display video for the period approximately 10 minutes prior to and after the midair collision.

11. All times in this report are local Pacific Daylight Time (PDT) unless otherwise annotated.

12. A request for extension to the original due date for this report of 9 April 2010 was submitted on 7 April 2010 and the extension was granted until 13 April 2010. Enclosure (1) contains the original appointment letter, the request for extension and the extension approval documentation.

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Narrative Summary

To orient the reader prior to proceeding into the findings of fact, the following narrative summary is provided:

At approximately 1415, Coast Guard District 11 (CGD11) assumed the SAR Mission Coordinator (SMC) role for an overdue skiff case and directed the launch of an Air Station Sacramento HC-130 aircraft.

At approximately 1530, CG 1705 launched en route San Clemente Island (SCI) to begin the execution of its search pattern. CG 1705 arrived on-scene at approximately 1640 and initiated its pattern, which took it in and out of Warning Area 291 (W-291). W-291 is Special Use Airspace as defined by Federal Aviation Regulation (FAR) off the coast of southern California encompassing SCI.

At approximately 1846, Vengeance 38 (Mishap Cobra) launched from Marine Corps Base Camp Pendleton (MCB CP) along with another AH-1W helicopter, Vengeance 39 (Dash-2 Cobra), enroute to W-291. The Cobra flight traveled south towards Oceanside, California, where it rendezvoused with a flight of two CH-53E helicopters (Warhorse 53/Lead CH-53E and Warhorse 50/Dash-2 CH-53E) that had launched from Marine Corps Air Station Miramar (MCAS Miramar). These helicopters joined, forming a division (flight of four), and proceeded westbound towards W-291 to conduct an escort/assault training mission. The two CH-53Es (WH53/WH50) were in the lead, and the two AH-1Ws (V38/V39) followed in trail.

Meanwhile, several other air and surface assets were operating within W-291. Fleet Area Control and Surveillance Facility, San Diego (FACSFAC San Diego, a.k.a. Beaver Control) a Navy command located aboard Naval Air Station North Island, Coronado, California provided off-shore air traffic control services within W-291.

The flight of four USMC helicopters entered W-291 at approximately 1854, continuing on a westerly course towards the Shore Bombardment Area (SHOBA) on the southern end of SCI. CG 1705, having completed a leg of its pattern that took it out of W-291, re-entered W-291 at 1906 on a southwesterly course.

At 1908, following the lead of WH53 (the division lead), the USMC flight of four initiated a right-hand turn while climbing to approximately 1000' in an attempt to provide additional separation between the flight and a Navy SH-60B (Lonewolf 55) operating with the USS CURTS (FFG-38) at approximately 200' near the flight. The turn and climb of the Marine Corps flight brought the Mishap Cobra to the same altitude as, and in the flight path of, CG 1705 which was searching at approximately 1000' on a steady southwesterly course.

CG 1705 and Vengeance 38 (Mishap Cobra) collided at 1909:37.

Both aircraft were destroyed on impact with each other or the resulting impact with the water. Nine service members were killed in the mishap, two

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USMC personnel in the AH-1W and seven USCG personnel in the C-130. After an exhaustive search for survivors and significant portions of the aircraft wreckages, no survivors were found and the Cockpit Voice Data Recorder (CVDR) aboard the C-130 was the only noteworthy portion of either aircraft wreckage to be recovered.

Findings of Fact

Coast Guard Eleventh District

1. U.S. Coast Guard (USCG) District Eleven (CGD11) carries the responsibility of Rescue Coordination Center (RCC) Alameda. RCC Alameda is assigned a rescue region covering an area beginning at the Oregon-California border, going west approximately 1,000 miles, and South past the Mexico/Guatemala border. [Encls 2,3]

2. COMDTINST M16130.2E is the U.S. Coast Guard Addendum to the United States National Search and Rescue Supplement (NSS) to the International Aeronautical and Maritime Search and Rescue Manual (IAMSAR). Pursuant to this instruction a SAR Mission Coordinator (SMC) is designated to manage each SAR mission and to coordinate resources. The SMC is designated by the SAR response system for each specific SAR mission and coordinates and manages the overall response to a SAR incident. There is always an SMC. The SMC may be either a person within an RCC, or a person outside of and designated by the RCC who is given lead responsibility to coordinate the SAR response. [Encl 3]

3. Sector Los Angeles/Long Beach (LA/LB) was SMC for Marine Information for Safety and Law Enforcement (MISLE) CASE # 480062, involving a skiff with one person onboard that had been missing since approximately 2000 on 27 October 2009. [Encl 4]

4. Sector LA/LB was first notified that the skiff was missing on 28 October at approximately 2000 and maintained SMC until 29 October at 1415. [Encl 5]

5. SMC of the case was passed to RCC Alameda at 1415 on 29 October due to the search area for the case drifting into both the Sector LA/LB and Sector San Diego areas of responsibility (AOR). [Encls 3,5]

6. The Standard Watch for the District Eleven Command Center (CGD11CC) is:

1. Command Duty Officer (CDO)
2. SAR Controller (SARDO)
3. Law Enforcement Duty Officer (LEDO)
4. Situation Controller (SUDO)

[Encl 6]

7. On watch at the CGD11CC on 29 October were:

1. Lieutenant [redacted] (CDO)
2. Lieutenant Junior Grade [redacted] (SARDO day)
3. Lieutenant Junior Grade [redacted] (SARDO night)

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4. Lieutenant Junior Grade [redacted] (LEDO night)
5. Lieutenant [redacted] (LEDO day)
6. Lieutenant Junior Grade [redacted] (SUDO night)
7. Operations Specialist First Class [redacted] (SUDO day)
[Encl 4]

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CG 1705 Mission and Tasking

8. On 29 October 2009 at 1423, CGD11CC directed the launch of the Air Station Sacramento Ready C-130 in support of MISLE CASE #480062. [Encl 4]

9. The Coast Guard C-130, call-sign "Coast Guard 1705" (CG 1705) was assigned a 66 x 52.7 mile visual and radar search pattern encompassing San Clemente Island (SCI). [Encls 4, 8]

10. CG 1705 had launched from McClellan Air Park, Coast Guard Station Sacramento, California, on an active Search and Rescue (SAR) mission to search for a missing small boat in the vicinity of SCI. Coast Guard District Eleven (CGD11), the controlling agency for the SAR mission, had coordinated via telephone with FACSFAC to inform them that CG 1705 would be conducting an active SAR mission in the W-291 for several hours. CG 1705 would be flying "un-aided," or without the use of NVDs. [Encls 4, 10, 11]

Warhorse 53 Flight's Mission

11. The mission of 29 October 2009 involved a flight of four USMC helicopters, two CH-53Es and two AH-1Ws. [Encls 13, 14, 15, 16, 17, 18]

12. The mishap AH-1W was the lead aircraft in a flight of two AH-1Ws, call-signs Vengeance 38 and 39 (V38/V39) from HMLA-469, which were on a mission with Warhorse 53 and 50 (WH53/WH50), two CH-53Es from HMH-465. The purpose of the AH-1Ws' flight was to be the Escort Flight Lead (EFL) for a live aerial gunnery shoot conducted by WH53 and WH50 in the Shore Bombardment Area (SHOBA) on the south side of SCI. [Encls 13, 14, 15, 16, 17, 18]

13. The intended flight path as briefed was for the CH-53Es to depart Miramar and fly north toward Camp Pendleton, where they would rendezvous with the AH-1Ws. Once formed up, the flight would proceed into Warning Area 291 (W-291) then direct to SHOBA. [Encls 13, 15, 16]

14. The formation was briefed as combat cruise or combat spread with WH50 planned to be approximately five rotor diameters or 500 feet behind and to the left of the lead CH-53E (WH53). The briefed altitude was 500'. [Encl 16]

15. The AH-1Ws planned to position themselves with V39 in the 5 o'clock and V38 in the 7 o'clock positions from WH53/50 and briefed to be approximately 3-5 rotor diameters from the CH-53Es. The briefed altitude was 300' of step up from the CH-53Es (anticipated to be 800' due to the CH-53s intended transit altitude of 500'). [Encls 13, 14]

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FACSFAC San Diego - General Description and Mission

16. Fleet Area Control and Surveillance Facility San Diego (FACSFAC SD) is a U.S. Navy facility, based at Naval Air Station, North Island, California. [Encl 25]

17. FACSFAC SD is a subordinate unit to Commander, Naval Air Forces (CNAF) and reports directly to CNAF both operationally and administratively. [Encl 26]

18. The FACSFAC SD mission is to provide off-shore air traffic control and surveillance as well as active management of assigned airspace, operating areas, ranges and training resources in order to support homeland defense and enhance combat readiness of U.S. Pacific Fleet units in all warfare areas. [Encl 24]

19. FACSFAC SD, call-sign "Beaver Control" or "Beaver", manages the Southern California (SOCAL) offshore military operating area (OPAREA). [Encl 25]

20. Special Use Airspace consists of airspace wherein activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not a part of those activities, or both. [Encl 20]

21. Warning Areas are non-regulatory, Special Use Airspace in the FAA Air Traffic Control system. [Encl 20]

22. A Warning Area is airspace of defined dimensions extending from three nautical miles outward from the coast of the United States, which contains activity that may be hazardous to nonparticipating aircraft. The purpose of a warning area is to warn nonparticipating pilots of the potential danger. A warning area may be located over domestic or international waters or both. [Encl 20]

23. W-291 is one of the Special Use Airspace areas controlled by FACSFAC SD and is in the SOCAL OPAREA. W-291 is depicted on aeronautical charts; however, controlled firing areas and "hot areas" contained within its boundaries are not themselves depicted. [Encls 21, 25, 30, 31]

24. FACSFAC SD operates two detachments responsible for aircraft within W-291: the Southern California Offshore Range (SCORE, call-sign "Starburst") and FACSFAC San Clemente Island. [Encl 25]

25. SCORE reports to FACSFAC SD and is the single operational authority over the San Clemente Island ranges. SCORE's mission is to exercise control of the San Clemente Island land, air, and sea ranges including SHOBA, the SOCAL anti-submarine warfare (ASW) ranges, and the eight "Papa" areas within W-291. These ranges, also called "hot areas," provide military services, space, and facilities to conduct live fire, readiness training, and test and evaluation activities. [Encls 25, 26]

26. The Shore Bombardment Area (SHOBA) is located at the southern end of San Clemente Island and is utilized for naval surface, artillery/mortar and air-to-ground gunnery exercises. [Encls 25, 26]

27. Aircraft operating in W-291 are notified of all active hot areas by Beaver Control. Aircrew operating in SOCAL OPAREA shall receive a thorough brief on "hot areas" upon check-in with a controller. [Encls 25, 26]

28. The SOCAL Range Complex Environment Impact Statement states:

1. Military aircraft routinely operate in international airspace in W-291. These aircraft take off from military airfields in California and Arizona, including the airfield at SCI (San Clemente Island), or from aircraft carriers operating offshore. Military aircraft take off from mainland airfields normally with an IFR clearance from FAA Air Traffic Control. After entering W-291, flights proceed via VFR, using a "see and avoid" rule to remain clear of other air traffic.

2. When W-291 is active, aircraft on IFR clearances are precluded from entering W-291 by the FAA. However, since W-291 is located entirely over international waters, nonparticipating aircraft operating under VFR are not prohibited from entering the area. Examples of aircraft flights of this nature include light aircraft, fish spotters, and whale watchers which occur under VFR throughout W-291 on a variable basis. [Encl 29]

29. W-291 is Special Use Airspace as defined by Federal Aviation Regulation (FAR) and flights within W-291 are conducted under Visual Flight Rules ("VFR") unless an Instrument Flight Rules ("IFR") clearance is required to enter and/or exit W-291. VFR flight procedures are conducted per the "see and avoid" principle, as defined in the Aeronautical Information Manual (AIM), by which all aircraft are required to maintain visual separation from other aircraft. [Encl 19]

30. Standard ATC procedures and coordination apply within FACSFAC-controlled airspace. [Encls 20, 25]

31. Standard ATC procedures are outlined in and governed by Federal Aviation Administration (FAA) Order 7110.65T. [Encl 20]

FACSFAC SD - Doctrine and Policy

32. FAA JO 7110.65 prescribes procedures and phraseology for use by personnel providing air traffic control services. FAA JO 7110.65T is the primary ATC manual for all DoD and FAA air traffic controllers. [Encls 20, 22, 39]

33. FAA JO 7110.65 provides as follows:

1. "The primary purpose of the ATC system is to prevent a collision between aircraft operating in the system."

2. "Give first priority to separating aircraft and issuing safety alerts as required in this order. Good judgment shall be used in prioritizing all other provisions of this order based on the requirements of the situation at hand."

3. "The issuance of a safety alert is a first priority once the controller observes and recognizes a situation of unsafe aircraft proximity to terrain, obstacles, or other aircraft."

4. "Traffic Advisories" are defined as advisories issued to alert pilots to other known or observed air traffic which may be in such proximity to the position or intended route of flight of their aircraft to warrant their attention. Such advisories may be based on: visual observation; observation of radar identified and non-identified aircraft targets on an ATC radar display; or verbal reports from pilots or other facilities.

5. The word "traffic" followed by additional information, if known, is used to provide such advisories; e.g., "Traffic, 2 o'clock, one zero miles, southbound, eight thousand."

6. Traffic advisory service will be provided to the extent possible depending on higher priority duties of the controller or other limitations; e.g., radar limitations, volume of traffic, frequency congestion, or controller workload. Radar/non-radar traffic advisories do not relieve the pilot of his/her responsibility to see and avoid other aircraft. Pilots are cautioned that there are many times when the controller is not able to give traffic advisories concerning all traffic in the aircraft's proximity; in other words, when a pilot requests or is receiving traffic advisories, he/she should not assume that all traffic will be issued.
[Encl 20]

34. FACSFAC San Diego Instruction 3120.1F (FACSFACSDINST 3120.1F) is the procedures guide and operations manual for FACSFAC SD. [Encl 25]

35. FACSFACSDINST 3120.1F provides as follows:

1. "The controller's number one priority is separation of aircraft and issuance of safety alerts."

2. "FACSFAC does not provide separation of aircraft operating in airspace assigned jointly to different units. Concurrent Use Airspace (CO-USE) operations are separated by the principle of "see and avoid" under VMC [visual meteorological conditions)." [Encl 25]

36. The NATOPS Air Traffic Control Manual (NAVAIR 00-80T-114) contains information on administrative and operational procedures for all Navy and Marine Corps units providing air traffic control services and applies on a worldwide basis. It provides that the mission of Navy and Marine Corps air traffic control facilities is to provide for the safe, orderly, and expeditious movement of air traffic. [Encl 22]

37. NAVAIR 00-80T-114 provides the following guidance regarding "Special Use Airspace Control Service": this service combines both air traffic control in the classic sense (i.e. separating aircraft from each other or obstructions) and the provision of combat direction and/or special use airspace surveillance and scheduling. Service is mission oriented and includes:

1. Providing direction and flight following of mission aircraft.

2. Providing advisory control to aircraft conducting visual flight rules (VFR) operations within radar surveillance areas, including navigational assistance to ensure integrity of adjacent controlled airspace.

3. Interfacing with the National Airspace System, including positive control of instrument flight rules (IFR) aircraft arriving and departing SUA.
[Encl 22]

38. FACSFAC provides W-291 users with the following services: IFR handling, advisory control to VFR aircraft, controlled airspace/hot area advisories, weather information, SAR/MEDICO/MEDEVAC/HUMEVAC assistance. [Encl 25]

39. FACSFACSDINST 3120.1F para. 2.12.2 states, in relevant part, "In order to maximize safety and effectively provide radar service to W-291 users, the following priorities will be utilized:

1. Prevention of spill-ins/spill-outs
2. Traffic advisories
3. Recommended headings for VFR aircraft upon request
4. Check-in/check-out of civil VFR aircraft
5. Weather
6. Bird Activity
[Encl 25]

40. Other pertinent provisions of FACSFACINST 3120.1F:

1. "While the majority of Fleet OPAREAs exist within Special Use Airspace (Warning Areas, Restricted Areas, etc.), it is important to recognize that non-military surface and air platforms cannot be restricted nor prohibited from operating in or transiting most Fleet OPAREAs."

2. "No unit shall transit FLETA HOT, SOAR, or any part of San Clemente Island, including SHOBA at any time without clearance

from Beaver Control due to frequent short notice hazardous events."

3. "Aircrew shall maintain a vigilant lookout at all times while operating under VFR/VMC. Numerous non-transponder equipped civil aircraft operating at low altitudes (e.g., fish spotters) use the offshore areas and may not be displayed on FACSFACSD radar equipment."
[Encl 25]

41. OPNAV 3710.7U states the following regarding IFR and positive control procedures, "To decrease the probability of midair collisions, all flights in naval aircraft shall be conducted in accordance with IFR to maximum extent practicable. This shall include all point-to-point and round-robin flights using Federal airways and other flights or portions thereof, such as flights to and from target or operating areas accessible through IFR filing. All other flights shall be conducted under positive control to the maximum extent possible. This shall apply in the following areas:

1. In the airspace over the United States and adjacent coastal waters within the 12-mile limit.

2. Within offshore operating areas of CONUS and Alaska outward to the limit of the domestic ARTCC, airspace in the Hawaiian Islands, and in the San Juan domestic control area.

3. Airspace in the vicinity of other U.S. territories and overseas airfields as prescribed by local area commander policies.

Note

Commanding officers shall ensure compliance with the intent and spirit of this requirement and shall scrutinize all flight operations as to mission and purpose to assure they are conducted in accordance with IFR and positive control to the maximum extent practicable without mission degradation.
[Encl 23]

42. OPNAV 3710.7U defines the following levels of radar control:

1. Advisory - the tactical control of aircraft by a designated control unit in which the pilot receives directions and recommendations. Aircraft commanders are not relieved of responsibility for their own safety and navigation.

2. Positive - The tactical control of aircraft buy a designated control unit, whereby the pilot receives orders affecting aircraft movements that transfer responsibility for the safe navigation of the aircraft to the unit issuing such orders. The ultimate safety of the aircraft is the responsibility of the pilot.
[Encl 23]

43. The FAA Aeronautical Information Manual states the VFR separation criteria for controlled airspace:

1. Class B Airspace - An ATC clearance is required to enter and operate within Class B airspace. VFR pilots are provided sequencing and separation from other aircraft while operating in Class B airspace.

    (1) VFR aircraft are separated from all VFR/IFR aircraft which weigh 19,000 pounds or less by a minimum of:
        a. Target resolution, or
        b. 500 feet vertical separation, or
        c. Visual separation

    (2) VFR aircraft are separated from all VFR/IFR aircraft which weigh more than 19,000 and turbojets by no less than:
        a. 1 ½ miles lateral separation, or
        b. 500 feet vertical separation, or
        c. Visual Separation

    (3) This program is not to be interpreted as relieving pilots of their responsibilities to see and avoid other traffic operating in basic VFR weather conditions, to adjust their operations and flight path as necessary to preclude serious wake encounters

2. Class C Airspace - Separation is provided within the Class C airspace and the outer area after two-way radio communications and radar contact are established. VFR aircraft are separated from IFR aircraft within Class C airspace by any of the following:

    (1) Visual separation

    (2) 500 feet vertical; except when operating a heavy jet

    (3) Target resolution

3. Class D and E airspace - no separation services are provided to VFR aircraft.

4. There are no specified VFR separation criteria for uncontrolled or special use airspace in the AIM. [Encl 19]

44. OPNAV 3710.7U addresses See and avoid policy in section 5.2.3, where it states, "The see and avoid concept applies to visual flight conditions, thus eliminating the need for specific route clearance from ATC agencies under most circumstances. Since pilots are responsible for their own separation from other aircraft, conditions must exist that permit ample opportunity to see and avoid other air traffic and maintain obstruction clearance. The

following measures shall serve as additional precautions when separation is maintained through the see and avoid concept, provided no degradation of the assigned mission will result.

1. Excepting single-seat aircraft, electronic equipment, such as airborne radar, should be used where feasible.

2. Where available, radar advisory service shall be requested especially when VFR flight is required through high-density traffic areas.
[Encl 23]

45. FACSFAC SD INST 3120.1F states the following in Appendix A about the Northern Air Operating Area (NAOPA) of W-291:

1. "This OPAREA is the most congested air operating area within SOCAL. All air users are encouraged to use other OPAREAs whenever possible.

2. Heavily used airways and controlled airspace surround this area."

This is the area in which the midair collision occurred. [Encl 25]

46. FAA JO 7110.65T para. 2-1-4(c) states, "Provide maximum assistance to SAR aircraft performing a SAR mission." The operational priority for SAR missions is third, immediately following aircraft emergencies and air evacuations/medical evacuations. [Encl 20]

47. COMNAVAIRPACINST 5450.41B contains the following in the listing of assigned functions and tasks of FACSFAC San Diego regarding Air Traffic Control support to SAR:

1. "Provide emergency assistance to users of SUA and support search and rescue (SAR) activity as directed/requested by higher authority;

2. Provide assistance during SAR and Medical Evacuation (MEDEVAC)." [Encl 24]

48. FACSFACSDINST 3120.1F 2.10 and Appendix E and FACSFAC SD ATCINST 3710.1A Chapter 6 provide thorough guidance on how SAR operations are to be conducted when FACSFAC San Diego is integrally involved in an actual SAR mission as the SMC. However, it is silent regarding FACSFAC controller duties in coordination with outside agencies conducting SAR operations within FACSFAC's operating area, including W-291. [Encl 25, 26]

49. FACSFACSDINST 3120.1F para. 2.38 states, "Operational missions, SARs, MEDEVAC and active Law Enforcement/Drug Interdiction will preempt Fleet OPAREA activities. Scheduling Authority/Activity shall closely monitor operational missions to mitigate interference to scheduled events." [Encl 25]

50. FACSFAC Virginia Capes (FACSFAC VACAPES) is the East Coast counterpart to FACSFAC SD and is located in Virginia Beach, Virginia. [Encl 28]

51. FACSFACVACAPESINST 3120.1J requires FACSFAC VACAPES to be kept informed of all SAR activities within its areas of responsibility in order to clear the area required by SAR missions. SAR has equal priority to Undersea Warfare surveillance and investigations, and a higher priority than active drug interdiction missions. [Encl 28]

52. A rough estimate of the number of civilian and military SAR cases that require airborne assistance within W-291 airspace is approximately 10-15 per month. [Encl 12]

53. FAA JO 7110.65S provides the following guidance regarding traffic separation for formation flights: [There is no amplifying information or specificity within FAA JO 7110.65S whether this guidance applies to IFR traffic or VFR traffic and whether it applies in or out of Special Use Airspace]

1. Because of the distance allowed between formation aircraft and lead aircraft, additional separation is necessary to ensure the periphery of the formation is adequately separated from other aircraft, adjacent airspace, or obstructions. Provide supplemental separation for formation flights as follows:

    (1) Separate a standard formation flight by adding 1 mile to the appropriate radar separation minima.

    (2) Separate two standard formation flights from each other by adding 2 miles to the appropriate separation minima.

    (3) Separate a nonstandard formation flight by applying the appropriate separation minima to the perimeter of the airspace encompassing the nonstandard formation or from the outermost aircraft of the nonstandard formation whichever applies.

    (4) If necessary for separation between a nonstandard formation and other aircraft, assign an appropriate beacon code to each aircraft in the formation or to the first and last aircraft in trail.
    [Encl 20]

54. The FAA Aeronautical Information Manual provides the following definition of a Formation Flight: More than one aircraft which, by prior arrangement between the pilots, operate as a single aircraft with regard to navigation and position reporting. A standard formation is one in which a proximity of no more than one mile laterally or longitudinally and within 100 feet vertically from the flight leader is maintained by each wingman. Nonstandard formations are those operating under any of the following conditions:

1. When the flight leader has requested and ATC has approved other than standard formation dimensions.

2. When the operations are conducted in airspace specifically designed for a special activity.
[Encl 19]

55. Formation flights shall be controlled/cleared as a single aircraft unless the formation leader requests otherwise. [Encl 23]

56. The FAA Aeronautical Information Manual provides the following about transponder operations:

1. Pilots should be aware that proper application of transponder operating procedures will provide both VFR and IFR aircraft with a higher degree of safety in the environment where high-speed closure rates are possible. Transponders substantially increase the capability of radar to see an aircraft and the Mode C feature enables the controller to quickly determine where potential traffic conflicts may exist. Even VFR pilots who are not in contact with ATC will be afforded greater protection from IFR aircraft and VFR aircraft which are receiving traffic advisories.

2. Nevertheless, pilots should never relax their visual scanning vigilance for other aircraft.

3. In all cases, while in controlled airspace each pilot operating an aircraft equipped with an operable ATC transponder maintained in accordance with 14 CFR section 91.413 shall operate the transponder, including Mode C if installed, on the appropriate code or as assigned by ATC. In Class G airspace, the transponder should be operating while airborne unless otherwise requested by ATC. [Encl 19]

57. FACSFACINST 3120.1F paragraph 2-12 states, "Aircraft will not operate in W-291 without an operable transponder except: Multiple aircraft flights that remain joined throughout the flight (considered a single unit for ATC purposes), provided one aircraft has an operating transponder." [Encl 25]

FACSFAC SD Manning

58. FACSFAC manpower requirements per the Activity Manning Document for UIC 09528 call for the following:

1. Officers Authorized - 7
2. Total Enlisted Authorized (Billets Authorized (BA)/Navy Manning Plan (NMP)) - 110/104
3. Air Traffic Controller Rating (BA/NMP) - 64/62

[Encls 54, 55, 56, 57]

59. Per the Officer Distribution Control Report and Enlisted Distribution Verification Report current FACSFAC manning as of 6 Apr 10:

1. Officers On Board - 7
2. Total Enlisted On Board - 118
3. Air Traffic Controller Rating On Board - 64

[Encls 54, 56, 57]

60. FACSFAC Air Traffic Controller Manning on 29 Oct 09:

1. Air Traffic Controller Total Rating On Board - 59
2. AC Rating Breakdown by Rank (BA/NMP/Current On Board) -

(1) E8 - 1/1/2
(2) E7 - 3/3/4
(3) E6 - 13/12/14
(4) E5 - 29/29/21
(5) E4 - 18/17/16
(6) E3 - 0/0/2

3. One AC1 and two AC3s were assigned to Individual Augmentation assignments in support of Global War on Terror (GWOT) Operations [Encls 54, 55, 57, 58]

61. NAVAIR 00-80T-114 describes the General FACSFAC watch positions:

1. Facility Watch Supervisor (FWS): The FWS is responsible for operational performance of the watch crew on duty. Duties include - effecting real-time OPAREA schedule changes based on existing requirements/requests, coordinating requirements for special handling aircraft or emergency aircraft requirements including SAR and MEDEVAC operations, and ensuring controllers are briefed on special events.

2. Radar Supervisor (RS): The RS will monitor and assist controllers with required coordination and ensure all controllers are performing at an acceptable level. Duties include - coordination of airspace, resolving any operating conflicts, and overseeing any special handling aircraft or emergency aircraft requirements including SAR and MEDEVAC operations.

3. Approach Control (AP): AP is responsible for coordination and control of all instrument traffic within the Air Traffic Control Facility area of jurisdiction.

4. Sector Control (SC): The function of SC is to provide Special Use Airspace (SUA) control services to all aircraft within the Air Traffic Control Facility's assigned SUA.

5. Assistant Sector Control (ASC): The function of ASC is to effect coordination with other sectors and adjacent ATC facilities, receive and relay aircraft movement messages, and prepare and post flight progress data. ASC is responsible for assisting SC.

6. Flight Data (FD): FD monitors and operates equipment to provide controllers with information to maximize safe and efficient ATC services.
[Encl 22]

62. FACSFAC SD separates W-291 airspace into the "North" sector and the "East/West" sector for purposes of manning and radar control. [Encls 26, 34, 42]

63. The SOCAL Controller North Sector includes the airspace around SCI, Northern Air Operating Area (NAOPA), FLETA HOT, SHOBA and SOAR. Additionally, the SOCAL Controller North Sector has been officially combined with the Approach Controller position. [Encls 25, 34]

64. The SOCAL Controller East/West Sector includes the airspace around the designated "Papa" areas, exclusive-use areas south of the North Sector. [Encl 25]

65. FACSFAC San Diego Facility Manual (ATCINST 3710.1A) paragraph 305 states, "Between the hours of 0800 to 2000 all operating positions shall be de-combined to the greatest extent practical. Only the FWS has the authority to combine positions. Prior to combining operating positions the FWS shall take into consideration current volume and the projected/anticipated traffic volume. Once the positions are combined, it is the responsibility of the Radar Supervisor to ensure positions do not remain combined simply to enhance the volume of traffic a single controller is working or to challenge the ability of a trainee. In fact the opposite is true; Radar Supervisors shall de-combine operating positions at an early enough stage to ensure the workload is evenly distributed and no one single controller is saturated.

1. FWS may be combined with RS at any time.

2. SOCAL Controller E/W may be combined with Approach Controller. To provide for controller relief, SOCAL Controller E/W may be combined with Approach Controller during light periods of traffic.

3. The FWS shall ensure sufficient manning is readily available during all periods if traffic requires the positions to be de-combined."
[Encl 26]

66. A Facility Directive (10-01) was added to the FACSFAC SD ATC 3710.1A Facility Manual in Jan 2010, which implemented new policy regarding the combining of the FWS and RS positions. It states the following:

1. "Effective immediately, change section 305.6.d.1 to read:
   (1) From 0800-1600, the FWS and RS shall be de-combined unless one of the following conditions exists:
      a. Combining positions is required to conduct training.
      b. Head break, not to exceed 15 minutes.

Any reason other than specified in items a-b requires a Branch Chief's approval.

(2) From 1600-2230, the FWS and RS may be combined unless one of the following conditions exists:
a. A search and rescue is in progress
b. Major Operations are in progress (i.e. COMPTUEX, JTFEX, Fly-Offs etc.). If the FWS is unsure if a specific operation qualifies as a "Major Operation", immediately request further guidance from a Branch Chief prior to combining positions."
[Encl 27]

67. ATCINST 3710.1A paragraph 304 states, "Normal Work Hours Staffing Standard - Monday through Friday from 0630 to 2230 local:

1. Facility Watch Supervisor (FWS)
2. Radar Supervisor (RS)
3. NOCAL Controller (NC)
4. SOCAL Controller East/West Sector (SC E/W)
5. Approach Controller (AP)
6. SOCAL Assistant East/West (SCA E/W)
7. Approach Assistant Controller (AAP)
8. FD-1
9. FD-2"
[Encl 26]

68. ATCINST 3710.1A paragraph 304 states, "Monday through Friday after 2000 local (provided CCAs, Carrier Fly-Offs, or any special exercises are not scheduled) the FWS may reduce staffing to:

1. Facility Watch Supervisor (FWS)
2. Radar Supervisor (RS)
3. NOCAL Controller (NC)
4. SOCAL [Approach] Controller (AP)
5. SOCAL Assistant East/West (SCA E/W)
6. Approach Assistant Controller (AAP)
7. FD-1
8. FD-2"
[Encl 26]

69. At the time of the mishap:

1. The Facility Watch Supervisor (FWS) and Radar Supervisor (RS) were combined and manned by Air Controlman First Class (AC1) [redacted] ← Exe (b)(6)
2. The Approach Controller (AP) and SOCAL Controller E/W Sector were combined and manned by AC2 [redacted]
3. The Approach Assistant Controller (AAP) and SOCAL Assistant E/W Sector Controller were combined and manned by AC2 [redacted]

4. The Approach Assistant Controller in training and SOCAL Assistant Controller in training were combined and manned by AC2 [redacted] Exe (b) (6)

5. The Flight Data (FD) was Airman [redacted].

6. There was no scheduled military training in the East/West Sector, so East/West Sector positions were combined with the Approach positions. There were also no scheduled operations in NOCAL airspace so that position was not manned. [Encls 33, 34, 36, 38, 41, 42, 44, 46, 47, 49, 50, 51, 52, 53, 59]

70. The team on watch at the time of the mishap was Watch Team One, which was on its fourth evening watch (1400-2200) of the week that began on 26 Oct 09 [Encl 59]

71. All members of the watch team were assessed to be medically and physiologically qualified, well-rested, and physically and mentally prepared to conduct the mission with the following exceptions:

1. The FWS/RS, AC1 [redacted] had arrived for duty at 0630 to begin his annual flight physical. Part of the process included a [redacted], which led to a determination to [redacted] Between 1100 and 1230, he was administered [redacted] to support the procedure. He arrived at work at 1230 and assumed the watch on schedule.

2. The AP, AC2 [redacted], had been assessed as having [redacted] Exe (b) (6)
[Encls 32, 33, 34, 35, 36, 37, 40, 41, 45, 46, 61]

72. NAVAIR 00-80T-114 3.3.7.1 Hours of Duty states, "ATC facility operational requirements will establish normal working periods and work schedules. A normal scheduled ATC watch should be 8 hours and not exceed 10 hours. A scheduled crew rest period of at least 8 to 12 hours should occur between ATC watches." [Encl 22]

73. NAVAIR 00-80T-114 3.3.5.1 use of Drugs and Sedatives states, "The following policy shall apply in regard to the use of drugs and sedatives by air traffic control personnel:

4. Restricted use of drugs - personnel assigned to an operating facility, including those personnel who have direct supervision of controllers within a facility, shall not use the types of drugs listed below within a 24-hour period before assumption of duty.
    a. sedative-type drugs
    b. tranquilizers
    c. any drugs such as but not limited to anti-hypertensive agents or duodenal ulcer medications which have an effect on the central or autonomous nervous system.

d. any other drug and/or medication likely to affect the alertness, judgment, vision, equilibrium, or state of consciousness."
[Encl 22]

74. OPNAV 3710.7U 8.3.2.7 Dental Care states, "Dental procedures that involve the use of local injectable drugs (e.g., Novocain) shall be cause for grounding for a period of 12 hours. Use of intravenous sedatives shall require grounding for 24 hours. [Encl 23]

75. The CNAF Force Surgeon provided the following opinion on the downing status of a Novocain shot for an air controller, "Routine dental work with local anesthetic injections could technically meet the grounding criteria. Routine dental work with only local anesthetic is, however, very rarely officially put through the grounding process with clearance from a flight surgeon to put them back up. CAPT [redacted] and I have discussed this and Exe (b)(6) in our opinion routine dental work including local anesthetic is not a reason for grounding. When the procedures are more complicated and requires additional sedation and/or post op pain medications the member should be grounded and receive aeromedical clearance from a flight surgeon to return to flight status." [Encl 60]

76. The FWS released AC1 [redacted] early during the mishap shift as compensation for "additional support during previous shifts." [Encls 40, 41]

FACSFAC SD Training

77. All members of the watch team were assessed to have met all qualification, certification and proficiency requirements for each of their respective positions. [Encls 32, 33, 35, 36, 37, 38, 40, 41, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74]

78. All members of the FACSFAC SD chain of command interviewed stated that all members of the watch team on duty at the time of the mishap were fully qualified, current and proficient for their watch stations. [Encls 32, 33, 35, 36, 37, 38]

79. It is the opinion of the FACSFAC SD Director of Operations that the crew on duty had the requisite experience to handle the type of workload expected on the mishap shift. Moreover, he believes that the FWS was an average FWS who performed well in the FWS qualification process. The AC was rated as an above average controller who progressed ahead of his peers through the position syllabi. He was also assessed to be reliable and dependable. [Encls 32, 33, 35, 36, 37, 38, 40, 41]

80. AC1 [redacted] was designated a Facility Watch Supervisor on 2 Oct 09. [Encl 62] Exe (b)(6)

81. AC1 [redacted] had his NOCAL sector qualification suspended on 27 Jul 09 for failure to apply proper handoff procedures and ensure proper separation from adjacent airspace. He successfully completed his remediation syllabus

and was re-qualified on the position, which is a pre-requisite for Radar Supervisor and Facility Watch Supervisor designations. [Encl 33]

82. At the time of the incident, the Approach Controller's understanding of IFR and VFR service priorities, priorities among different class aircraft and operational vs. training event priorities was inconsistent with that of senior air traffic controllers. [Encls 36, 38, 45, 46]

83. Commander, Naval Air Force, U.S. Pacific Fleet conducted a periodic Air Traffic Control NATOPS Evaluation from 1-4 February 2010. Some items of note from the evaluation report:

1. "Overall, the Air Traffic Control (ATC) Facility is rated as 'satisfactory'."

2. "This is an excellent ATC Facility superbly led and managed by ACCS [redacted] and his management staff. Morale among Sailors was high and they performed professionally in the day to day performance of their job." Exe (b)(6)

3. "Applaud effort in achieving 13 FWS's. But what is the real requirement and are they really maintaining an acceptable level of proficiency. Need to keep a close [watch] on currency requirements so the individual is ready to perform when assigned."

4. "Basic air traffic control 101 knowledge. Young controllers loose on radar coordination, traffic calls need work, sequencing was unclear between [redacted] and T-45s. This may be a result of khaki personnel being pulled from the division for other tasking."

5. "Since the previous NATOPS Evaluation, FACSFAC San Diego, ATC Division has improved dramatically under the tutelage of ACC [redacted] and ACCS [redacted]. A marked improvement in all areas evaluated, especially training was evident." [Encl 74] Exe (b)(6)

FACSFAC SD Equipment Status and Limitations

84. All FACSFAC SD Radar Operations Control Center (ROCC) equipment required to control and communicate with all participants in W-291 was fully operational at the time of the mishap. [Encl 40, 43, 45, 75]

85. Post-mishap analysis showed that the recording capability of the phone was inoperative. [Encl 75]

86. The Aeronautical Information manual contains the following definitions of Radar:

1. "Primary Radar - A radar system in which a minute portion of a radio pulse transmitted from a site is reflected by an object and

then received back at that site for processing and display at an air traffic control facility,

2. Secondary Radar/Radar Beacon (ATCRBS) - A radar system in which the object to be detected is fitted with cooperative equipment in the form of a radio receiver/transmitter (transponder). Radar pulses transmitted from the searching transmitter/receiver (interrogator) site are received in the cooperative equipment and used to trigger a distinctive transmission from the transponder. This reply transmission, rather than a reflected signal, is then received back at the transmitter/receiver site for processing and display at an air traffic control facility." [Encl 19]

87. FACSFAC uses a MOSAIC multi-sensor radar system, which integrates the input of numerous long-range radar sites. The FACTS host processor receives digitized radar data and generates track symbols to system operators. It does provide a beacon and/or digitized primary target (raw radar video return), but it doesn't normally provide both. If the a/c has its transponder on then the beacon code and associated data will be the only thing a controller sees on the radar display. If the beacon is intermittent or completely off you should receive a primary symbol on the scope. Whether or not you see a primary target depends on the altitude and the radar coverage for the area. Post-mishap replay revealed that the three aircraft in the WH53 flight not squawking a beacon code did not register a primary return on the display. A possible reason is that since the aircraft were all within two miles of each other, the primary radar that was tracking them showed them as one target. [Encl 77]

88. Most enroute facilities employ this type of MOSAIC multi-sensor radar system due to the long ranges required to cover assigned airspace. [Encl 77]

89. The FACSFAC FACTS system has a collision detection function, which includes a proximity warning and collision avoidance alarm. This function is disabled; however, because of the incompatibility with missions performed in the warning areas. The number of unintended alarm signals would actually act as a hindrance to controller awareness vice a benefit. [Encl 76]

90. FACSFAC is working with Naval Air Warfare - Aircraft Division (NAWCAD) to determine if the system software can be modified to allow operators to activate this function in geographically selectable areas. An official change request is in work. [Encl 76]

FACSFAC Operating Procedures and Performance
(Refer to the Mishap Chronology for Additional Information Pertinent to FACSFAC SD Performance)

91. FACSPAC controllers were working with several aircraft or flights of aircraft in W-291 prior to and at the time of the incident. Of note:

1. Six USMC F/A-18 Hornets, call sign "Snake," going in and out of SCI on IFR clearances. The F/A-18s were being sequenced into the visual VFR field carrier landing pattern (FCLP) by an IFR enroute

handoff to an approach controller that provided a carrier controlled approach (CCA). Upon completion of the FCLP period, the Hornets would depart and request an IFR pick-up for en-route service back to MCAS Miramar.

2. One Navy SH-60B Seahawk helicopter, call sign "Lonewolf 55" ("LW55") conducting operations with USS CURTS at 200' and below altitude approx 13 miles east of SCI;

3. Two CH-53Es and two AH-1Ws, call sign "Warhorse 53 flight of four," a flight of four helicopters en route SHOBA.

4. One Coast Guard HC-130 aircraft, call sign "Coast Guard Rescue 1705" conducting SAR operations.
[Encls 42, 47, 50, 80, 90]

92. FACSFAC SD INST 3120.1F provides the following aircraft check-in requirements for W-291: "Aircraft operating in W-291 shall check-in with BEAVER on assigned frequency with the following: (1) Call-sign (2) Altitude (3) Number in Flight (4) Operating Area (5) Mission (6) Estimated Delay." [Encl 25]

93. Some controllers claim to provide expanded services to aircraft upon check-in to include a more detailed assessment of all traffic in the airspace. They also query the aircrew as to their intentions to determine the proper level of service to provide or offer to provide. [Encl 36, 38]

94. The radar controller at FACSFAC had contacts on his radar screen for CG 1705 and WH53 during the entire time that all five aircraft were in W-291 together. FACSFAC never correlated either contact to "radar identify" them, nor did FACSFAC ever provide a "traffic advisory" or "safety alert" to either CG 1705 or WH53. The definition of radar identification in FAA 7110.65T is, "the process of ascertaining that an observed radar target is the radar return from a particular aircraft." [Encls 20, 45, 46, 49, 78, 79]

95. The ATCINST 3710.1A states the following regarding post-accident actions:

1. "Any controller suspected of being involved in an operational error/deviation, or an aircraft accident, shall be relieved from position as soon as practical. Once relieved from position the controller shall not assume responsibility for any control position without specific approval from the ATCFO and will submit a written controller statement enclosure (4), to the FWS prior to securing from watch."

2. "The Radar Chief is responsible for initiating all accident/mishap investigations."
[Encl 26]

96. NAVAIR 00-80T-114 states "ATCF personnel who appear to have contributed to an accident or incident which jeopardizes safety of aircraft shall be

temporarily relieved of operational duty and referred to a military flight surgeon for physical/psychological evaluation." [Encl 22]

97. Though the Radar Chief was on the watch floor approximately 30 minutes after the mishap, the FWS/RS was not relieved of the watch position until two hours and five minutes after the mishap event and the AC was not relieved of the watch position until two hours and 14 minutes after the mishap event. [85, 91]

98. [redacted] Exe (b)(5)

[redacted] *See CNAP Amended Endorsement of 16 Aug 10

Weather

99. The general forecast weather for the mishap location (using terminal area forecast for LAX) was winds from the west (260 degrees) at 8-12 knots, greater than 6 miles visibility, and scattered clouds at 25,000ft. [Encl 7]

100. The observed weather conditions at the mishap location were greater than VFR requirements, clear and breezy, with westerly winds at 7 knots, gusting to 10-15 knots. [Encls 86, 89]

Mishap Chronology

101. At approximately 1430 CGD11 requested the launch of a C-130 search unit (SRU) from Air Station Sacramento. [Encl 4]

102. At 1505, CG Sector San Diego (SD) contacted CGD11 to discuss options to secure training flights within W-291 for an active SAR mission. A MISLE entry reads, "Contacted D11 via Jabber to see if they will request SCI to cease ex and open island for helo to search whole north side." [Encl 4]

103. At 1513, CGD11 called Sector SD and discussed SHOBA and a Navy exercise in the vicinity of SCI. [Encls 4, 11]

104. At 1513 the CGD11 SARDO initiated a call to SCI Operations (Starburst) regarding a Navy exercise off SCI. Starburst advised that Coast Guard aircraft should contact Starburst on frequency 352.1 approaching SCI. [Encls 4, 11]

105. At approximately 1521 CGD11 requested de-confliction of SHOBA airspace with SCI Operations. A MISLE entry reads, "Requested de-confliction of SOCAL Range airspace with San Clemente Ops. Called San Clemente Ops, who relayed UHF freq for CG a/c to make contact and de-conflict once in the air. Passed to SSD." [Encls 4, 11]

106. At 1523 the Air Station Sacramento Operations Duty Officer (ODO) placed a call to FACSFAC attempting to coordinate CG 1705's use of W-291. [Encl 10]

107. At 1526 the CGD11 SARDO called Air Station Sacramento to pass that SHOBA had an on-going Navy exercise. The SARDO passed check-in instructions and the exercise information, along with the Starburst frequency, to CG 1705. [Encl 11]

108. At approximately 1527 CG 1705 took off from Coast Guard Air Station Sacramento. [Encls 4, 10]

109. Prior to entering W-291, CG 1705 had requested a change in its search parameters to three nautical mile track spacing from the original one nautical mile track spacing. [Encls 11, 78]

110. At 1636, prior to entering W-291, CG 1705 made an initial radio check-in call with Beaver Control indicating its intentions to conduct an active SAR mission for several hours at an altitude of 1000' and requested any hot areas. Radio data do not indicate that CG 1705 ever asked for or was given radar flight advisories at any time during its mission in W-291. Beaver discussed activity in "SALT 1 and 2" and said they would try to coordinate with SCORE to have the range go cold. [Encls 44, 78, 79]

111. CG 1705 was properly checked in initially by the Approach Controller (AP) and a "flight progress strip" was produced by the Assistant Approach Controller (AAP). FACSFAC SD uses flight progress strips, "to post current data on air traffic and clearances required for control and other air traffic control services." [Encls 26, 44, 49, 83]

112. At 1640 CG 1705 was handed off from FAA SOCAL TRACON ("SOCAL Approach") to FACSFAC. CG 1705 arrived in W-291 and commenced searching for the skiff. Beaver said that CG 1705 was "radar contact." The definition of radar contact in FAA 7110.65T is, "[term] used by ATC to inform an aircraft that it is identified on the radar display and radar flight following will be provided until radar identification is terminated." [Encl 20, 78]

113. The FACSFAC SOCAL OPAREA should not be confused with the FAA SOCAL Approach. They are different entities with different (although bordering) National Airspace responsibilities. All references to the FAA SOCAL Approach Controller will be referred to as FAA SOCAL. [Encl 25]

114. CG 1705 was squawking 1277, an FAA-approved SAR squawk code, for its entire duration in W-291. [Encls 9, 20, 80]

115. At 1651, Beaver directed CG 1705 to turn to a heading of 220 to avoid SOAR, which was an active "hot" area. [Encls 78, 79]

116. At 1652, CG 1705 made another request to Beaver that hot areas be cleared so that CG 1705 could complete its SAR pattern. Beaver replied that it cannot call to stop an event. CG 1705 stated that its SAR mission is an "active search and rescue case" and stated "someone needs to set priority" for the airspace. Beaver replied, "Standby for coordination." [Encl 78, 79]

117. At 1701, Beaver informed CG 1705 that the "hot areas" were "cold" and CG 1705 could proceed with desired intentions and SAR mission execution. [Encl 78, 79]

118. At approximately 1808, AP turnover between AC1 [redacted] and AC2 [redacted]. [Encl 85] Exe (b)(6)

119. At 1816:30, CG 1705 departed W-291 as it continued its search and adjusted its flight path to accommodate the new search parameters it had requested earlier. Beaver terminated radar services for CG 1705 and handed CG 1705 off to SOCAL Approach. [Encls 78, 79]

120. At 1823, SOCAL Approach called FACSFAC via landline regarding CG 1705. SOCAL Approach stated to Beaver to "make sure you are keeping an eye on the Coast Guard squawking 1277" as CG 1705 was transiting between SOCAL and FACSFAC airspace. The FACSAC controller confirmed, "Yeah, we're watching him." [Encl 79]

121. At 1830, CG 1705 closes out with SOCAL who notifies CG 1705 they were "never radar identified." SOCAL Approach handed off CG 1705 back to FACSFAC. CG 1705 was heading toward the northern end of SCI where six F/A-18s were practicing carrier landing approaches (CCAs/FCLPs) at 1200'. [Encls 78, 79, 80]

122. Beaver called CG 1705 on emergency "guard" frequency to notify CG 1705 about the F/A-18 landing pattern. [Encl 79]

123. At 1830:24, 20 seconds after the "guard" radio call, CG 1705 radioed Beaver, "back with you." Beaver replied, "I currently have scheduled FCLPs on [SCI]. I need you to proceed due south or west on 270 heading, keep you clear." [Encls 78, 79]

124. CG 1705 turned to a heading of 270, then 280, at 1000' and below, and informed Beaver it was assigned an active search area. Beaver told CG 1705 to stand by for coordination. [Encl 78, 79]

125. At 1832 CG 1705 relayed to CGD11 via Communications Area Master Station Pacific (CAMSPAC) a concern about being unable to conduct the planned search pattern due to other aircraft training activity in the area. [Encl 78]

126. At approximately 1833, the FACSFAC assistant approach controller (AAP) and the SCI Arrival Controller conferred on their land line about CG 1705's intended flight path. The Arrival Controller informed AAP to have CG 1705 remain clear of the F/A-18 traffic and to utilize caution. [Encl 79]

127. At approximately 1833, shortly after the conversation with AAP, the SCI Arrival Controller and FACSFAC Radar Supervisor (RS) conferred via land line about CG 1705. RS said CG 1705 was going to fly right through the FCLP pattern at 1000' and below, to which Arrival responded "that's not going to happen." Arrival told RS to have CG 1705 contact SCI Tower to coordinate their intended flight path near the airfield and F/A-18 traffic. [Encl 79]

128. At 1834 CG 1705 requested a turn to 230 for 30 miles so it could resume its assigned search area after which it would reverse course to fly back toward SCI and south of the airfield. [Encls 47, 78, 79]

129. At approximately 1837, WH 53/50 departed MCAS Miramar. [Encls 15, 16, 17, 18]

130. At approximately 1845, CG 1705 turned left to 050, directly toward SCI airfield and the F/A-18 FCLP pattern. [Encl 80]

131. At approximately 1846, V38/39 departed MCAS Camp Pendleton. [Encls 13, 14]

132. At 1846 Beaver coordinated with SCI Tower to work CG 1705's SAR track around the CCAs. CG 1705 contacted SCI Tower. [Encls 78, 79]

133. At about this time, CGD11 was informed that CG 1705 had just been "kicked out" of W-291. [Encl 11, 78]

134. The USMC flight of four helicopters formed up with WH53/50 at approximately 400-500 feet and V38/39 at approximately 800 feet, heading westbound towards SHOBA. WH53 maintained the external communications and squawk for the flight. The other aircraft went to stand-by on their transponders. [Encls 13, 14, 15, 16, 17, 18]

135. At approximately 1850, CG 1705 was four miles west of SCI at 1500', heading 055 at approximately 190 knots. The flight of four was at approximately 400' and was turning to a heading of 240 at approximately 120 knots. Each aircraft was at the other's 1 o'clock position and were 58 miles apart. [Encls 80, 81]

136. At 1850:04 WH53 contacted Beaver for clearance into W-291. WH53 informed Beaver that they were a flight of four at 500' inbound to work SHOBA. Beaver told WH53 to contact Beaver again when entering W-291. Radio data does not indicate that WH53 asked for or was given radar flight advisories for the flight's transit to SCI. [Encls 17, 18, 78, 79]

137. At 1852 CGD11 MISLE case file stated, "D11 contacted SCI Ops, at (619) 545-9464 to de-conflict airspace issue, they have not been in contact with 1705, perhaps it was FACSFAC." [Encl 4]

138. At 1853:59 WH53 contacted Beaver for clearance into W-291 and was cleared into the area. WH53 was not assigned a discrete Mode 3 squawk at this time and continued to squawk 1200. No squawks were provided to any of the other aircraft in the formation and the lead aircraft did not request any additional squawks at any point during this event. [Encls 17, 18, 78, 79]

139. At 1854:32 CG 1705 reported to Beaver, "Beaver, CG 1705 back with you." [Encls 78, 79]

140. At 1856 the flight of four helicopters entered W-291 at approximately 500', heading 225 at 115 knots. CG 1705 was seven miles east of SCI at

1000', heading 055 at 185 knots. CG 1705 and WH53 were roughly 30 nautical miles apart, at each other's 1:30 o'clock position. [Encls 80, 81]

141. At 1857 the CGD11 MISLE summary stated, "D11 contacted FACSFAC, they have also not been in contact with 1705, however they know that may be talking to SCI Tower at 619-524-9379 or SCI Radar at 619-524-9240/9249." [Encl 4]

142. At 1859:54 CG 1705 switched frequencies to SOCAL Approach and exited W-291 to the north-northeast. [Encls 78, 79]

143. At 1900 the CGD11 SARDO called Starburst (SCORE) to further discuss SAR coordination for CG 1705. The call ended approximately 1903. [Encl 11]

144. At 1905:06 FACSFAC assigned an IFF squawk of 0653 to WH53. There is no reply or acknowledgment from WH53. Radio and radar data do not indicate that WH53 was squawking this assigned IFF code for the duration of the flight. [Encl 79, 80]

145. At 1905:30 SOCAL Approach terminated radar service for CG 1705 and advised it to contact Beaver. [Encl 78]

146. At 1905:48 the CGD11 SARDO initiated a call to FACSFAC Facility Watch Supervisor (FWS) to discuss SAR priority and airspace coordination in W-291 for CG 1705. The SARDO and FWS concluded that the SAR mission was more important than practice approaches. Then FWS passed along other numbers for CGD11CC to continue coordination efforts. [Encl 11]

147. At 1905:55, CG 1705 was at 1000', heading 216 degrees at 187 knots, bearing 004 degrees and approximately 5.5 nm from V38. [Encl 81]

148. At 1905:55, V38 was at 800', heading 241 degrees at 107 knots. [Encl 81]

149. At 1905:55, V38 was 32 degrees left of CG1705's nose. CG 1705 was approximately 123 degrees right of V38's nose. [Encl 81]

150. At 1906:01, CG 1705 checked back into W-291 for the final time with Beaver and advised Beaver of its search/flight intentions, but did not request radar advisories/flight following. [Encls 78, 79]

151. The Beaver Controller (AP) acknowledged CG 1705, but did not attempt to radar identify CG 1705 or provide updated information such as the arrival of the WH53 flight into W-291. [Encls 78, 79]

152. At 1906:25, CG 1705 was at 1000', heading 226 degrees at 179 knots, bearing 012 degrees and approximately 5.2 nm from V38. [Encl 81]

153. At 1906:25, V38 was at 800', heading 239 degrees at 116 knots. [Encl 81]

154. At 1906:25, V38 was 34 degrees left of CG 1705's nose. CG 1705 was approximately 133 degrees right of V38's nose. [Encl 81]

155. At 1906:48, the Beaver controller (AP) broadcasted to CG 1705, "Are you familiar with SHOBA?" Via ICS the crew stated "Familiar with Sheldon?" CG 1705 replied, "Negative for 1705." [Encls 78, 79]

156. At 1907:05, the Beaver controller stated he would pass SHOBA coordinates to CG 1705 and that, "SHOBA is going active for a live gun exercise surface to 5000." At this point the crew said on the ICS, "Oh, SHOBA...SHOBA." [Encls 78, 79]

157. For the next one and a half minutes, the Beaver controller (AP) gave IFR clearances to three "Snake" aircraft returning to Miramar from SCI. [Encl 79]

158. At 1907:31, CG 1705 was at 1000', heading 226 degrees at 187 knots, bearing 010 degrees and approximately 3.7 nm from V38. [Encl 81]

159. At 1907:31, V38 was at 800', heading 247 degrees at 119 knots. [Encl 81]

160. At 1907:31, V38 was 36 degrees left of CG 1705's nose. CG 1705 was approximately 123 degrees right of V38's nose. [Encl 81]

161. At 1908, the flight of four helicopters turned slightly right and climbed to avoid a low-flying Navy SH-60B, call-sign "Lonewolf 55" (LW55) that was entering the landing pattern for USS CURTS (FFG-38). Radar data indicate that LW55 was at approximately 100-200' during this time, while WH53, the only USMC helicopter with an operative IFF, was climbing to approximately 800'. V38/V39 were slightly above WH53/50 for the duration of the flight. [Encls 13, 14, 15, 16, 17, 18, 80, 81]

162. At 1908, radar data indicated that WH53 was between 400'-500'. [Encl 82]

163. At 1908:08, CG1705 was at 1000', heading 225 degrees at 184 knots, bearing 010 degrees and approximately 3.2 nm from V38. [Encl 81]

164. At 1908:08, V38 was at 800', heading 244 degrees at 113 knots. [Encl 81]

165. At 1908:08, V38 was 33 degrees left of CG 1705's nose. CG 1705 was approximately 126 degrees right of V38's nose. [Encl 81]

166. At 1908:25, after WH53 made the right turn, CG 1705 was at 1000' heading 225 degrees at 184 knots, bearing 009 degrees and approximately 2.7 nm from V38. [Encl 81]

167. At 1908:25, V38 was at 800', heading 259 degrees at 103 knots. [Encl 81]

168. At 1908:25, V38 was 36 degrees left of CG 1705's nose. CG 1705 was approximately 110 degrees right of V38's nose. [Encl 81]

169. At 19:08:56, Beaver advised CG 1705, "I have coordinates, advise when ready to copy," to which CG 1705 replied, "Ready to copy." [Encls 78, 79]

170. At 1909:06, CG 1705 was at 1000', heading 225 degrees at 180 knots, bearing 010 degrees and approximately 1.2 nm from V38. [Encls 81, 82]

171. At 1909:06, V38 was climbing from 800', heading 276 degrees at 109 knots. [Encls 81, 82]

172. At 1909:06, V38 was 35 degrees left of CG 1705's nose. CG 1705 was approximately 94 degrees right of V38's nose. [Encls 81, 82]

173. At 1909:06, WH53 was approximately 2.25 miles away from CG 1705 and approximately 35 degrees left of CG 1705's nose. CG 1705 was approximately 114 degrees right of WH53's nose. [Encls 81, 82]

174. At 19:09:08, Beaver began passing CG 1705 lat/long coordinates over the radio for SHOBA to keep CG 1705 out of the live impact area. [Encls 78, 79]

175. At 19:09:18, Beaver continued passing coordinates. [Encls 78, 79]

176. At 19:09:24, CG 1705's pilot acknowledged the first two corner points by stating "Roger." [Encls 78, 79]

177. At 19:09:27, Beaver began to pass a third corner point. [Encls 78, 79]

178. At 19:09:36, Beaver began passing a fourth corner point. [Encls 78, 79]

179. At 1909:37, CG 1705 and V38 collided. [Encls 13, 14, 78, 80, 81, 82]

180. At the time of impact the flight of four was heading 276 at 109 knots with WH53 at 900' and V38 at 1000'. CG 1705 was heading 226 at 184 knots and 1000'. WH53 was 0.766 nautical miles directly in front of CG 1705. V39 was 1.005 nautical miles at approximately the 9 o'clock position from CG 1705. [Encl 81, 83]

181. At 1910, LW55 (SH-60B working with USS CURTS) radioed FACSFAC to report an aircraft in the water. [Encls 79, 88]

182. The approximate position of impact was 33N 118W, 15 miles east of SCI. [Encls 81, 82, 87]

183. At 1911, FACSFAC FWS terminated conversation with CGD11 SARDO upon hearing that there was an aircraft in the water. [Encls 11, 42]

184. At 1911, WH53 and LW55 commenced search efforts. [Encls 15, 17, 88]

185. A roll call for all aircraft that were either radar identified or had been in communications with Beaver Control was initiated. [Encl 91]

186. At approximately 1940, the FACSFAC SD Radar Branch Chief arrived on the watch floor. [Encl 91]

187. At 1942 the SCORE controller overheard CG 6023 (a USCG helicopter that had been diverted to assist with the search) report a wheel and strut assembly in the water, which were not from a Cobra. [Encl 90]

188. At 2001, a CGD11 MISLE entry stated, "CAMSPAC air to ground confirm comms w/ CG 1705 is negative results." [Encl 4]

189. At approximately 2030 Air Station Sacramento confirmed the serial numbers on the landing gear in the water belonged to CG 1705. At this time all parties involved (Search Assets, FASCFAC, CGD11) realized that CG 1705 was additional mishap aircraft. [Encl 87]

190. A FACSFAC SD log entry was made at 2145 that documented, "confirmed midair collision between C1705 (C130) and Vengeance 38 (AH-1)." [Encl 84]

Post-Mishap

191. NAVAIR 00-80T-114 3.7.7 states the following regarding ATC Personnel Involved in a Mishap/Incident, "ATCP personnel who appear to have contributed to a mishap or an incident which jeopardizes safety of aircraft shall be temporarily relieved of operational duty and referred to a military flight surgeon for physical/psychological evaluation. This action is not to be considered as disciplinary or punitive action or in any way indicative that the controller was responsible for the mishap/incident. This removal is to permit preparation of facts and supporting data for an immediate facility investigation of the mishap/incident. Further, removal at this time is for protection of the naval service and the controller in the event human error existed or was caused by the controller's incapacity such as illness or extreme pressure. The relief from operational duty shall remain in effect until the ATCFO has determined the probability of controller involvement. If after a preliminary investigation the controller is found not responsible for or contributory to the mishap/incident, the controller will be returned to operational duty. If subsequent in-depth investigation reveals that the controller was responsible for or contributory to the error, the following actions shall be taken as a minimum prerequisite to reassignment to operational duty:

1. Detailed and complete review of the mishap/incident with the controller including a discussion of circumstances related to the mishap/incident.

2. Reevaluation of the controller on the position(s) to determine necessity for additional training.

3. If retraining is required, it should be conducted with particular emphasis on weaknesses revealed during investigation of the mishap/incident.

4. Satisfactory completion and documentation of the action outline in 2 and 3 above, including demonstration of skill level at least equal to that required for the appropriate portion of sector/position "checkout," is to be considered a recertification of control ability. [Encl 22]

192. ATCINST 3710.1A states the following concerning Controller Evaluation Boards, "The purpose of a controller evaluation board (CEB) is to conduct a training progress review of an individual receiving OJT or to evaluate a controller's involvement in an ATC accident or incident. Upon completion of the review the CEB shall forward a recommendation to the ATC Facility Officer regarding the disposition of the individual's training or qualification. [Encl 26]

193. Controller Evaluation Boards were conducted on AC1 [redacted], AC2 [redacted] and AC2 [redacted]. [Encl 93, 94, 95]

194. AC1 [redacted] and AC2 [redacted] had all air traffic control qualifications suspended. [Encl 96, 97]

Exe (b) (6)

195. A reinstatement training plan for AC1 [redacted] was authorized by the Air Traffic Control Facility Officer. [Encl 98]

196. The FACSFAC prospective Executive Officer completed a command initiated evaluation dated 15 Dec 2009 containing observations and recommendations to improve command performance of assigned missions. [Encl 99]

Opinions

1. The investigation concludes that no single factor or individual act of commission or omission caused this mishap. Rather, this mishap was the product of an unfortunate confluence of events, missed opportunities, and broken procedure/policy in airspace where most aircraft fly under a "see and avoid" regime (i.e., where it is incumbent on individual aircraft to ensure adequate separation from other aircraft). [FOF 1-196]

2. Neither CG 1705 nor Vengeance 38 (nor WH53 as the flight lead) were under positive radar control of controllers assigned to FACSFAC SD at the time of collision; as such these aircraft were not provided control instructions by air traffic controllers that resulted in the convergence of the two mishap aircraft. Additionally, there was no agreement made between aircraft and controllers that transferred responsibility for the safe navigation of the aircraft from the aircrews to an air traffic controller. [FOF 9-10, 13, 29, 41-42, 44, 94, 99-100, 136, 138, 144, 150-151]

3. CG 1705 and V38 (and to a certain extent the rest of the WH53 flight) failed to maintain the proper visual lookout to ensure necessary separation to prevent the midair collision. Both aircraft were operating under visual flight rules and were ultimately responsible for their own safety, navigation and separation from other aircraft. [FOF 9-10, 13, 28-30, 33, 35, 40, 43-44, 56, 94, 99-100, 136, 138, 144, 150-151, 171-173, 179]

4. Despite the fact that the Approach Controller (AP) had radar presentations that accurately depicted the presence of CG 1705 and WH53 (lead aircraft of the flight), he failed to recognize the convergence of these aircraft and failed to provide the necessary traffic separation notification through a safety alert to support prevention of the mid-air collision.

a. Just prior to the collision, the AP's perceived priorities, and hence focus, were to provide service to the departing FCLP F/A-18 aircraft then provide the coordinates of the SHOBA airspace to CG 1705 to deconflict its SAR search pattern with the soon to be "hot" operating area. In placing a higher priority on those F/A-18s, VFR off of SCI awaiting IFR pickup for the return to MCAS Miramar, and actually using his radar display to obtain the SHOBA area coordinates that he was providing to CG 1705 at the time of the collision, he failed to recognize the convergence of the tracks to allow for action to be taken to broadcast a safety alert notification to the aircraft.

b. While the digitized radar track presentation clearly identified CG 1705 and WH53, there was insufficient radar data presented to the operator to identify the location and projected movement of WH50, V38 or V39. Review of the radar display just prior to and at the time of the mishap showed the movement of the tracks of CG 1705 and WH53, and that CG 1705 was passing behind and opening WH53. This does not discount the fact that WH53 clearly stated upon check-in with Beaver that they were a division, and the controller should have accounted for the overall flight within the parameters of a standard formation. Had the last aircraft in the division been squawking a discrete code, the geometry of the flight would have been more easily identified to the controller. This might have provided greater awareness to the operator to signal him to make a traffic advisory or safety alert call to the affected aircraft.
[FOF 29, 30, 33, 35, 37-38, 53-57, 86-87, 94, 136, 138, 144, 150-181]

5. The presence of a separate and dedicated Radar Supervisor (RS) would have provided another level of oversight and experience. The improved awareness, management and direction by the RS may have likely resulted in the provision of appropriate air traffic control action to prevent the midair collision. This additional support may have ensured the watch team controllers' priorities were correct and that earlier identification of the converging tracks may have led to the appropriate traffic advisories and safety alerts. [FOF 30, 33, 35, 37, 86-87, 94, 136, 138, 144, 150-181]

6. It had become a FACSFAC SD pattern to combine the Facility Watch Officer (FWS) and RS positions, which is contradictory to its policy in the ATCINST 3710.1A that states, "To aid in providing safe and efficient ATC services, between the hours of 0800 to 2000 all operating positions shall be de-combined to the greatest extent practical." This was reinforced by the poor judgment call made by the FWS on duty at the time of the mishap to

release the only other qualified RS on the watch team, effectively committing himself to serve in both FWS and RS functions regardless of the operational situation in the FACSFAC OPAREAs. Recognizing that this needed to be corrected, FACSFAC SD issued a Facility Directive to the ATCINST 3710.1A to reset the policy concerning FWS and RS position combination. This updated guidance should be reconsidered; however, because it places the more stringent requirements on the 0800-1600 shifts and gives more latitude for the 1600-2230 shifts where it can be argued that see and avoid is more challenging for participating aircraft operating overwater at night than in the daytime. [FOF 30-31, 37, 61, 65-69, 76, 77-78]

7. The AP failed to provide an appropriate level of service to CG 1705 upon its final return to the W-291 airspace. The aircraft was not re-radar identified and a traffic advisory reporting the entry of the WH53 flight should have been passed. Had this occurred, the Assistant Approach Controller (AAP) would have become more engaged in monitoring the traffic situation to include creating an updated flight progress strip. This would have improved awareness of both the AP and AAP. More senior and experienced controllers state that as a matter of habit they provide a comprehensive assessment of the airspace in addition to those items required per the instruction and request each aircraft to state its intentions for all aircraft entering W-291 - workload permitting. [FOF 27, 37-39, 92-94, 111]

8. The AP failed to provide an appropriate level service to the WH 53 flight upon entry into W-291. The fact that an active SAR mission was being conducted by CG 1705 should have been provided to WH53 and shared with the entire flight. The aircraft was never in radar contact due to a late squawk assignment and lack of confirmation that the assigned beacon code was successfully activated. Had this occurred, the AAP would have become more engaged in monitoring the traffic situation to include creating a flight progress strip. This would have improved awareness of both the AP and AAP. More senior and experienced controllers state that as a matter of habit they provide a comprehensive assessment of the airspace in addition to those items required per the instruction and request each aircraft to state its intentions for all aircraft entering W-291 - workload permitting. [FOF 27, 37-39, 92-94, 111, 136, 138, 144]

9. Had both CG 1705 and the WH53 flight requested radar advisories and flight following they would have likely received a greater level of air traffic control service from the FACSFAC SD watch team. OPNAV 3710.7 states that, "where available, radar advisory service shall be requested especially when VFR flight is required through high-density traffic areas." The portion of W-291 where the midair collision occurred is cited in the range users manual as the "most congested air operating area within SOCAL."

a. While W-291 at the time of the mishap was not considered a high-density traffic area, participating aircraft in a Warning Area are unpredictable, especially those engaged in crew-workload intensive operational missions such as a SAR. This incident teaches that participating aircraft in various configurations (unaided vs. aided) and usually preparing to or actually performing in an operational or training mission profile can make

see and avoid that much more difficult. Couple this with the environmental challenges posed by operating overwater at night, the additional assistance provided by radar advisories and flight following greatly improves the ability to maintain adequate traffic separation.

b. W-291 is specifically delineated to provide the special use airspace for military aircrews to perform combat training missions. The flexibility to perform mission specific profiles in this airspace is not always conducive to utilizing air traffic control services to assist in collision prevention; however, consideration should be given to promoting the maximum use of ATC services to aircrews while transiting special use airspace. Once in exclusive use airspace or in to the actual mission profile, aircraft can than terminate services and assume the additional burden for separation.

c. IFR separation is typically more natural to a controller because aircraft operating in controlled airspace in the national airspace system are predictable and specific separation criteria exist. VFR separation criteria only exist in Class B and C (controlled) airspace. In all other airspace, including a Warning Area, no VFR separation criteria exist, and the aircraft are unpredictable because a controller typically does not have the intent of the aircrew.

d. A cultural barrier exists between aircrews and air traffic controllers in that the former typically desires (or even expects) the services when it doesn't interfere with the mission (flexibility) and the latter is reluctant to provide services because they are unsure of the aircrews' desire for them unless specifically requested (awareness of intent). The key to barrier removal is clear communications of intent and desire as well as an overall better appreciation for ATC by aircrews and flying by controllers.
[FOF 16-24, 27-45, 92, 110, 112, 136, 138, 144, 150, 151]

10. Both CG 1705 and the WH53 flight could have been more aggressive in ensuring they were in radar contact. In the case of CG 1705, the fact that they were on an operational mission and had been in and out of the airspace likely led to an expectation that they were receiving a requisite level of traffic separation services. WH53 was squawking 1200 and not the beacon code of 0653 assigned just prior to the midair collision. Had the radar identification process for WH53 been successful, it likely would have cued the AP to revisit the contacts of interest at a critical time, which may have yielded the traffic advisory or safety alert call. [FOF 42, 44, 110, 112, 136, 138, 144, 150-151]

11. An apparent disparity exists within FACSFAC SD Instruction 3120F, where it states the following: "the controller's number one priority is separation of aircraft and issuance of safety alerts;" and "FACSFAC does not provide separation of aircraft operating in airspace assigned jointly to different

units. Concurrent Use Airspace (CO-USE) operations are separated by the principle of 'see and avoid' under VMC [visual meteorological conditions]." This is not the case. The latter statement exists within a category titled separation where FACSFAC defines the different services a range user should expect in the different categories of separation - IFR arrivals and departures, CO-USE airspace, Exclusive Use airspace, IMC and Edge of Warning Area separation. The definition of services for common use airspace is realistic and in keeping with other governing air control guidance. There is no VFR separation criteria that exists for aircraft operating in a Warning Area, and if requested, aircraft will receive traffic advisories and flight following; however, this does not relieve the aircrew of the responsibility to "see and avoid" other traffic operating in the airspace. The explanation of services in this category should serve as a means to encourage aircrews to pursue radar advisory/flight following services as well as maintain the necessary vigilance, it does not signal a prioritization scheme for controller operations. That being said, ambiguity exists and this instruction is designed primarily for range users and should be explanatory and clear. [FOF 16-23, 28-44]

12. The guidance in the ATCINST 3710.1A Facilities Manual and FACSFAC SD 3120.1F Range Users Manual regarding relative prioritization of activities in W-291 is insufficient for effective management of assigned airspace and to provide procedural and training guidance to FACSFAC SD supervisors and operators. FAA JO 7110.65S directs facilities to, "provide maximum assistance to SAR aircraft performing a SAR mission." The operational priority for a SAR mission follows only an aircraft emergency and an air/medical evacuation mission. Though the FACSFAC SD 3120.1F Range Users Manual states that operational missions (to include SAR) will preempt Fleet OPAREA activities, it is really only discussed in terms of scheduling priorities not for effective real-time management of the airspace. SAR missions are unscheduled events, and sufficient guidance must be available to provide the Facility Watch Supervisor the authority and guidance to effectively manage the airspace to meet the prioritized requirements, regardless of the origin of the airborne SAR assets (from within W-291 or from outside the airspace). The FACSFAC VACAPES 3120 series instruction provides clear guidance to allow for better management of concurrent operational missions and training evolutions. On average, approximately 10-15 SAR missions that involve air assets occur in W-291 each month. There is an urgent need to ensure governing policy exists in local directives and that supervisors and operators are aware of their authority and responsibilities. [FOF 38, 46-52]

13. The FWS failed to maintain adequate awareness of W-291 airspace and take effective action to sufficiently deconflict the airspace to accommodate the numerous competing events at the time of the mishap. The FWS was not fully confident in his authority or ability to effectively deconflict or clear the airspace to support the CG 1705 SAR mission, which he ultimately determined was the highest priority just prior to the mishap. Though this authority is specified in NAVAIR 00-80T-114 it was not exercised by the FWS. Furthermore, the general and specific local position responsibilities are not included in the FACSFAC SD ATCINST 3710.1A Facilities Manual. FACSFAC SD needs subordinate activities (SCI and SCORE) as well as range users to know

that the Facility Watch Supervisor, acting on behalf of the FACSFAC SD CO, is the controlling authority for the airspace. If airspace deconfliction proves too difficult, then the FWS needs to make a cancellation determination and ensure implementation. Had the FWS reached this conclusion earlier in his watch, more effective deconfliction or a decision to terminate the FCLP training at SCI and the live fire event in SHOBA would have removed the competing traffic from the airspace required to support the CG 1705 SAR mission. [FOF 10, 13, 18-19, 24, 25-26, 30, 37-38, 46-49, 61, 91, 94, 104-107, 119-124, 126-128, 132, 136-190]

14. Though frequent interaction took place between Coast Guard District Eleven (CGD11) and FACSFAC SD (to include subordinate airspace and range supervisors) to coordinate the airspace to accommodate the assigned search pattern for CG 1705, it was extremely inefficient and ultimately ineffective. CGD11 clearly had an expectation from the beginning that all scheduled training activity in W-291 would be secured to support the CG 1705 SAR mission. CGD11 was aware of the scheduled activities in the hot areas to include the event on the SHOBA range. Numerous interactions took place among CGD11 watchstanders, CG 1705, FACSFAC SD watchstanders, SCORE watchstanders and SCI tower personnel as the northern portion of the CG 1705 search pattern crossed numerous ranges and SCI controlled Class D airspace. The coordination process was inefficient and at times confusing due to the various entities involved. A single CGD11 representative and the FWS should have been the primary link for coordination, and the FWS should have been the primary conduit to subordinate range and airspace controllers. Had a SAR pattern overlay (enclosure 8) been passed to the FWS, much better coordination would have ensued since the FACSFAC team would have had a better understanding of the CG 1705 flight profile intentions. Even if the pattern changed, an updated overlay or modifications to the original pattern would have provided the supervisory element in the FACSFAC radar operations control center better awareness to allow for more effective airspace deconfliction. Had the two command and control centers looked at this overlay prior to the arrival of CG 1705, they could have discussed a number of options to allow for execution of the SAR mission while readjusting scheduled training events. One option would have been a discussion of the SAR pattern beginning in the southwest corner and proceeding north. Better understanding of the requirements from both the Coast Guard and FACSFAC perspective could have led to an effective deconfliction scheme or a clear determination that training needed to be rescheduled or cancelled outright. The level of external coordination required for the FWS during this watch is another reason why the FWS and RS positions should have been de-combined. [FOF 1-10, 16, 19, 24, 25-26, 29-31, 37-38, 46-49, 52, 101-111, 114-117, 119-128, 130, 132-133, 135, 137, 139, 141-143, 145-147, 150-152, 155-156, 169, 174-178, 183]

15. Overall FACSFAC and watch team manning were adequate to support the 29 Oct 09 1400-2200 watch rotation; notwithstanding the FWS' poor decision to release another qualified FWS/RS at the mid-point of the watch. FACSFAC has had to compensate for the unplanned loss of the ATC Facility Officer and for its fair-share of providing Individual Augmentation personnel to GWOT missions affecting commands across the Navy. [FOF 58-71, 76]

16. Insufficient evidence exists to support the possibility that the

Facility Watch Supervisor's crew day and the effects of Novocain significantly affected his judgment and supervisory performance. Though not in violation of crew rest policy per governing directives, he had been in a duty status for 12.5 hours at the time of the mishap. The extent to which the Novocain had physical effects on the FWS is hard to determine. Per the policy in the NAVAIR 00-80T-114, the Novocain shot could technically qualify for a 24-hour grounding period because it is a sedative-type drug. OPNAV 3710.7 calls for a 12 hour grounding period if Novocain is administered to aircrew. An expert medical assessment yielded an opinion that a Novocain shot alone is not a reason for grounding. Nonetheless, this represents a command procedural and training deficiency in which a supervisor was unaware of the policy in the governing directive and should have requested command or flight surgeon guidance prior to executing the watch assignment. [FOF 69, 71-75]

17. Insufficient evidence exists to support the possibility that the Approach Controller's human factors significantly affected his judgment and performance. [FOF 69, 71]

18. The structure of the FACSFAC training program is sound and is in accordance with the appropriate guidance in NAVAIR 00-80T-114; however, numerous training deficiencies have been revealed as a result of this mishap. These deficiencies include areas that contributed to supervisory, coordination, and controller performance inefficiencies and ineffectiveness.

a. Qualification standards should be scrutinized to ensure that only the requisite numbers of Facility Watch Supervisors are qualified and that the process is rigorous enough to support the responsibility required of the position.

b. A cultural issue within the ATC community was discovered. Some junior and less experienced controllers tend to believe that IFR services are seen as having a priority over VFR services. In this case, the approach controller's focus on getting F/A-18s operating VFR on to an IFR clearance to return to base detracted from overall airspace awareness. Scope vigilance requires that all tracks be given the due regard when lateral and vertical convergence becomes apparent. The FACSFAC training chief went so far as to say this is a, "cultural misunderstanding bred through the ranks." This can be interpreted as something introduced early in formal training and validated by local command training. Every senior controller interviewed recognizes this deficiency and states a firm commitment to ensure this misperception is corrected.
[FOF 77-83]

19. All FACSFAC radar systems and communications equipment were checked to be fully operational prior to and throughout the 1400-2200 shift on 29 October 2009, with one exception. The recording capability for the watch floor land-line telephone was discovered to be inoperative and has subsequently been repaired. It is now checked prior to each watch rotation. Additionally, an enabled FACTS system collision detection capability may have

provided improved awareness to the operator to make a traffic advisory or safety alert call. This capability is currently disabled because if serves as more of a distraction to an operator than an aid -- the number of "false alarms" would likely mask a legitimate signal in the current software configuration. [FOF 84-85, 191-196]

20. Though the majority of post-mishap responsibilities per the governing directives were completed by FACSFAC SD, some areas of concern surfaced including the following:

a. Though it was reported that a roll call was initiated to determine the identification of the mishap aircraft, it took a great deal of time to conclude that CG 1705 was indeed one of the mishap aircraft.

b. Though directives call for any controller suspected of being involved in an aircraft accident to be relieved as soon as practical, neither the FWS/RS nor AC were relieved from their positions for over two hours after the mishap event.

c. Inability for the applicable watchstanders to complete the requisite medical requirements. This issue should have been brought to the attention of FACSFAC and NAS North Island Medical leadership and corrected immediately.
[FOF 87-98, 185, 187, 188-190]

21. FACSFAC SD has taken steps to improve command performance of assigned missions per governing directives and command initiative; however, more will be required once all pertinent investigations are published. [FOF 66, 83, 191-196]

Recommendations

1. FACSFAC SD should conduct a critical and comprehensive review of its command instructions, especially the FACSFAC 3710.1F and ATCINST 3710.1A. The subsequent update should address the following salient topics: position roles and responsibilities, FWS coordination with external agencies, airspace prioritization, and search and rescue responsibilities for cases where the USCG is SMC, where FACSFAC SD is the SMC and for self-contained events where ships use organic air assets to conduct the mission. [Opinions 4-9, 11-14, 16]

2. FACSFAC SD should revisit ATCINST 3710.1A to ensure that policy guidance for combining positions is effective in achieving the mission of providing safe, effective and efficient air traffic control services; and sufficient rationale exists for every occurrence of position combination. [Opinions 5-6, 13]

3. FACSFAC SD should standardize and implement improved aircraft check-in procedures with Beaver Control to ensure that aircraft provide all the requisite information to controllers to include intentions and request for services and controllers provide a more comprehensive assessment of the

airspace picture. Consideration should be given to communicating those unique mission situations such as formation flight composition (standard vs. non-standard), use of night vision devices or any other points which would improve controller awareness. [Opinions 4,7-10]

4. FACSFAC SD should clearly define command, control and coordination relationships with subordinate commands and controlling agencies that provide air traffic control service in adjacent or embedded airspace. [Opinions 12-14]

5. FACSFAC SD and CGD11 should improve and standardize coordination procedures for active SAR missions in FACSFAC controlled special use airspace. As such, recommend frequent liaison and familiarization between CGD11 and airspace control agencies. Additionally, a face-to-face meeting between a prospective FWS and the CGD11 command center staff should be considered as a local qualification standard requirement. Reciprocal arrangements should be made for prospective CGD11 watchstanders holding equivalent positions. [Opinions 13-14]

6. FACSFAC SD should rewrite the FACSFAC SD 3710.1F section 2.14.5 regarding separation. It is also recommended that a corresponding section of the ATCINST 3710.1A also be added to dispel any misunderstanding of correct ATC priorities and procedures. This section of the range users manual should provide clear expectations of service for users while the facilities manual should provide clear guidance for the controllers. Both of these documents should be consistent to minimize any confusion. [Opinion 11]

7. OPNAV N885, TYCOMs and subordinate commands that possess air traffic control responsibilities review all policies and procedures to ensure compliance with governing FAA directives, guidance, and policy. Ensure this guidance is clearly articulated in publications and instructions designed for both facility/command operations and heightened airspace user compliance and awareness. [Opinions 4-9, 11-14, 16, 18-20]

8. OPNAV N885, TYCOMs and subordinate commands that possess air traffic control responsibilities review all directives to ensure standardization in all applicable common policy and procedural areas. FACSFAC SD, FACSFAC VACAPES and FACSFAC JAX should all have standardization in core mission areas affecting facilities management and service provision procedures not specific to their unique operating areas and environments. [Opinions 4-9, 11-14, 16, 18-20]

9. All FACSFACs should discuss the policy for transponder assignment(s) for large or loose formations in special use airspace, especially given the limitations associated with primary radar returns. Screen clutter and impacts on display ranges have been cited by controllers as issues and should be considered during these discussions. Consideration should be given to making this an option that can either be requested by the flight leader or recommended by the air traffic controller. Current or amended policy guidance should be included in the applicable range user manuals (FACSFAC SD 3710.1 series) to ensure that military and government users are aware of the ATC facility capabilities and limitations to provide advisory services for large

formation flights or those that involve large separation distances between aircraft. [Opinion 4]

10. FACSFAC SD must apply greater rigor at all levels of training, especially qualification and designation standards, with emphasis in the following areas: supervisory functions of the FWS and RS, external coordination responsibilities of the FWS, understanding and due regard for the prioritization and special handling of operational missions, controller prioritization for airspace management, and policy interpretation regarding physical and mental suitability to perform the mission. FACSFAC SD should conduct a thorough review of all formal and informal training practices to address any actual or perceived deficiencies in supervisory or controller functions. [Opinions 4-21]

11. Results of this mishap should be evaluated to determine if any urgent equipment status upgrades should be made to FACSFAC operating and communications systems to improve effectiveness in mission accomplishment. [Opinions 4, 19]

12. FACSFAC SD should promote and provide greater awareness of services, capabilities and limitations to range user commands through FACSFAC SD hosted visits, user site visits, and improved command published materials (range users manual, kneeboard cards, etc.) [Opinions 4, 8-12, 14]

13. All investigative reports from this mishap should be briefed to all FACSFAC user commands, all military air traffic control facilities/commands, and all air traffic control training commands. [Opinions 1-21]

14. FACSFAC SD should consider establishing a human factors council and human factors board process to better determine the physical and mental fitness of all watchstanders to effectively perform the mission. A successful program should serve as a model for other ATC facilities/commands. [Opinions 16-18]

15. FACSFAC SD should create a pre-mishap plan to include an execution checklist per NAVAIR 00-80T-114 and the OPNAV 3750.6 series. Overarching policy guidance should be reviewed to ensure a consistent core standard across all air traffic control facilities/commands as applicable. [Opinion 20]

Exe (b)6)