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USMC FIRE AND EMERGENCY SERVICES: A COMPARATIVE BUSINESS CASE ANALYSIS

by

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December 2005

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This Business Case Analysis examines and compares organizational alternatives for providing Fire and Emergency Services (F&ES) for the United States Marine Corps. A number of initiatives are in progress to improve resource use within DoD and each military service. Moreover, recent federal legislation identifies DoD emergency services within the scope of these initiatives.

This report analyzes the organizational structure of Marine F&ES to establish effectiveness and output measure baselines. It then compares the baselines with effectiveness and output measures of organizational alternatives. The viable alternative, a consolidated F&ES structure, shows potential to reduce labor costs and enhance emergency service capability.

Considering the critical contributions of Marine F&ES to installation and contingency operations, the author recommends a combined Aviation/Ground stakeholder review of Marine F&ES consolidation as part of ongoing force optimization and enhanced force protection initiatives. The labor efficiencies and enhanced emergency service postulated through F&ES consolidation propose significant net gains for the Marine Corps.

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USMC FIRE AND EMERGENCY SERVICES: A COMPARATIVE BUSINESS CASE ANALYSIS

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- MCAS Yuma Aircraft Rescue Firefighting and MCAS Yuma Fire Department
- Naval Air Station Lemoore Fire Department

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Captain James P. Ankney, United States Marine Corps, is currently a student in the Graduate School of Business and Public Policy, Naval Postgraduate School, Monterey California, majoring in Acquisition and Contract Management. Commissioned in April of 1996, he completed undergraduate studies at Florida State University in Tallahassee, Florida. Prior to his current assignment, Captain Ankney served in Logistics, Supply, and Staff billets within the III Marine Expeditionary Force, Okinawa, Japan from May 1999 through May 2004.

Captain Ankney began his Marine career in Aircraft Rescue Firefighting (ARFF). In November 1993, he was the honor graduate of the ARFF Training Class, Naval Air Station Millington, Tennessee. Upon graduation, he was assigned to Headquarters and Headquarters Squadron and Marine Wing Support Squadron 171, Marine Corps Air Station Iwakuni, Japan from December 1993 to November 1994. During this time he served as a crew chief for the AS32P-19A, and in ARFF rescue billets supporting installation and forwardly deployed aviation operations. Subsequent to this assignment, he was stationed aboard Marine Corps Air Station Quantico Virginia from December 1994 to January 1996, serving again in crew chief and rescue billets, and also as an Emergency Medical Technician (Basic) and P-26 water tanker crew chief.

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I. BOUNDARIES OF THE BUSINESS CASE

A. GOALS AND VISION

Much common familiarity regarding Defense optimization efforts is associated with the 2005 Base Realignment and Closure (BRAC) review. While the BRAC process serves as a clear example of efforts to achieve better use of limited DoD resources, this process is one of several major ongoing Defense Transformation initiatives.[1] Likewise, optimization of installation support services is clearly a priority for DoD and each of the services.[2]

Efficiencies gained in installation support may contribute to increased resources available to Combatant Commands and warfighting efforts. Therefore, efforts to optimize installation support services can be expected to continue.

As part of the optimization of installation support services, changes in operational concepts (organizational change/restructuring) may prove valuable for increasing organizational efficiency and increasing program effectiveness.[3] This process involves the identification of organizational, program or installation redundancies and consideration of alternatives.

Appendix I provides an overview of the Defense Transformation Act (DTA), with specific focus on optimization initiatives. The DTA legislation identifies

[1] Jones, L.R., *Transformation of National Defense Business Management: Current Initiatives and Future Challenges*, p. 14

[2] Government Accountability Office (GAO). (1997). *Defense Outsourcing, Challenges Facing DoD as It Attempts to Save Billions in Infrastructure Cost,* p. 5

[3] Office of Force Transformation. Office of the Secretary of Defense. (2003). *Military Transformation, A Strategic Approach,* p. 27

measures to gain efficiencies in DoD Fire and Emergency Service (F&ES) programs (through consideration of the proposal to allow for the commercial sourcing of F&ES alternatives.)[4] This Appendix also provides an overview of Navy and Marine Corps published strategies that stress optimization initiatives. The service strategies examined do not exempt any Navy or Marine Corps functions from the scope of efforts to gain functional area efficiencies or increased effectiveness.

Considering DoD's continued emphasis on optimization, and service publications that support this overall effort, this Business Case Analysis (BCA)[5] supports DoD and U.S. Marine Corps optimization strategies by examining alternative organizational structures to support Marine Corps Emergency Services. The primary research questions posed by the author include:

- What alternative organizational models are viable for supporting Marine F&ES operations?
- What are the costs and benefits of the current Marine F&ES organizational structure?
- Of the viable alternative models, what are the costs and benefits associated with each, and how do they compare to the costs and benefits of current Marine F&ES organizational structure?

Marine installation emergency services differ from Naval and Air Force installation emergency services in that each Marine installation supporting aviation operations, in

[4] General Counsel of the Department of Defense. (2003). *The Defense Transformation For the 21st Century Act,* Section 211

[5] United States. Department of Defense. Deputy Under Secretary of Defense, Logistics. (1999). *Business Case Model for the DoD Logistics Community: A Guide to Business Case Development,* Retrieved June 7, 2005 from *http://www.acq.osd.mil/log/logistics_materiel_readiness/organizations/lpp/assetts/product_support/final%20bcm.pdf*

whole or part, maintains two separate fire departments.[6] Comparatively, Naval and Air Force installations maintain one department per base. Therefore, there is some appearance of capability duplication. However, more detailed analysis of the single and dual department emergency service structures is required to compare costs and benefits, as well as to understand the implications associated with Marine F&ES organizational change.

This analysis is therefore focused on providing the following:[7]

- Credible assessment of alternative strategies for supporting Marine emergency services.
- Clear rationale for the methodology for assessing each alternative.
- Valid, transparent and persuasive analysis for reviewing agencies.

Should the analysis demonstrate a net benefit[8] of the current Marine emergency service organization, it may serve to assist efforts to avoid future changes to the current F&ES organizational structure. Conversely, should the analysis demonstrate net benefit to be gained from F&ES organizational change, it may serve as a basis for further examination of F&ES alternatives.

B. CONTEXT AND PERSPECTIVE

The specific identification of “what is” and “what is not” being considered in the scope of this analysis, along

[6] Civil Service staffed Structural Fire Departments (SFD), Marine staffed Aircraft Rescue Firefighting (ARFF) Departments

[7] Franck, R., (2004). *Business Case Analysis and Contractor vs. Organic Support: A First Principles View,* p. 27

[8] The aggregate value of benefits of an alternative less costs associated with the alternative

with an overview of the methodology applied by the author is essential to establish a proper context and perspective. This section identifies the geographic scope of the analysis, costs aspects included and excluded in the analysis, the comparative methodology applied in this examination and an overview of the stakeholders (those potentially impacted by Marine F&ES change and those that most significantly contribute to the consideration of proposed alternatives).

1. Geographic Scope

The scope of this examination applies to consideration of examining emergency service organizational alternatives for the following Marine Air Stations/Bases/Facilities[9]:

- MCAF/MCB Quantico, Virginia
- MCAS Beaufort, South Carolina
- MCAS New River, North Carolina
- MCB/MCAS Camp Lejeune, North Carolina
- MCAS Cherry Point, North Carolina
- MCAS Yuma, Arizona
- MCAS Miramar, California
- MCB/MCAS 29 Palms, California
- MCB/MCAS Camp Pendleton, California
- MCB/MCAF Kaneohe Bay, Hawaii

Considering organizational change (namely F&ES consolidation) in Japan (MCAS Iwakuni and MCAS Futenma) may

[9] Each of these installations maintains the dual Structural/ARFF F&ES organizational structure.

not be feasible due to the reliance on approximately 220 Japanese Nationals for Structural Fire Department (SFD) staffing. With Japanese staffing, a tremendous communication barrier exists that would prove difficult, if not impossible for a consolidated department to overcome. This suggestion conflicts with the Navy's bilingual F&ES communications requirement.[10] However, the author maintains this position due to the difficulties associated with Japanese/English bilingual communications.

2. Costs Examined

Fire protection is highly labor-intensive. In Fiscal Year 2002, approximately 86% of Marine emergency service spending was attributed to labor. Comparatively, 1% of total F&ES spending was attributed to equipment, and 6% on supplies.[11] Accordingly, cost effectiveness means ensuring F&ES manpower is utilized efficiently. Therefore, this analysis focuses on potential F&ES labor efficiencies (management and administration, fire prevention personnel and firefighters) subject to avoidance of significant negative impact to Marine F&ES capability. Costs associated with training and procurement of Personal Protective Equipment (PPE) will be reviewed as well, as both the training and equipping of individual firefighters are certainly costs associated with changes in work force organization.

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[10] Department of the Navy, Office of the Chief of Naval Operations. (2004). *OPNAVINST 11320.23F CH-2*, p. 12

[11] USMC FY 2002 F&ES Spending (excluding minor spending categories) retrieved April 6, 2005, from https://powerplay.hqmc.usmc.mil/cognos/cgi-bin/upfcgi.exe

Command	Total Spending	Personnel	Equipment	Supplies
MCLB Albany Activities	$ 1,812,259	$ 1,698,792	$ -	$ 17,034
MCB Camp Butler Activities	$ 9,084,518	$ 7,889,077	$ -	$ 974,149
MCRD San Diego Activities	$ 82,793	$ 74,533	$ -	$ -
MCAS Cherry Point Activities	$ 3,578,970	$ 3,135,051	$ -	$ 363,297
MCLB Barstow Activities	$ 4,062,114	$ 3,597,370	$ 136,244	$ 97,975
MCAS Beaufort Activities	$ 1,387,429	$ 1,320,956	$-	$ 30,121
MCB Camp Lejeune Activities	$ 9,039,631	$ 8,362,500	$ 350,627	$ 255,295
MCAS Miramar Activities	$ 3,672,413	$ 3,135,865	$-	$ 482,945
MCAGTFTC 29 Palms Activities	$ 3,255,832	$ 3,114,486	$ 51,450	$ 56,139
MCAS Iwakuni Activities	$ 5,441,759	$ 2,745,744	$ 5,574	$ 467,571
MCB Quantico Activities	$ 4,710,793	$ 4,532,656	$ -	$ 157,187
MCAS Yuma Activities	$ 2,464,347	$ 2,296,152	$ -	$ 117,275
MCB Camp Pendleton Activities	$ 10,142,884	$ 9,325,350	$ -	$ 650,317
MCB Hawaii Activities	$ 46,210	$ -	$ -	$-
MCRD Parris Island Activities	$ 2,795,822	$ 2,629,716	$ 100,057	$ 22,595
MCAF Quantico Activities	$ 185,195	$ 184,338	$ -	$ 857
Marine Barracks 8th and I Activities	$ 110,135	$ 110,135	$ -	$ -
MCAS Camp Pendleton	$ 2,625,425	$ 1,278,450	$ -	$ 66,277
USMC Headquarters Activities	**$ 64,498,528**	**$55,431,170**	**$ 643,952**	**$3,759,031**

Table 1 - USMC FY 2002 F&ES Spending

Costs and potential savings related to Operations and Maintenance (O&M) are not included in this analysis due to their relatively small percentage of expenditure totals. Additionally, costs and possible economies associated with end items (rescue vehicles, water tenders, etc…) and infrastructure (facilities) that may result from organizational change are not projected as these costs are sunk (Costs for these end items and infrastructure were incurred in the past. Also, they are unlikely to change regardless of present decisions).

3. Comparative Methodology

This analysis reviews Marine, Navy, Air Force, and Private Industry emergency services to establish

alternatives. United States Army F&ES has been specifically excluded from this analysis as the Army lacks operational emphasis on tactical fixed wing aircraft, a common denominator shared by Marine, Navy and Air Force operations and a shared emergency service requirement. The Private Industry review is included as part of Appendix VII, which examines commercial F&ES operations supported in contingency environments.

The military reviews are conducted at two levels, both macro (armed service) and micro (installation). Appendix II and III provide the macro and micro examinations, as several sections of this business case reference them as supporting material.

The macro (armed service) level review examines overarching DoD and corresponding Marine, Navy and Air Force F&ES directives, to identify published operational and optimization requirements among the three services. The micro (installation) level review is based on Site Visits conducted by the author to six DoD Fire Departments within California and Arizona (4 Marine Corps, 1 Air Force and 1 Navy). The Site Visits were completed to compare and contrast emergency service organizational structures, core capabilities and resource inputs. Moreover they provided an opportunity for direct input from each service F&ES community regarding costs and benefits of their respective organizational arrangements.

4. Stakeholders

Identification of key stakeholders that influence or may be affected by changing the organization of Marine

Emergency Services is an important aspect of establishing the context and perspective.

Stakeholder segments include three general groupings: those impacting the macro administration of emergency services (Tier 1), those who serve as F&ES providers (Tier 2) and potential consumers of the service itself (Tier 3). To examine how these segments might perceive Marine F&ES organizational change, the following table identifies each stakeholder group and postulates the reception of F&ES organizational change as either “Pro, Mixed, Opposed or Neutral.” Without completing an actual survey within Tier 1 and 3, stakeholder analysis of these segments relied on the author’s research.

Stakeholders	Likely Perception of Organizational Change	Remarks
DoD Senior Leadership Tier 1	Pro	Emphasis of DTA[12]; change promotes force optimization
Marine Corps Senior Leadership Tier 1	Mixed	Organizational change may support published Marine optimization strategies[13]; Concerns with risks posed by organizational change
Marine Corps Aviation Senior Leadership Tier 1	Mixed	Same as 2.
Air Station & Base Commanders Tier 1	Mixed	Same as 2.
Marine Wing Service Support Squadron Commanders Tier 1	Mixed	Same as 2
American Federal Government Employee Union Tier 1	Mixed	See Appendix V
Marine ARFF OIC's, Civil Service Department Chiefs Tier 2	Opposed	See Appendix VI
Firefighters (Military & Civil Service) Tier 2	Mixed	See Appendix III
Marine & Transient Pilots Tier 3	Neutral	Premium on speed & capability regardless of organizational structure
F&ES Consumers– Tier 3	Neutral	Same as 6. Includes all personnel working and or living on applicable installations.

Table 2 - Stakeholder Identification & Perceptions

The critical nature of emergency services requires detailed examination of the current Marine F&ES organizational structure and alternatives to provide Tier 1 and 2 stakeholders with an accurate and comprehensive review of the costs and benefits associated with each alternative.

The current dual organizational structure of Marine F&ES has been in place for decades, and has proven

[12] *Defense Transformation for the 21st Century Act, (2003)*

[13] *Concepts and Programs 2005*, retrieved October 12, 2005 from http://hqinet001.hqmc.usmc.mil/p&r/concepts/2005/TOC1.HTM

successful in supporting both installation and deployed Marine operations. The difficulty encountered in this business case analysis was providing an overall review of potential gains and losses, both tangible and intangible associated with the alternatives.

C. FUNCTIONAL PERFORMANCE METRICS

Not everything that counts can be counted and not everything that can be counted counts.

-Albert Einstein

Throughout the DoD, effective F&ES ultimately means accomplishing the same shared objectives[14];

- Force protection,
- Safeguarding government infrastructure and assets.

Arguably, Marine, Navy and Air Force F&ES organizations accomplish these objectives daily in a highly professional manner. However, more careful consideration of performance measurement[15] means examination of both specific capabilities provided and resources required by each alternative.

More simply stated, comparing the performance of organizational alternatives that provide fire and emergency services entails metrics that can be applied to each F&ES organizational alternative. *Business Case Model for the DoD Logistics Community: A Guide to Business Case Development*

[14] Appendix II (Armed Service F&ES Review)

[15] The assessment of effectiveness and efficiency of activities, operations and processes in support of achievement of an organization's missions, goals and quantitative objectives through the application of out-based, measurable, and quantifiable criteria, compared against an established baseline.

identifies four classes of performance measures used in both functional and economic analysis within DoD:

- An outcome measure assesses actual results, effects, or impacts of a program activity.
- An output measure describes goods or services produced and the actual level of activity recorded or effort that was realized.
- An efficiency measure is a ratio of inputs to outputs.
- An effectiveness measure should identify critical characteristics of the output that meet customer requirements.

The metrics the author has applied in this analysis include *Effectiveness Measures* and *Output Measures.*

1. Effectiveness Measures

Effectiveness measures identify critical characteristics of the outputs that meet customer requirements. The critical characteristics pertaining to this business case are emergency service *core competencies.*[16]

For each of the alternatives examined, F&ES core competencies are identified through examination of department mission responsibilities. Once identified, core competencies will be measured against an installation's emergency service operating requirements to derive a core competency percentage.

[16] Areas of specialized expertise that are fundamental to a particular job or function.

2. Output Measures

The second measure applied by the author is an examination of Output Measures associated with each F&ES organizational arrangement. This measure describes the service produced and the actual level of activity recorded or effort that was realized in execution of the function examined. The level of activity or effort measured is the costs of the labor input required to support a given F&ES organization.

Within DoD there are three distinct labor components common to each F&ES structure[17]; (1) Management and Administration, (2) Fire Prevention, and (3) Fire and Emergency Service personnel (firefighters). In general, DoD Instruction 6055.6 (DoD Fire and Emergency Services) and subordinate Marine, Navy, and Air Force F&ES directives delineate staffing for each F&ES labor component:

- Emergency response personnel authorized in each fire department are based on the number and type of emergency vehicles needed to meet fire flow and travel time response requirements.[18]
- Fire prevention personnel are based on the size of the installation (space requiring fire risks surveys in thousand of square feet).
- Fire department management and administration staffing are based on the size of the department.

[17] United States. Department of Defense. (2000). *Department of Defense Instruction 6055.6, DoD Fire and Emergency Services Program*

[18] Determination of number and types of emergency vehicles and fire flow requirements are based on operational and geographic assessment of individual DoD installations. See DoDI 6055.6 for specific requirements.

Emergency response and fire prevention staffing remain relatively fixed subject to unchanging fire flow, response time requirements and unchanging amounts of space requiring fire risks surveys. However, department management and administration staffing depends not only on the size of the department, but also on how many departments an installation maintains. Appendix IV provides a detailed overview of the DoD F&ES staffing requirements for all military services.

For each organizational alternative examined, a model depicting management and administration, fire prevention, and firefighter staffing has been provided. The models provide an estimated total annual labor costs for comparison. Staffing of each alternative is based in accordance with DoDI 6055.6 requirements.

D. INITIATIVES CONSIDERED

Improved efficiency in Marine Corps emergency services is not a novel concept. This section reviews past organizational change initiatives and the outcomes.

The 1997 Marine Corps Active Duty Force Structure Review Group (ADFSRG) identified possible savings from integrating Marine aviation and structural firefighting.[19] The ADFSRG proposed merging the two separate fire and emergency service organizations (ARFF and Structural Fire Fighting) at each installation. The ADFSRG estimated integration would save 20% of the station ARFF billets and 10% of the civilian Structural Fire Fighting (SFF) billets. The Commandant of the Marine Corps approved the recommendation of the ADFSRG, but provided additional

[19] Appendix V provides the 1998 Process Action Team Final Report

guidance to study the integration due to the varying fire and emergency service requirements at Marine bases and stations. With this guidance, a Process Action Team (PAT) was formed to conduct the study and prepare the final report.

After conducting extensive site visits of ten Marine Corps installations, the PAT concluded consolidation of Structural and ARFF departments was feasible and provided needed personnel savings for reinvestment and modernization. Moreover, the PAT recommended a reduction of 23 civil service and 92 uniformed Marine firefighting positions.

Although the final PAT report includes identification of advantages, disadvantages, issues for consideration, command perceptions on the initiative and conclusions and recommendations associated with Marine F&ES consolidation, the PAT report has at least five shortcomings:

- The omission of estimated costs savings projections to be gained by consolidating Marine fire departments.
- Specification of billets in each department to be eliminated.
- Full statement of costs and benefits of the dual and consolidated F&ES organizational structures.
- Comparative assessment of current Marine F&ES to viable armed service alternatives.
- Measurement and mitigation of risks associated with consolidation of Marine F&ES.

The PAT report did not result in changed organizational structure for Marine F&ES. Insufficient detail, coupled with concern for operational risks by Tier I stakeholders and Tier II opposition resulted in status quo.

In addition to this historical perspective, research indicates that concerns with F&ES organizational change remain within Tier II. Personal interviews (with two Marine ARFF Officers-in-Charge and two Marine Installation Civil Service Fire Chiefs) and e-mail responses to a questionnaire circulated by the author within Tier II demonstrate continued concerns with Marine F&ES organizational change. (Statistics pertaining to the questionnaire and responses are included for review as Appendix VI).

Tier II leadership concerns regarding potential Marine F&ES organizational change provide a “road map” of issues for further examination during the evaluation of alternatives. Although there are concerns stated with organizational change, it should also be noted that Tier II stakeholders cited significant potential benefits to F&ES organizational change as well.

E. ALTERNATIVES CONSIDERED

This Business Case Analysis will examine five alternatives for supporting Marine emergency services:

1. Status Quo (dual ARFF & SFD)
2. Military Departments
3. Civil Service Departments
4. Outsourced Departments
5. Consolidated Departments

The examination of the current “status quo” or “as-is” organizational arrangement (the dual department structure) provides a baseline of costs and performance objectives to readily compare alternatives.

F. KEY ASSUMPTIONS

There are several key assumptions in this analysis. The first is that enhancement of F&ES core capabilities result from emergency service training, education and operational response. To illustrate this point, consider several functions that rely on years of training coupled with experience to develop core competency expertise: surgery, home construction and software engineering. Although training and certification provide essential credentialing and skill development in these functions, (the performance of surgery, the building of homes, and the development of software) repeated execution of these duties by doctors, contractors and technical engineers develops the core competency expertise highly sought and relied on in the commercial sector. The same is true and especially critical in emergency services: training and certification coupled with actual emergency response provides for F&ES expert core competency enhancement.

Second is acceptance of labor cost metrics applied to uniformed Marine and civil service firefighters. Estimated 2005 Chief of Naval Operations (CNO) distributed end strength rates have been applied to measure the labor cost for each military firefighter.[20] This measure delineates

[20] (2004). Military Personnel, Navy (MPN) Workyear and End Strength Rates for January 2004 Update of the Department of the Navy Future Years Defense Program (FYDP)

non-rank specific estimated costs for pay and allowances for officers and enlisted personnel as follows:

- 2005 Officer $119,054.00
- 2005 Enlisted $56,626.00

For civil service firefighters serving in Marine F&ES, the author has applied the March 2005 Office of Personnel and Management (OPM) United States GS-0081 annual salary rates[21] of:

- $62,275.00 (Chief Position, GS-12 Step 8)
- $41,121.00 (Fire Prevention and Firefighter positions)

The third assumption is that the DoD firefighter prohibition, 10 U.S.C. 2465, will remain in effect for years to come. Appendix I explores this prohibition further.

Fourth is that there will be a long-term operational requirement for expeditionary uniformed Marine firefighters, and that the demand for emergency services in contingency environments is increasing. Appendix VII explores the continued and growing nature of F&ES in support of contingency operations, while discussion of Alternative 1 elaborates on the expanded role of uniformed Marine firefighters.

Fifth is that the only viable organizational alternatives for Marine Corps F&ES are those that sustain, support, and provide a working environment for uniformed

[21] Civil Service F&ES Baseline Costs, retrieved October 12, 2005 from http://www.fedscope.opm.gov/

Marine firefighters when not deployed. One of the hallmarks of Marine emergency services is the ability to deploy F&ES Marines in support of contingency operations primarily as a component of a Marine Wing Service Support Squadron (MWSS) in support of forward aviation operations. Considering the MWSS operational requirement, any alternative that does not sustain forwardly deployed F&ES capability is not acceptable.

The final assumption is that uniformed Marine ARFF firefighters may be responsible for a wide variety of emergency service situations and needs beyond service to aircraft including:

- Fire Prevention and Inspection Duties
- Response to Improvised Explosive Device Detonations
- Motor Vehicle Accidents and Extrications
- Emergency Medical Service Response
- Structural fires
- Wild Land Firefighting

This assumption raises the question of whether or not the current organizational structure of Marine F&ES is generating the “effectiveness outputs” or expert firefighting and EMS skills that prepare all Marine Corps firefighters for joint response scenarios, and moreover, uniformed Marine ARFF personnel for the potential myriad of emergency service scenarios inherent to expeditionary operations.

G. STATUS QUO ACTIVITY (ALTERNATIVE 1)

1. History and Structure

A description of the Marine Corps' current organizational structure being considered in this Business Case Analysis must be sufficiently detailed so that all stakeholders can understand conclusions drawn from the analysis. Additionally, the description must be detailed enough to assign costs and review performance measures. The detailing of the status quo model develops baselines, and a picture of what is being examined that will be used to compare alternative F&ES structures. In short, the status quo model is developed to understand areas affected by the proposed alternatives.

A narrative history of Marine Corps F&ES obtained from CWO-4 James R. Casey (USMC retired) provides a reasonably accurate overview of existing Marine emergency services.[22]

> In 1947, Headquarters Marine Corps created a Military Occupational Specialty (MOS 7051) for an airfield firefighter, the Crash Crewman. This MOS also had a secondary duty of structural firefighter. Several of the Marine firefighters at Parris Island became the first Marine Crash Crewmen. Marine firefighters from other bases were also assigned the new MOS and left the structural fire departments to organize the airfield fire departments. Between 1947 and 1949, the fire departments began integrating civilian fire fighters. During the Korean conflict, the Marines were phased-out of the structural fire departments and they were staffed with civilians. Marines received their training at the Navy fire school at Naval Air Station Memphis, TN until establishment of the DoD Joint Fire School at Goodfellow AFB, TX.

[22] USMC F&ES History, retrieved October 13, 2005 from http://www.lts.net/~hogston/cfrhx.html

> Beginning in the early 1950's, Crash Crew Marines went through several reorganizations in the search to provide the best crash and structural fire protection to Marine aviation squadrons during combat and peacetime deployments. For a time they were assigned to Marine Air Base Squadrons (MABS) which were attached to either a Marine Aircraft Group (MAG), or Marine Wing Support Group (MWSG). Each Air Wing attempted local solutions such as MABS, Wing Engineer Squadron, Wing Equipment Repair Squadron, Wing Motor Transport Squadron, Headquarters & Headquarters Squadron and Marine Wing Support Squadron (MWSS). Headquarters Marine Corps finally selected the MWSS concept, placing them all in MWSG's in the mid-1980's.
>
> Today, the Marine Corps continues to maintain two distinct fire and emergency services (F&ES), one for aircraft rescue fire fighting (ARFF) staffed by uniformed Marines, and one for structural fire and emergency services staffed by Civil Service firefighters, our Civilian Marines. The ARFF units provide protection for 10 Marine Corps Air Stations/Air Facilities and two Auxiliary Landing Fields. The Marines also continue to provide deployable fire protection by assignment to 10 Marine Wing Support Squadrons. The Marine fire fighting personnel consists of 535 deployable billets and 410 others, including billets at Air Stations and school instructors.
>
> The Marine Corps structural fire and emergency services consists of 16 fire departments that are staffed by 720 civilian fire fighters and 220 Japanese nationals and provide fire protection to 19 Marine Corps installations and 2 Navy installations. By cross training and providing mutual support, both F&ES departments render fire suppression, fire prevention, emergency medical response, hazardous materials response and rescue services to their respective areas.

As noted in this excerpt, there is delineation within uniformed Marine Corps firefighters between MWSS and Installation manpower and organizations. This analysis is

focused on the examination of installation F&ES organizational alternatives that fully accommodate expeditionary emergency service operations. Viable alternatives must train, educate, sustain and allow for the working integration of expeditionary F&ES manpower.

In addition to the description provided by Jim Casey, the creation of the Chemical Biological Incident Response Force (CBIRF) in the spring of 1996 has provided Marine firefighters with an alternate mission:

> When directed, forward-deploy and/or respond to a credible threat of a Chemical, Biological, Radiological, Nuclear, or High Yield explosive (CBRNE) incident in order to assist local, state, or federal agencies and Unified Combat Commanders in the conduct of consequence management operations by providing capabilities for *agent detection and identification; casualty search, rescue, and personnel decontamination; and emergency medical care and stabilization of contaminated personnel.*[23]

Effectiveness and Output baselines for the dual F&ES organizational model are developed in the next section. These baselines allow comparison of the alternatives subsequently examined.

2. Effectiveness (Core Capability) Baseline

Arguably, each Marine Corps installation has specific emergency service operational requirements due to variation in geography and operations supported. Because of this "uniqueness," establishment of an F&ES Effectiveness Baseline that encompasses all Marine installations identified in the geographic scope is not practical.

[23] CBIRF Mission, retrieved on October 13, 2005 from http://www.cbirf.usmc.mil/mission.htm

However, F&ES Effectiveness Baselines for the Marine installations participating in this research are possible due to the primary research conducted at these locations.[24] To establish the Effectiveness Baseline, Camp Pendleton's F&ES support requirements and department core capabilities are depicted in the following table.

Although MCAS Yuma participated in the primary research, the joint response focus of the Yuma ARFF and SFD is not typical of the Marine dual F&ES structure. More commonly, F&ES operations by ARFF and Structural Departments are conducted independently and correspond directly to separate installation responsibilities.

Camp Pendleton F&ES Support Requirements	**Structural Department Core Competencies**	**ARFF Department Core Competencies**
Aircraft Emergency Response		X
Structural Fire Response	X	
EMT/Ambulatory Response	X	
Hazardous Material Response	X	X
Wild Land Fire	X	
Swift Water Rescue	X	
Confined Space Rescue	X	
Motor Vehicle Accident Response	X	

Table 3 - Camp Pendleton Effectiveness Baseline

In this dual F&ES organization model, Camp Pendleton's F&ES needs encompass 8 total emergency service operational areas. Combined, the departments satisfy 100% of the installation's F&ES operating requirement. Considering the

[24] Appendix III (Site Visits)

aggregate need (8 F&ES mission areas) for Camp Pendleton's emergency services, the core capability baseline ratings for each department with respect to the aggregate installation requirement are:

- MCAS Pendleton ARFF – 25% (2 of 8)
- MCB Pendleton SFD – 87.5% (7 of 8)

While this arrangement provides for total F&ES support to Camp Pendleton's installation, the author poses two questions.

- Does this model develop and reinforce the F&ES core capabilities required in the performance of expeditionary (deployed) emergency services by the ARFF Department?
- Does this model inhibit operational effectiveness of mutual response by both departments to a common emergency?

Examination of these questions is premature, as no alternative Effectiveness models have been detailed by the author for comparison. At this point, baseline effectiveness for each department has been established, and may be used for comparison to other F&ES alternatives. Once again, this effectiveness baseline is not representative of all current Marine F&ES organizational structures, however, this baseline is typical.

3. Output Baseline

This measure describes the service provided and actual level of activity recorded or effort that was realized. The level of activity measured is the labor input required to

support a given F&ES organizational arrangement, and correspondingly, estimated labor costs.

Camp Pendleton's F&ES organizational arrangement is stated in Tables 4 and 5. This output baseline, much as with the effectiveness baseline, is not comprehensive of all Marine Corps installation fire departments. This baseline is meant to serve for representative comparison to alternative output baselines.

Labor Source	Quantity Required	Description	Labor Rate	Total
Military	1	Mgmt. & Admin	$ 119,054	$ 119,054
Military	8	Mgmt. & Admin	$ 56,626	$ 453,008
Military	1	Prevention	$ 56,626	$ 56,626
Military	64	F&ES	$ 56,626	$ 3,624,064
	74		Total	$ 4,252,752

Table 4 - Camp Pendleton ARFF Output Measures – Estimated Annual Labor Costs

Labor Source	Quantity Required	Description	Labor Rate	Total
Civil Service	1	Mgmt. & Admin	$ 62,275	$ 62,275
Civil Service	7	Mgmt. & Admin	$ 41,121	$ 287,847
Civil Service	7	Prevention	$ 41,121	$ 287,847
Civil Service	98	F&ES	$ 41,121	$ 4,029,858
	113		Total	$ 4,667,827

Table 5 - Camp Pendleton SFD Output Measures – Estimated Annual Labor Costs

In summary, Camp Pendleton's Output baseline of estimated labor costs are:

- ARFF $4,252,752 (Required, 74 personnel)
- SFD $4,667,827 (Required, 113 personnel)
- Total $8,920,579 (Required, 187 total personnel)

II. DISCUSSION OF ALTERNATIVES

A. MILITARY DEPARTMENTS (ALTERNATIVE 2)

1. Functional Performance Description

The Military Department (Alternative 2) would involve staffing Marine Corps emergency services exclusively with military manpower.

2. Eliminating Factors

The author concludes that this alternative is not viable considering the following:

- DoD force optimization strategic emphasis of reducing use of uniformed military manpower for support related services.[25]

Alternative 2 may therefore be eliminated from further consideration.

B. CIVIL SERVICE DEPARTMENTS (ALTERNATIVE 3)

1. Functional Performance Description

The Civil Service option (Alternative 3) means staffing Marine emergency services exclusively with civil service manpower. This organizational arrangement has proven successful for Navy installations[26].

2. Eliminating Factors

Alternative 3 is not viable considering the following:

[25] Appendix I (DTA force optimization emphasis)

[26] Appendix III (Lemoore Site Visit)

- Emergency service support requirements for Marine Corps contingency operations and special operations such CBRNE response by military personnel.

As noted previously, and also examined in Appendix VII, expeditionary emergency services are integral to supporting forward Marine aviation operations. Thus any alternative that considers elimination of the F&ES military component is not viable. Moreover, CBRNE special operation missions as detailed with CBIRF previously have emerged and require staffing by Marine military firefighters.

C. OUTSOURCED DEPARTMENTS (ALTERNATIVE 4)

1. Functional Performance Description

The Outsourced option (Alternative 4) involves staffing emergency services through the commercial sector. This organizational arrangement has demonstrated limited success for supporting emergency service operations outside the United States for the DoD.

2. Eliminating Factors

This alternative is not viable considering the following:

- 10 U.S.C. 2465 prohibits the Department of Defense from contracting for emergency service support requirements within the continental United States.

Appendix I details the specifics of the prohibition, and Appendix VII further examines the limited utility of contracted F&ES in contingency operations.

D. CONSOLIDATED DEPARTMENTS (ALTERNATIVE 5)

1. Functional Performance Description

The Consolidated Alternative integrates the existing types of labor (uniformed Marine and civil service). Alternative 5 is consistent with DoD/USMC force optimization strategy, complies with federal statute and provides and organizational structure capable of supporting installation, contingency and special operation emergency services for the Marine Corps. As noted in Appendix III, Alternative 5 serves as the F&ES alternative for Air Force Combat Operation Installations.

2. Performance Impact and Metrics

To examine Alternative 5 performance, effectiveness measures are obtained from a consolidated F&ES organizational model. This alternative utilizes the same F&ES Support Requirements identified in the Camp Pendleton baseline effectiveness model:

Installation F&ES Support Requirements	Consolidated Department F&ES Core Competencies
Aircraft Emergency Response	X
Structural Fire Response	X
EMT/Ambulatory Response	X
Hazardous Material Response	X
Wild Land Fire	X
Swift Water Rescue	X
Confined Space Rescue	X
Motor Vehicle Accident Response	X

Table 6 - Consolidated Department Effectiveness Model

In this consolidated F&ES organization model, the aggregate F&ES needs include 8 total emergency service operational areas. The consolidated department satisfies 100% of the installation F&ES operating requirement (8 support requirements, 8 core competencies). With respect to the baseline effectiveness measure already established, the consolidated model provides for equal installation utility. Further comparison of the Alternatives 1 and 5 effectiveness with regards to installation and contingency F&ES will be examined in subsequent discussion.

3. Costs Projections

Costs projections for Alternative 5 will also correspond to the Camp Pendleton required staffing for prevention and firefighters. As previously noted, staffing requirements for Fire Inspection personnel and firefighters are relatively static with respect to DoDI 6055.6 requirements. However, staffing for F&ES Management and Administration is dependant on the size of the labor element managed and the number of departments a given installation maintains.

Previous examination of the baseline Camp Pendleton Output Model identified required Fire Prevention and firefighter staffing for both departments as follows:

	ARFF Prevention	ARFF F&ES	Civil Service Prevention	Civil Service F&ES	Total F&ES & Prevention Personnel
Required	1	64	7	98	170

Table 7 - Alternative 5 Fire Prevention & F&ES Staffing

The question that stands in developing Alternative 5's output measure is the total staffing of management and administration personnel. If both departments were combined without reduction to either management or administrative staffing, the Alternative 5 department would require 17 management and administrative personnel.

Considering DoDI 6055.6 staffing provisions, a practical approach is to consider the oversight and support a consolidated model would realistically require from economical and effectiveness standpoints. To that end, the following model is provided.

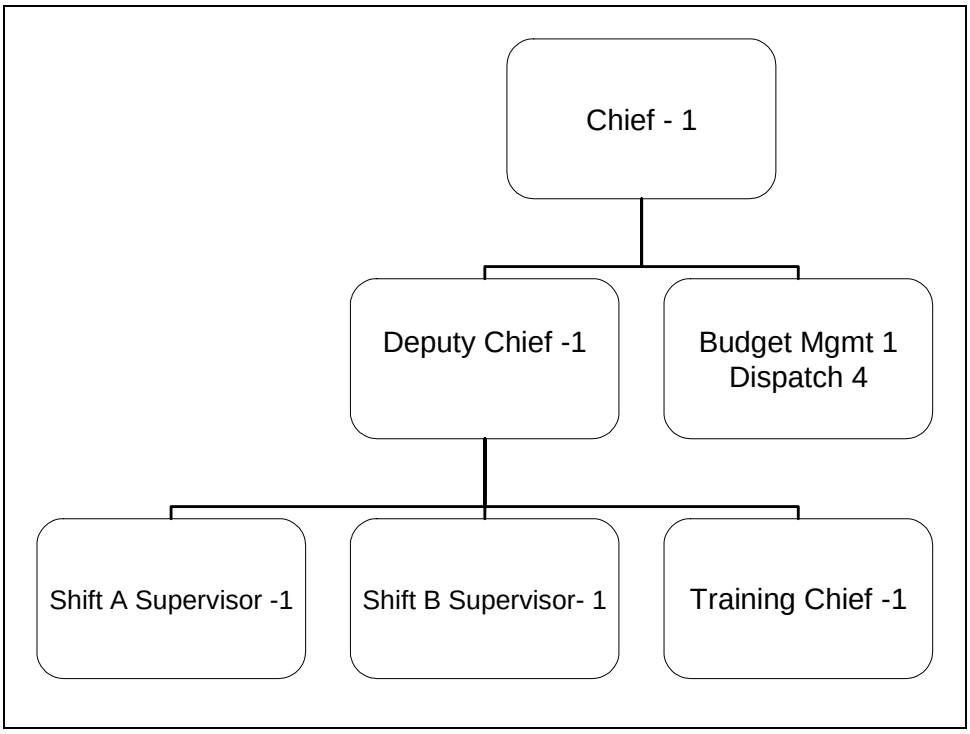

Figure 1. Alternative 5 Management and Administration

This model (typical of most departments) involves staffing for 10 management and administrative personnel. To alleviate some controversy over the labor mix associated with this staffing, the management and administrative billets can be divided equally between civil service and military personnel. With the Alternative 5 Management and Administrative staffing and composition posed, a labor model is provided incorporating the suggested staffing.

	Mgmt. & Admin.	Fire Prevention	F&ES	Total
1. DoDI 6055.6 Reference	E2.5.14.2	E2.5.14.3	E2.5.14.4	
2a. Civilian	5	7	98	110
2b. Military	5	1	64	70

Labor Source	Quantity Required	Description	Labor Rate	Total
Military	1	Mgmt. & Admin	$ 119,054	$ 119,054
Military	4	Mgmt. & Admin	$ 56,626	$ 226,504
Military	1	Prevention	$ 56,626	$ 56,626
Military	64	F&ES	$ 56,626	$ 3,624,064
	70		Subtotal	$ 4,026,248

Labor Source	Quantity Required	Description	Labor Rate	Total
Civil Service	1	Mgmt. & Admin	$ 62,275	$ 62,275
Civil Service	4	Mgmt. & Admin	$ 41,121	$ 164,484
Civil Service	7	Prevention	$ 41,121	$ 287,847
Civil Service	98	F&ES	$ 41,121	$ 4,029,858
	110		Subtotal	$ 4,544,464
			Total	$ 8,570,712

Table 8 - Alternative 5 Output Measures – Annual Estimated Labor Costs

4. Risk Assessment

A risk assessment section provides an understanding of the risks that are related to alternatives examined. This section includes identification of risk (from Appendix VII) and mitigation strategy for each. For each risk, the probability of the risk occurring and the impact it may have on the alternative is identified using the following guidelines:

Probability of Risk

- High: The event is very likely to occur
- Medium: The event is likely to occur
- Low: The event is not likely to occur

Impact of Risk

- High: The event has a significant impact
- Medium: The event will impact the alternative
- Low: The impact is relatively minor
- None: The risk will not impact the alternative

Alternative 5’s risks are examined first. The risks are identified in order of likelihood and impact (from most impactful to least, and most likely to least).

	Probability	Impact After Mitigation
Risk 1 Description: Disagreement in Department Authority.	High	Medium
Risk 1 General Mitigation Strategy: Review and determination of Installation Fire Chief position at HQMC. Subsequent delineation of the staffing decision in applicable orders and directives.	*Specific Strategy:* *Of all risks identified, the staffing of the Fire Chief position for Alternative 5 is the most significant issue among civil service and military F&ES managers. From efficiency and command and control standpoints, Alternative 5 requires one Fire Chief. Regardless of the outcome of this staffing decision, it is sure to meet organizational resistance. Therefore, it is recommended the Fire Chief staffing determination be reviewed and determined at HQMC, and promulgated through applicable orders and directives.*	
Risk 2 Description: Possible increased F&ES operational costs during Marine deployments (overtime).	High	Medium
Risk 2 General Mitigation Strategy: Prospective F&ES operational planning for anticipated deployments; crisis action planning for immediate contingency F&ES operations.	*Specific Strategy:* *The most significant operational risks of Alternative 5 is the deployment of Marine firefighters to support contingencies. Considering the Camp Pendleton Alternative 5 model, Marine F&ES manpower contributes 39% of the required department staffing. While the temporary reduction of military labor does pose an operational challenge to installation F&ES during deployments, overtime and temporary positions may be prospectively planned and budgeted for the majority of operations requiring the deployment of Marine Firefighters. Emergency situations may still occur that would require crisis action planning and budgeting.*	

	Probability	Impact After Mitigation
Risk 3 Description: Marine Warfighting Ethos Diminished.	Medium	Low
Risk 3 General Mitigation Strategy: Leadership and Prospective Planning.	*Specific Strategy:* *Senior Marine Firefighters continue leadership of junior Marines by ensuring completion of warfighting and annual training (marksmanship, martial arts, physical fitness, etc…). Civil Service Management and Administration supportive and receptive of the military training requirements. Both military and civil service F&ES managers prospectively plan and execute annual training schedule for uniformed Marine firefighters.*	
Risk 4 Description: Marine and Civil Service Firefighters will refuse to work together.	Medium	Low
Risk 4 General Mitigation Strategy: Promulgation of F&ES consolidation initiative by HQMC via official message and revision to F&ES publications and directives. Frequent communication and collaboration by Marine and Civil Service F&ES Managers.	*Specific Strategy:* *Certainly friction between all firefighters early in consolidation will occur. However, as detailed in Appendix III with Beale AFB, consolidated departments are capable of functioning in a homogeneous manner to meet installation and contingency F&ES operations.* *The promulgation of a message by HQMC addressing Alternative 5 consolidation followed by revisions to Marine F&ES publications and directives would function to mandate the change initiative, establish consolidation requirements and provide legitimacy for the organizational change.*	

	Probability	Impact After Mitigation
Risk 5 Description: Constant turnover of Marine firefighters requires civil service firefighters to continually train new personnel.	Medium	Low
Risk 5 General Mitigation Strategy: Prospective planning and adherence to F&ES annual training schedule. Surge training to address unanticipated deficiencies.	*Specific Strategy:* *While turnover of military firefighters may create capability deficiencies, Marines rarely execute unscheduled PCS rotations. Therefore, military rotations and the capability deficiencies they may create can be planned for by training non-rotating personnel for the anticipated deficiency. The brunt of such training may default to civil service firefighters due to their comparative workforce longevity.*	
Risk 6 Description: Inequity of duty assignments for uniformed Marine firefighters when compared to civil service firefighter duties.	Medium	Low
Risk 6 General Mitigation Strategy: Collaborative management by civil service and Marine F&ES managers.	*Specific Strategy:* *Alternative 5 F&ES management should stress F&ES qualifications and licensing in workforce duty assignments rather than delineations based on labor type.*	

	Probability	Impact After Mitigation
Risk 7 Description: Administration and management regulations for military and civil service personnel present significant cohesion and leadership challenges.	Medium	Low
Risk 7 General Mitigation Strategy: Fully integrated F&ES training, education and emergency response. Delineation of civil service and military leadership requirements.	*Specific Strategy:* *Alternative 5 cohesion challenges will be normalized in time through fully integrated F&ES training, education and emergency response.* *Delineation of F&ES leadership duties should be planned and accommodated. For example, Marine F&ES managers administer proficiency and conduct evaluations, uniform inspections, etc… while Civil Service F&ES managers administer performance reviews, labor union matters, etc…*	
Risk 8 Description: Diminished morale of work force if integrated.	Medium	Low
Risk 8 General Mitigation Strategy: Incorporate Tier 2 Stakeholders in Alternative 5 Implementation and Planning. HQMC promulgation of F&ES consolidation initiative by message. Fully integrated F&ES training, education and emergency response.	*Specific Strategy:* *Inclusion of Tier 2 stakeholders in Alternative 5 planning and implementation would provide opportunity for Civil Service and Marine F&ES managers to contribute to the change process.* *Promulgation by HQMC will provide credibility and justification for the initiative.* *Acceptance of the Alternative 5 organizational structure by the workforce will meet resistance. However, through integrated F&ES training, education and emergency response the resistance will likely subside.*	

	Probability	Impact After Mitigation
Risk 9 Description: Marine firefighters less familiar with SFD responsibilities, Civil Service firefighters less familiar with ARFF responsibilities.	Medium	Low
Risk 9 General Mitigation Strategy: Fully integrated F&ES training, education and emergency response.	*Specific Strategy:* *Fully integrated F&ES training, education and emergency response will work to overcome capability deficiencies that may exist early in F&ES integration.* *As noted in Appendix III, the majority of Pendleton and Yuma firefighters maintain NFPA and DoD certifications in structural and aircraft F&ES: integrated training, education and response would further develop the core competencies required for the installation, and moreover provide Marine firefighters with an enhanced F&ES core competency base required for contingency operations.*	

The risks of not proceeding with Alternative 5 and maintaining Alternative 1 are reviewed as well, based on input from Appendix VII.

	Probability	Impact After Mitigation
Risk 1 Description: Duplications in F&ES management and administration.	High	High
Risk 1 General Mitigation Strategy: None	*Specific Strategy:* *Alternative 1 poses no opportunities for reductions in management and administration staffing for either department.*	
Risk 2 Description: Less capable, qualified Marine firefighters deployed to support contingency operations.	High	Medium
Risk 2 General Mitigation Strategy: F&ES Training and education for Marine ARFF firefighters that extends beyond aircraft competencies.	*Specific Strategy:* *F&ES Training and education for Marine ARFF firefighters that extends beyond aircraft competencies may assist Marine firefighters in deployed emergency scenarios. However, training and education alone do not enhance the full spectrum F&ES core competencies that may be required in contingency operations.*	

	Probability	Impact After Mitigation
Risk 3 Description: Lack of flexibility and less F&ES capability with Alternative 1. Less understanding of corresponding department operational responsibilities.	High	Medium
Risk 3 General Mitigation Strategy: Frequent cross training between ARFF and Structural Departments. Periodic joint reviews of mutual aid agreements.	*Specific Strategy:* *Frequent cross training between ARFF and Structural Departments is required to ensure effective command and control and response to joint F&ES emergencies.* *Periodic joint reviews of mutual aid agreements existing between ARFF and Structural departments will assist in familiarization of joint response requirements and operating procedures.*	
Risk 4 Description: Less exposure to training and fewer response opportunities.	High	Medium
Risk 4 General Mitigation Strategy: F&ES training and education for Marine ARFF firefighters that extends beyond aircraft competencies. F&ES training and education for civil service firefighters that includes aircraft related responses.	*Specific Strategy:* *Both structural and ARFF departments include training that encompasses the F&ES core competencies of the other.* *Periodic joint reviews of mutual aid agreements existing between ARFF and Structural departments.* *Frequent cross training and education between ARFF and Structural Departments to ensure effective command and control and response to joint F&ES emergencies.*	

	Probability	Impact After Mitigation
Risk 5 Description: Outsourcing of Marine structural F&ES is “more likely” utilizing Alternative 1’s organizational structure.	Medium	High
Risk 5 General Mitigation Strategy: None	*Specific Strategy:* *The continued use of Alternative 1 may provide for an ‘easier’ transition to commercial F&ES for Marine structural departments if 10 U.S.C. 2465 is canceled.* *The use of Alternative 5 may pose challenges to commercial F&ES sourcing, as private industry may be unwilling to partner F&ES responsibilities with the military. Alternative 5 is addressed in this section as this organizational structure arguably mitigates this risk.*	
Risk 6 Description: Less continuity for ARFF F&ES installation operations with Alternative 1.	Medium	Low
Risk 6 General Mitigation Strategy: Face-to-face turn-over for key management and administration personnel. Update and use of turnover binders.	*Specific Strategy:* *When possible, face-to-face turn-over for key management and administration personnel should transpire to ensuring understanding of F&ES operations and response requirements.* *Additionally, frequent update and use of turnover binders may augment face-to-face turnovers, or provide operational familiarity for newly assigned F&ES personnel in the event face-to-face turnover is not possible.*	

III. COMPARISON OF ALTERNATIVES

A. FUNCTIONAL

Functional comparison examines whether or not Alternative 5 would result in a distinctly different manner of providing emergency services than Alternative 1. As Alternative 5 poses no reduction to Fire Prevention or Firefighter staffing, the service functionality of Alternative 1 is also provided by Alternative 5.

The functional distinction between the alternatives is change posed to installation/department command structures and relationships. Alternative 5 would provide Marine installation commanders with a single, multi-capable Fire, EMS and First Response Unit. For Marine installations such as MCAS Yuma where the structural and ARFF department serve the same command, use of Alternative 5 is aligned with current command/department relationships. However, installations such as Camp Pendleton where structural and ARFF departments are responsible to separate commands, the use of Alternative 5 presents a significant organizational change. Certainly F&ES support for aviation operations need to remain a paramount focus when considering utilization of Alternative 5.

Although substantial in impact, examination of functional changes posed to command/department structures and relationships does not provide for aggregate comparison of the costs and benefits associated with each organizational alternative.

B. PERFORMANCE

Performance comparison is completed to provide a straightforward examination of performance expected from the remaining F&ES alternatives. Once again, the performance outputs that meet customer requirements pertaining to this business case are emergency service *core competencies* provided by each alternative. Alternative 1 baseline effectiveness and Alternative 5 effectiveness measures previously identified provide the input for the following model.

Camp Pendleton F&ES Support Requirements	Alternative 1 SFD Core Competencies	Alternative 1 ARFF Core Competencies	Alternative 5 Integrated Core Competencies
Aircraft Response		X	X
Structural Fire Response	X		X
EMT/Ambulatory Response	X		X
Hazardous Material Response	X	X	X
Wild Land Fire	X		X
Swift Water Rescue	X		X
Confined Space Rescue	X		X
Motor Vehicle Accident Response	X		X

Table 9 - Installation F&ES Core Competency Comparison

While the combined F&ES core competencies of Alternative 1 departments equal Alternative 5 for supporting installation F&ES requirements, another model detailing emergency service scenarios typical[27] of contingency operations is provided for comparison:

[27] Appendix VII, ARFF Marine Interviews

Contingency F&ES Support Requirements	Alternative 1 ARFF Core Competencies	Alternative 5 Core Competencies
Aircraft Emergency Response	X	X
Structural Fire Response		X
EMT/Ambulatory Response		X
Hazardous Material Response	X	X
Wild Land Fire		X
Swift Water Rescue		X
Confined Space Rescue		X
Motor Vehicle Accident Response		X

Table 10 - Contingency F&ES Core Competency Comparison

When emergency service scenarios associated with contingency operations are considered, Alternative 5 demonstrates significant F&ES core competency advantages to deployed Marine firefighters. Alternative 5 provides Marine military firefighters the opportunity to respond to installation F&ES scenarios outside the spectrum of service to aircraft, developing broadened emergency service expertise. Alternative 5 also may enhance unity of command and unity of effort toward all installation F&ES operations, an attribute arguably appealing to installation and F&ES managers.[28]

C. COSTS

When considering the staffing required to support Camp Pendleton F&ES operations, a comparison of estimated annual labor costs of Alternatives 1 and 5 is provided:

[28] Appendix III, Lemoore Site Visit

Alternative 1 Camp Pendleton SFD	Alternative 1 Camp Pendleton ARFF	Alternative 1 Total Required Labor Spending	Alternative 5 Camp Pendleton Consolidated Department
$ 4,667,827	$ 4,252,752	$8,920,579	$ 8,570,712

Table 11 - Labor Costs Comparison

The use of Alternative 5 estimates an annual labor savings of $349,867 to support Camp Pendleton F&ES operations. However, estimated implementation cost associated with this organizational change must be evaluated as well to obtain a net benefit evaluation of this organizational change.

Alternative 5 requires an initial investment in personal protective equipment (PPE) for firefighters (structural “turnout gear” for ARFF members, and ARFF “proximity gear” for structural firefighters).[29] The following provides an estimate of this PPE expense[30]:

ITEM	QTY	U/P	T/P
Chieftan 3200 Ultra Khaki Advanced Turnout Coat	1	$ 596.00	$ 596.00
Chieftan 3200 Ultra Khaki Advanced Turnout Pants	1	$ 399.00	$ 399.00
Shelby FDP Pigskin/ Gore Gloves w/ Wristlet	1	$ 43.99	$ 43.99
Bullard Traditional Fire helmet w/ 4" Face Shield	1	$ 184.00	$ 184.00
PGI Carbon Shield Classic Hood	1	$ 27.99	$ 27.99
Ranger 16" Combat LB Rubber Boots, Insulated	1	$ 147.00	$ 147.00
			$ 1,397.98

Table 12 - Structural PPE Cost Estimate

[29] DODI 6055.6 E2.5.18.2

[30] Emergency Service Personal Protective Equipment Descriptions and Prices, retrieved on October 13, 2005 from www.thefirestore.com

ITEM	QTY	U/P	T/P
Fire Dex Proximity Assault Coat, Aluminized	1	$ 669.99	$ 669.99
Fire Dex Proximity Assault Pants, Aluminized	1	$ 599.99	$ 599.99
Bullard CX Aluminized Helmet Shell Cover	1	$ 70.00	$ 70.00
Gold Hard Coated 6" Face Shield	1	$ 63.00	$ 63.00
Shelby Proximity Gloves w/ Wristlet	1	$ 100.99	$ 100.99
Ranger 16" ARFF Rubber Boots	1	$ 133.00	$ 133.00
Flight X Black Nomex Gloves	1	$ 41.99	$ 41.99
Flight X Black Nomex Hood	1	$ 33.00	$ 33.00
			$ 1,711.96

Table 13 - ARFF PPE Costs Estimate

The purchase of proximity and turnout PPE for both labor components to support Camp Pendleton's Alternative 5 implementation is estimated as detailed:

F&ES Labor Component	Personnel	PPE Costs (1 Firefighter)	Total Estimated PPE Costs
Camp Pendleton Structural Staffing	110	$ 1,711.96	$ 188,315.60
Camp Pendleton ARFF Staffing	70	$ 1,397.98	$ 97,858.60
			$ 286,174.20

Table 14 - Alternative 5 PPE Costs Estimate

Training costs initially speculated with organizational change are negligible. Site Visits to the Camp Pendleton and MCAS Yuma departments (Appendix III) revealed the majority of ARFF and structural firefighters possess the requisite DoD/NFPA certifications required to operate as a homogeneous department.

In summary, the estimated labor savings weighed against the initial PPE costs requirement pose a net benefit recommendation that favors Alternative 5 in the amount of $63,693 within a one-year payback period.

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IV. CONCLUSIONS, RECOMMENDATIONS, AND ISSUES FOR FURTHER EXAMINATION

A. CONCLUSIONS

The baseline comparisons of Alternative 1 to Alternative 5 suggest the use of Alternative 5 will reduce annual F&ES labor costs and enhance emergency service capability for the Marine Corps.

The majority of the risks identified with Alternative 5 are associated with redefined command relationships and organizational change dynamics. Although the identified risks pose challenges to installation leadership, F&ES managers and first responders, the risks are not associated with erosion of emergency service response capability.

The gains postulated by Alternative 5 include enhanced emergency service core competencies for all Marine firefighters, an increased spectrum of F&ES capabilities available to Combatant Commands and small reductions to F&ES annual labor spending. While the postulated improvements are significant, realization of this organizational change will require reassessment of the long term operational strategy of emergency services in the Marine Corps.

Today our forces are operating in a less predictable threat environment, both at home and abroad, with multiple axes of advance to protect against. The asymmetric threats of our enemies have increased the potential for miscalculation and surprise, principally considering Weapons of Mass Destruction (WMD) and CBRNE threats.

Defense against such attacks and measures to respond to them require update and redefinition to bolster critical force protection capabilities.

Does the current Marine F&ES alternative provide for synergistic response of Structural and ARFF departments to common emergencies? Will response to motor vehicle accidents, structural fires, and emergency medical service needs in our homeland installations by military firefighters better prepare them for contingency emergency service operations? Does Alternative 1 support the growing demand for enhanced force protection measures and initiatives advocating optimization of installation support functions? Having reviewed the costs, benefits and organizational dynamics associated with this change, these questions remain for the reader to consider.

B. RECOMMENDATIONS

The author recommends further examination of Marine F&ES consolidation with respect to the alignment of this organizational alternative with higher-level force optimization initiatives. Due to the unique geographic and operational requirements of each Marine installation, input from each installation identified by the geographic scope of this analysis should be considered in higher level reviews of Alternative 5. A 1997 GAO Report *BASE OPERATIONS, Contracting for Firefighters and Security Guards* noted:

> An A-76 study is necessary at each base that may convert these functions to contract because each base is unique in terms of the mission it must support and the nature of its local economy.

Alternative 5 is far removed from the F&ES outsourcing option, however, the logic advocated by GAO regarding the requirement to examine each installation prior to enacting F&ES change readily applies.

Specific recommendations for further consideration include:

- A multi-stakeholder examination of Alternative 5 to determine operational viability and associated organizational change dynamics that includes: Ground Combat Element, Air Combat Element, Marine Installation, Marine Structural Firefighting, Aircraft Rescue Firefighting and American Federal Government Employee (AFGE) Firefighter Union representatives.
- Solicitation of command specific input regarding Alternative 5 from all installations included in the change initiative should the multi-stakeholder examination establish viability.
- Consideration of an Alternative 5 “pilot program” at MCCDC Quantico, Virginia if the initiative is found viable. This location (within close proximity to the Marine Corps Training and Education Command (TECOM) and the Marine Corps Warfighting Laboratory (MCWL)) would enable low cost evaluation of an ARFF/SFD integrated pilot, and provide for ready review of organizational and operational changes associated with the change to promulgate to the Fleet Marine Force (FMF).

C. ISSUES FOR FURTHER EXAMINATION

Several issues were unable to be fully developed within the scope of this study. In the opinion of the author these topics warrant further examination to address substantial issues noted during the course of this research. The topics include:

- Further examination of the Enhanced Expeditionary Emergency Service (EEES) initiative (introduced in Appendix VII).
- Development of tactical doctrine that addresses the use of Marine emergency service resources in contingency operations. This recommendation is based on the absence of such doctrine noted in review of F&ES publications and directives (Appendix VI).
- Examination of replacing the AS32-P19A with a modern firefighting vehicle, and increased fielding of the Fire Suppression System (FSS) to ARFF deployable units (noted Appendix VII interviews).

APPENDIX I. FORCE OPTIMIZATION

A. OVERVIEW

> The modernization of the Department of Defense is a matter of some urgency. In fact, it could be said that it is a matter of life and death - ultimately, every American's. A new idea ignored may be the next threat overlooked. A person employed in a redundant task is one who could be countering terrorism or nuclear proliferation. Every dollar squandered on waste is one denied to the warfighter. That is why we are today challenged bureaucracy to the battlefield, from the tail to the tooth. We know the adversary. We know the threat. And with the same firmness of purpose that any effort against a determined adversary demands, we must get at it and stay at it.
>
> -Secretary of Defense Donald H. Rumsfeld to Pentagon Employees, September 10, 2001

The unfortunate irony in this quote is the date the Secretary of Defense delivered this speech, just one day prior to the terrorist attacks that forever changed America and our military institution. The attacks underscored the need for DoD to not only respond to, but preempt asymmetric threats to our nation. Such responsiveness will only be achievable through the *transformation* of our military and warfighting efforts.

As Defense discretionary spending is subjected to increased levels of Congressional and service scrutiny, examination of measures to realize force optimization are prevalent. In order to meet operational requirements and recaptialize, implementation of force optimization initiatives is imperative. DoD's top-down emphasis of force

optimization on the services has set a competitive agenda amongst armed service leadership for limited program, mission, and installation resource support.

B. THE DEFENSE TRANSFORMATION ACT

In April of 2003, the Office of the Secretary of Defense on behalf of the Bush Administration proposed the Defense Transformation Act (DTA) to Congress. This capstone legislation proposed comprehensive reforms to finance, budgeting, and organizational management within DoD. Though only portions of the DTA Bill were approved by Congress, the measures enacted have improved the overall responsiveness of our military. Moreover, the DTA stressed a recurrent need for promoting force optimization through advanced technology, new operational concepts, and concurrent changes in organizational arrangements. Individual service emphasis of force optimization is readily evident in recently published strategy statements and initiatives.

How critical is the need to promote force optimization in the DoD? A recently published Congressional Budget Office (CBO) report entitled *An Alternative Budget Path Assuming Continued Spending for Military Operations in Iraq and Afghanistan and in Support of the Global War on Terrorism (February 2005)* portrays the following:

ADDITIONAL INFORMATION ABOUT THE POLICY ALTERNATIVE FOR CONTINUED SPENDING IN SUPPORT OF THE GLOBAL WAR ON TERRORISM IN CBO'S JANUARY 2005 BUDGET AND ECONOMIC OUTLOOK [a]

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2005-2015
Possible Spending Path (Billions of Dollars)												
Budget Authority	65	85	65	50	35	25	25	26	27	27	28	458
Outlays	30	70	75	65	45	30	25	26	27	27	28	448
Assumed Troop Levels												
Deployed Personnel [b,c]	206,000	201,000	158,000	119,000	83,000	50,000	50,000	50,000	50,000	50,000	50,000	
Reserve Backfill [d]	63,000	64,000	53,000	42,000	33,000	24,000	24,000	24,000	24,000	24,000	24,000	
Over Endstrength [e]	33,000	34,000	30,000	20,000	10,000	0	0	0	0	0	0	

SOURCE: Congressional Budget Office.

a. This alternative assumes an eventual slowdown of U.S. military activities in Iraq and Afghanistan but continued spending for the global war on terrorism throughout the projection period. It also includes funding for replacing damaged, destroyed, or worn-out equipment, and domestic military operations for homeland security.

b. Assumes 170,000 to 180,000 troops deployed in and around Iraq and 29,000 troops deployed in and around Afghanistan in 2005 and 2006.

c. During the 2010-2015 period, includes approximately 40,000 (roughly four brigades) Army and Marine Corps personnel and 10,000 personnel from the Air Force and Navy.

d. Reserve backfill includes reservists activated to replace deployed active-duty personnel, as well as reservists activated as part of Operation Noble Eagle.

e. Personnel on active duty in excess of Army endstrength (482,400) and Air Force endstrength (359,700) funded in the Department of Defense Appropriations Act, 2005 (P.L. 108-287).

Figure 2. CBO's Budget and Economic Outlook January 2005

The scenario depicted by CBO in Figure 2:

> …assumes that military operations in Iraq and Afghanistan and other activities related to the global war on terrorism continue at their current levels during 2005 and 2006, but decline after that. Under such assumptions, discretionary outlays over the 2005-2015 period would total $448 billion more than the baseline figures presented in CBO's January 2005 Budget and Economic Outlook. Interest costs on the additional debt resulting from that spending would amount to $173 billion over that period.
>
> In estimating the spending for this scenario, CBO assumed that slightly more than 200,000 active duty and reserve personnel would be deployed to Iraq, Afghanistan, and other overseas locations in 2005 and 2006, and that the number of troops deployed in support of the global war on terrorism would decline to about 50,000 by 2010 and remain steady at that level for the remainder

> of the period. While the assumptions about deployed troops for 2005 and 2006 are based on current force levels and known DoD plans, the assumptions for subsequent years are hypothetical in nature. CBO assumed that, throughout the 10-year period, some troops would be deployed overseas in operations supporting the global war on terrorism, but not necessarily in Iraq and Afghanistan.

With respect to the immense spending for G.W.O.T. and South West Asia campaigns, measures to eliminate defense inefficiencies and redundancies should be examined.

Within the four pillars of Defense Transformation, force optimization garnered through organizational change is emphasized within the *Developing Transformational Capabilities* pillar.

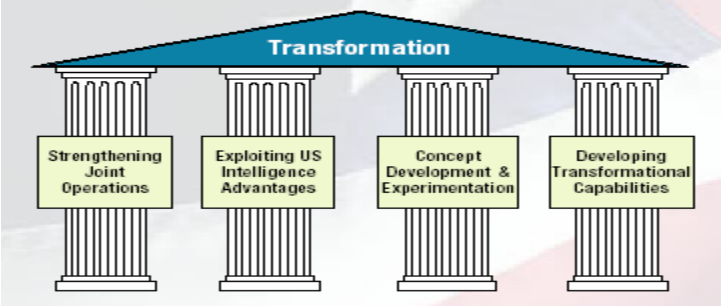

Figure 3. Military Transformation Pillars

As noted in the DoD publication *Military Transformation, A Strategic Approach:*

> Transformation of Organizations: Organizational change is fundamental to transformation efforts. We should expect organizational transformation to extend down through small unit levels.

Although this publication highlights establishment of U.S. Northern Command and the merging of U.S. Space and U.S. Strategic Command, organizational change to improve efficiency and enhance operations is not limited to the "big ticket" programs only. Smaller programs, and even those contributing to force protection and first response such as DoD Fire and Emergency Services, are definitely within the scope of Transformational efficiency efforts.

Subtitle B, Section 211 of the Defense Transformation Act specifically states:

> SEC. 211. CONTRACTING FOR SECURITY GUARDS AND FIREFIGHTING SERVICES. Section 2465 of title 10, United States Code, is repealed. Section-by-Section Analysis:
>
> This section would allow DoD to bid and compete contracts for security guard services as well as contracts for the performance of firefighting functions at military installations in the continental United States. DoD believes such contracts would be more cost-effective and would provide DoD needed flexibility to respond more effectively and rapidly to contingencies and other exigent situations, such as the need for enhanced security of military installations following September 11th.

Congress did not approve the Administration's request to allow for the long-term contracting of DoD emergency services as put forth within the DTA. However, the fact that emergency services were identified within the DTA legislation as a function subject to optimization is notable. (It also provided impetus to conduct this specific analysis).

Federal Law 10 U.S.C. 2465 mandates the prohibition of contracts for performance of firefighting and security guard functions within DoD. Published in 1983, this law

itself does not state the basis for the prohibition within the context of the document. According to the legislative history, the prohibition was enacted because of concerns about the uncertain quality and reliability of private firefighter and security guard services, base commanders' control over contractor personnel, and the right of contractor personnel to strike. Under 10 U.S.C. 2465, the prohibition against contracting for these services does not apply:

- When the contract is to be performed overseas.
- When the contract is to be performed on government-owned but privately operated installations.
- When the contract (or renewal of the contract) is for the performance of a function already under contract as of September 24, 1983.

Although this regulation is over 20 years old, it stands as law, and has been amended a total of four times since inception, most recently in 2003 to make an allowance for the short term contracting of F&ES in order to support manpower requirements mandated by the GWOT.

The Defense Transformation Act repeal directed at 10 U.S.C. 2456 is comparatively a small portion of the full DTA document. However, the ability to maximize the number of uniformed personnel serving in warfighting billets as opposed to support functions is part of a much larger issue confronting the Department of Defense. Former Deputy Secretary of Defense Paul Wolfowitz expounded on the aggregate picture of service and support occupations being outsourced by stating:

> The inability to put civilians into hundreds of thousands of jobs that do not need to be performed by military personnel places great stress on the uniformed personnel and their availability for combat duty. Approximately 320,000 uniformed personnel perform essentially nonmilitary jobs in DoD, but DoD has had to call up Reserve forces to serve in the war on terrorism.

The renewed emphasis of contracting private sector capacity for nonmilitary responsibilities has also been championed by Secretary of Defense Donald Rumsfeld, who wrote:

> Because the Pentagon lacks sufficient authority to manage its civilian workforce, some 200,000 reserve troops left jobs and families to help fight the war on terrorism while an estimated 300,000 active-duty military people occupy staff positions here at home that could be filled by civilians.

DoD and corresponding subordinate Fire and Emergency Service directives and publications detail emergency service operational parameters and responsibilities; however, the documents do not address the specific benefits of retaining the emergency services within DoD. Additionally, service F&ES directives do not provide insight to the basis for armed service F&ES organizational structure. With insight regarding the details of retaining emergency services as an inherently governmental function and a void of information regarding the basis for individual armed service F&ES organizational arrangements, this lack of information poses challenge to DoD emergency services via further outsourcing considerations and optimization initiatives.

C. VISION, PRESENCE, POWER 2004

The United States Navy's *Vision, Presence, Power 2004* publication strongly supports force optimization initiatives posed by DoD's overarching Defense Transformation Act. As noted in the context of the publication, the Navy has emphasized "organizational alignment" to ensure combat readiness:

> Regardless of the actual size of the Navy's budget, we continue to function in a fiscally constrained environment—particularly as the full dimensions of the global war on terrorism have yet to be determined. Thus, we must extract the maximum advantage from the resources provided, and demand a high rate of return on our investments. For the Navy, "organizational alignment" means that our organizations, systems, and processes must deliver exactly what they are designed to produce: a combat-capable Navy ready to sail in harm's way. We can do that only if all Navy organizations are properly aligned to achieve our overall objectives.

Further, this publication illustrates the competitive venue Naval service programs are engaged, by stating:

> The balancing of priorities and the requisite resource allocation decisions comprise the key portion of the Navy's PPBE process: programming and budgeting. The result is a program that allocates resources to meet the Navy's highest priorities at some level of risk as the critical needs are funded at the expense of lower-priority programs. These difficult decisions are based on intensive analysis, informed reviews, and critical projections constrained by the reality of limited resources.

D. CONCEPTS AND PROGRAMS 2005

The Marine Corps' *Concepts and Programs 2005* publication once again illuminates the competitive arena Marine programs and initiatives are subject to by stating:

> Economy and focus of effort are fundamental Marine Corps doctrines. To that end, the Marine Corps Business Enterprise Office has been established to ensure our business processes are providing effective support to the warfighter, Marines, and family members—without consuming any unnecessary resources.
>
> In the Marine Corps, "business transformation" means changing the culture, business practices, processes, and organizations for a sustained warfighting advantage.
>
> Our purpose is to become the most effective and efficient Marine Corps possible, optimizing resources at every level of command in order to free resources for investment in core combat capabilities.
>
> Business Enterprise crosses all organizational boundaries and includes all resources, processes, and products and services that support the warfighter. We are aggressively pursuing business initiatives to drive innovation and change, initiating end-to-end process improvements, and developing the business skills and capabilities of our Marines and civilian Marines to accomplish our objectives. Our end-to-end business process assessments will result in improved effectiveness and efficiencies through regionalization, competitive sourcing, process reengineering, divestiture, or elimination of non-core functions.

E. WHITE LETTER 06-04

The Commandant of the Marine Corp's White Letter *Transforming Our Business Processes* charges Marine

leadership to support the optimization efforts of Defense Transformation. As noted within the context of the document:

> As we transform our business processes, we must keep resources and leadership energy focused on combat capabilities. Necessary, but secondary efforts must be accomplished with the minimum resources possible. Unnecessary efforts that compete with our warfighting priorities will not continue to be resourced.
>
> The campaign to improve the way we manage the business of our Corps will be among the most important initiatives that will ensure MAGTF relevance in 2015. It will not be quick, easy, comfortable or without risks.

F. SUMMARY

Achieving force optimization will meet many challenges. Unlike the private sector, where the functions of a firm are readily measured by profit or loss, National Defense “products” are not so easily measured. Defense programs ultimately function to achieve readiness, which is secured through allocating resources (chiefly manpower, fiscal allocations, and equipment). As the resources available to the services to support required missions are subjected to increasing scrutiny, program structures will continue to be analyzed to ensure optimal resource use. Although functional optimization may serve a greater good, careful examination of force optimization initiatives is most prudent prior to enacting organizational changes, especially when the services examined are as critical as emergency response.

APPENDIX II. ARMED SERVICE F&ES REVIEW

A. OVERVIEW

In August of 2003 the DoD Inspector General published *DOD Fire and Emergency Services Program (D-2003-121).* The report examined the adequacy and effectiveness of DoD F&ES with the noted results:

> Additional missions, increased deployments, National Guard and Reserve mobilizations, and inefficient hiring processes have adversely affected fire department staffing. As a result, firefighters have worked significant overtime, which may impact the fire department's ability to accomplish its missions and lead to potential safety risks for firefighters. The Deputy Under Secretary of Defense (Installations and Environment) with the DoD Components, should jointly update and implement DoD Instruction 6055.6 so that the instruction addresses anticipated staffing for additional missions; should establish a manpower standard that incorporates each mission assigned to the fire and emergency services program; and should establish and publish a detailed human capital strategic plan.

The Inspector General notes concern with F&ES operational staffing. This concern further substantiates the need for emergency service optimization. This appendix examines the following F&ES directives to identify operational staffing requirements and optimization requirements:

- DoDI 6055.6 (DoD Fire and Emergency Services Program
- OPNAVINST 1320.23F CH 2 (Shore Activities Fire and Emergency Services Program)
- NAVAIR 00 80R-14 (NATOPS U.S. Navy Aircraft Firefighting and Rescue Manual)

- MCO P11000.11B (Marine Corps Fire Protection and Emergency Services Program)
- AFI 3200-2001 (The Fire Protection Operations and Fire Prevention Program)

B. DODI 6055.6

The DoD Fire and Emergency Services Program details performance oriented, overarching emergency service operating requirements for all DoD components. The instruction identifies emergency response in a broad manner:

> E2.5.2. Emergency Response. Fire departments shall be prepared, by virtue of appropriate training and equipment, to respond (both on and off the installation) to emergencies involving facilities, structures, aircraft, transportation equipment, hazardous materials, and both natural and man-made disasters (including acts of terrorism). Procedures shall be implemented in accordance with nationally recognized standards and integrated emergency management systems to prevent loss of life, injury, and property damage; to maintain security; and to minimize public inconvenience.

In general, all DoD components are responsible to support (as applicable) structural fire response, aircraft rescue, hazardous materials emergency response, emergency medical and rescue, wild land fire response, fire prevention and fire education.

Appendix IV provides a detailed overview of DoDI 6055.6 staffing requirements. The instruction extends latitude to DoD components to determine F&ES organizational structure and labor composition (with the exception of outsourcing). It also permits cross-staffing, requires

cross-training, and requires F&ES optimization efforts and continual improvement of emergency service quality and performance as noted:

> E2.5.15. Cross-Staffing. Components may cross-staff F&ES apparatus where structural, ARFF, and specialized apparatus are assigned to the same fire station. Cross-staffing shall not diminish minimum staffing requirements of enclosure 5.
>
> E2.5.17.7. Cross-Training. Structural and ARFF fire departments shall be equipped and F&ES personnel assigned shall be cross-trained to be mutually supporting.
>
> E2.5.20. Consolidation of Fire Departments. To minimize the impact of personnel costs and to eliminate duplicate F&ES, the DoD Components shall continue the ongoing efforts to consolidate fire departments.
>
> E2.5.23.3. Continually improve quality and performance and determines if programs and services are effective in meeting the needs of the DoD Component.

C. OPNAVINST 1320.23F CH 2

The Navy's primary F&ES directive supports DoDI 6055.6 operating and staffing requirements: further, the instruction amplifies F&ES core functions and staffing standards:

> 1-2. Objectives. The Navy Fire Protection and Emergency Service Program's fundamental objectives are to prevent loss of life, injury to personnel, and damage to Government property resulting from fires and other emergencies and to provide cost-effective fire prevention, fire protection engineering, and emergency response services.
>
> f. Fire Department. Navy fire departments shall be organized in accordance with NFPA 1201, "Recommendations for Developing Fire Protection Services for the Public", reference (b), and

> staffed and equipped to meet the F&ES standards outlined in this instruction. Fire departments provide service to the installation and to the surrounding jurisdictions through mutual or automatic aid agreements. Core functions fire departments perform include: fire suppression, fire prevention, public fire safety education, fire service training, hazardous materials emergency response, rescue, and emergency response to natural and man-made disasters. Fire department personnel shall be properly trained and become certified in per reference (d).
>
> 2-6. Fire Department Staffing. Staffing standards for management and administration, fire prevention, and emergency response personnel are established in reference (a). Emergency response staffing standards are based on full-time career personnel working 72 hours per week on 24-hour shifts. The number of emergency response personnel authorized in each fire department is based on the number and types of emergency vehicles needed to meet fire flow and travel time standards. Intermittent emergency response personnel programs may be established to provide staffing and leave management. The number of fire prevention personnel authorized is based on an installation's size. The administrative and management authorizations are based on the Fire Department's size. On a case-by-case basis, CNI may approve cross staffing of aircraft rescue and fire fighting and other specialized vehicles from structural or Aircraft Rescue and Fire Fighting vehicles.

This Naval directive mandates consolidation of departments within close operational proximity, and encourages the use of F&ES mutual aid:

> 2-11. Fire Department Consolidation and Regionalization. Where two or more shore activities are contiguous or in close proximity, or within a 50-mile radius, individual fire departments shall be consolidated under the administrative and operational control of a single command. Regional fire department

functions, for departments outside the 50-mile radius, can be consolidated if at least one of the following can be achieved, and the senior fire employee retains a reporting relationship with the installation CO:

a. Routine emergency response of fire and emergency services apparatus between activities

b. Significant cost savings documented by an in-depth cost analysis

c. A more efficient or effective organization, increased production or level of protection, but without an increase in resources.

d. Where consolidation is impractical, administrative and resource support functions such as budget, payroll, personnel, and central procurement of personal protective clothing, equipment, tools, appliances, and fire apparatus should be regionalized. Where two or more government activities are in close proximity, consolidation via inter-agency agreement shall be pursued if items a, b, or c above can be affected. CNI shall review fire department consolidation and regionalization plans prior to implementation to ensure compliance with appropriate public laws and DoD regulations.

2-16. Mutual and Automatic Aid Agreements. Fire Departments are encouraged to enter into mutual and automatic aid agreements with surrounding jurisdictions when it is in both parties' best interests. In the absence of formal mutual or automatic aid agreements, installation COs may give emergency assistance when such assistance is deemed to be in the best interest of the United States and the Navy. Regional and installation Fire Chiefs serve as the technical authority on mutual aid agreements and provide technical assistance to installation commanders.

D. NAVAIR 00 80R-14

The NATOPS U.S. Navy Aircraft Firefighting and Rescue Manual supports DoDI 6055.6 operational and staffing mandates. This directive is focused on the technical aspects of aviation related F&ES for the Navy and Marine Corps. This manual:

> …standardizes Aircraft Firefighting and Rescue Procedures. Compliance with the stipulated manual requirements and procedures is mandatory except as authorized herein. In order to remain effective, NATOPS must be dynamic and stimulate rather than suppress individual thinking. Since aviation fire suppression and protection is a continuing, progressive profession, it is both desirable and necessary that new ideas and new techniques be expeditiously evaluated and incorporated if proven to be sound. To this end, commanding officers of aviation units are authorized to modify procedures contained here, in accordance with the waiver provisions established by OPNAVINST 3710.7 series, for the purpose of assessing new ideas prior to initiating recommendations for permanent changes. This manual is *prepared and kept current by the users in order to achieve maximum readiness and safety in the most efficient and economical manner. Should conflict exist between the training and operating procedures found in this manual and those found in other publications, this manual will govern.*

The NAVAIR advocates dynamic and individual thinking to develop desirable and necessary F&ES changes. However, the manual clearly delineates separate aviation and structural fire departments within the Marine Corps, inhibiting reflection on organizational alternatives for supporting Marine F&ES:

> The two principal fire protection functions at aviation shore activities are aircraft rescue and firefighting protection and structural fire

protection. These services shall be organized and consolidated in accordance with OPNAVINST 11320.23 series.

At Marine Corps air stations, the aircraft rescue and firefighting protection and the structural fire protection are two separate, mutually supporting organizations. In accordance with Marine Corps Order P5320.5 and P11000.11 series, the aircraft rescue and firefighting branch is under the operational and administrative control of the airfield operations officer; the structural fire department, however, is part of the station facilities organization and under their administrative control. Marine Corps structural fire departments are under the control of the station fire chief. When the structural fire department is in support of the aircraft rescue and firefighting branch, it is then under the operational control of the ARFF officer. The aircraft rescue and firefighting branch and the structural fire department shall be cross-trained and mutually supporting.

The station fire chief and/or ARFF officer shall be responsible for the operational readiness, performance, technical training, and management of their respective fire protection organizations. The fire chief/ARFF officer or his designated representative shall have control and direct supervision of all firefighting and rescue operations at the immediate scene of an aircraft emergency and shall be so designated in writing. The air operations officer or, in his absence, a designated assistant exercises overall control of the airfield other than at the immediate scene of an accident.

The combined fire functions will require that civilian and military personnel assigned to the fire protection organization be appropriately trained in both structural and aircraft fire and rescue procedures. Civilian position descriptions will embrace all duties and responsibilities associated with aircraft and structural firefighting. The position title is “firefighter” in lieu of the titles “firefighter, structural” or “ firefighter, airfield.” Aircraft Rescue and

Firefighting (ARFF) is the approved global name for all U.S. Navy and MCAS fire protection functions at aviation shore activities.

E. MCO P11000.11B

The Marine Corps' *Fire Protection and Emergency Services Program* supports the staffing and operational requirements of DoDI 6055.6. The order begins by stressing cost-effective use of fire protection resources; however it makes no delineation in the separation between structural and aviation departments. The order advocates functional optimization through outside assistance and mutual aid agreements, and further requires department consolidations that do not impair mission requirements:

> 2004. OUTSIDE ASSISTANCE. The number of emergency response personnel and equipment needed at any installation depends on the availability of outside forces. Credit for outside forces shall be permitted on a company by company basis when the outside forces conforms favorably to the standards prescribed in this Manual. For Class A installations, outside forces should not exceed one-half of the total company requirements unless the activity is located within or adjacent to a large municipality.
>
> 2010. FIRE DEPARTMENT CONSOLIDATIONS. Fire department functions at military installations in a regional geographic area shall be consolidated where such action is cost-effective, reduces inefficiencies and duplication and will not impair mission requirements.
>
> 2015. MUTUAL AND AUTOMATIC AID AGREEMENTS. Fire departments are encouraged to enter into mutual and automatic aid agreements with surrounding jurisdictions where it is in the best interest of both parties. In the absence of formal mutual or automatic aid agreements, installation commanders may give emergency assistance when such interest is deemed to be in the best interest of the United States and the Marine Corps.

F. AFI 3200-2001

The *Fire Protection Operations and Fire Prevention Program* is the Air Force's primary F&ES directive, requiring compliance with DoDI 6055.6 operating and staffing requirements. The instruction does not make specific reference to F&ES optimization initiatives. However, it provides direction for staffing reductions, and the use of Memorandum of Agreements and Mutual Aid Agreements to offset internal levels of fire protection staffing and equipage.

> 3.1.2.1. Staffing Reduction. Installation commanders have the authority to reduce levels of aircraft rescue and fire fighting capabilities during periods when the flight control tower is not operational due to non-flying, and combined with no aircraft ground servicing or maintenance. Staffing will not be reduced below the level required to meet regulatory requirements for structural fire fighting and hazardous material incidents. This includes ensuring sufficient staffing is on hand to respond the minimum required aircraft rescue and fire fighting (ARFF) vehicles to initiate fire suppression actions and provide fire fighting agent and water resupply.
>
> 3.1.2.2. Memorandum of Agreement. Commanders may establish a Memorandum of Agreement (MOA) with civilian communities or other government agencies to offset internal levels of fire protection staffing and equipage. MOAs of this type must be coordinated with the major command civil engineer and comply with AFI 10-802, Military Support to Civil Authorities.
>
> 3.1.7. Mutual Aid Agreements. The fire chief manages Mutual Aid Agreements in accordance with Attachment 4 (US) and Attachment 5 (Foreign) of this AFI. If the Air Force provides fire fighting services at joint-use civilian airports, include a release and indemnification clause in accordance with Attachment 6 of this AFI. Mutual aid agreements, and emergency responses to local

communities not covered by mutual aid agreements, must be approved by the installation commander.

3.1.7.1. Fire chiefs and their assistants must coordinate with local agencies to familiarize each other with the incident management system used by each emergency response agency and the level at which these agencies comply with NFPA 1500, Fire Department Occupational Safety and Health Program, operational safety requirements. It is critical that off-base agencies be aware of NFPA 1500 requirements and the Air Force requirement to appoint a fire ground safety officer at any incident if one has not been appointed.

3.1.7.2. Off-Base Surveys. Installation fire departments annually survey those areas surrounding the base where they may be called upon to provide mutual aid or assistance to ensure a full understanding of potential hazards. The installation fire department will obtain copies of civilian fire department emergency response plans for high hazard areas where they may be requested to provide assistance.

G. SUMMARY

The service F&ES directives examined stipulate compliance with DoDI 6055.6 staffing and operational requirements, and stress the use of mutual aid to provide synergistic employment of F&ES resources. Interestingly, only Navy and Marine publications examined detail F&ES optimization requirements (OPNAVINST 1320.23F CH 2 and MCO P11000.11B).

Another commonality noted is a lack of specific reference to emergency services as an inherently governmental function. While DoDI 6055.6 identifies the F&ES outsourcing prohibition, the absence of narrative regarding this position arguably does little to support current F&ES arrangements of the armed services.

Additionally, none of the armed service directives examined detail the basis for their respective F&ES organizational structures. While this omission possibly provides flexibility to structure F&ES organizational alternatives, it also does little to demonstrate the utility, effectiveness or operational need of organizational alternatives employed by each service.

Considering ongoing Defense transformation initiatives, specifying DoD emergency services as an inherently governmental function in revisions of DoDI 6055 series will provide the armed services with future continuity for respective F&ES organizational arrangements. Likewise, the inclusion of narrative explaining the utility, effectiveness and operational need of specific organizational F&ES alternatives in subsequent revisions of armed service F&ES directives will promote the longevity of each armed service F&ES structure.

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APPENDIX III. SITE VISITS

A. OVERVIEW

An examination of specific Marine, Navy and Air Force installation emergency services was completed by site visits to:

- MCB/MCAS Camp Pendleton (May 2005)
- Marine Corps Air Station Yuma (May 2005)
- Beale Air Force Base (July 2005)
- Naval Air Station Lemoore (July 2005)

Data collection methods included e-mail and telephonic interviews with Fire Chiefs and Officers-in-Charge prior to the conduct of each visit, followed by on-site interviews with installation emergency service key management personnel and firefighters to document the following with respect to each installation and corresponding department(s) visited:

- Installation Description
- F&ES Organizational Structure/Mission
- Jurisdiction
- Training Emphasis
- Manpower
- Department Input

The information pertaining to each Site Visit completed was submitted as a draft for respective Department Officers-in-Charge and Fire Chiefs review to ensure accuracy. Also warranting mention is the rotation of the Camp Pendleton and Yuma ARFF OIC’s during this analysis; WO-2 Hilliard replaced by WO Tarker, and CWO-4

Bond by CWO-3 Lopez. Both replacements occurred due to normal Permanent Change of Station (PCS) rotations.

B. CAMP PENDLETON

1. Installation Description

Camp Pendleton is committed to operating and maintaining the world's finest amphibious training facility. With more than 125,000 acres of varied terrain and 17.1 more miles of shoreline, Camp Pendleton is one of the Department of Defense's busiest training installations.

The base's varied topography, combined with its amphibious training areas, inland training ranges and airspace, offers maximum flexibility for Marine Air Ground Task Forces and other service units that require a realistic combat training environment. Each year more than 40,000 active-duty and 26,000 reserve military personnel from all services use Camp Pendleton's many ranges and training facilities to maintain and sharpen their combat skills.

Each day and night, thousands of Marines, soldiers, sailors and airmen hone their skills from the sea, on land and in the air above the Marine Corps' premiere amphibious training base. Camp Pendleton is home to the I Marine Expeditionary Force and two of its major subordinate commands – the 1st Marine Division and 1st Force Service Support Group. This finely tuned fighting force is the principal user of the base's training facilities.

Camp Pendleton offers a wide array of training opportunities: firing ranges for everything from 9 mm pistols to 155 mm artillery; landing beaches; parachute drop zones; aircraft bombing

and strafing ranges; three mock urban warfare towns; and large maneuver areas for training tactical units. [31]

[31] Camp Pendleton Installation Description, retrieved October 13,

2. Organizational Structure/Mission

Emergency service response aboard Camp Pendleton is supported by two fire departments: the Marine Corps Base (MCB) Pendleton Structural Fire Department (SFD) and the Marine Corps Air Station (MCAS) Pendleton Aircraft Rescue Fire Fighting (ARFF). In general, the ARFF department provides for primary emergency response required for aircraft related emergencies both on and off the Air Station, while the structural department is responsible for all non-aircraft emergencies aboard Camp Pendleton. An overview of each department's emergency service core competencies (based on input from department managers) is provided.

Primary Mission/Core Competencies	Pendleton SFD	Pendleton ARFF
Aircraft Emergency Response		X
Structural Fire Response	X	
EMT/Ambulatory Response	X	
Hazardous Material Response	X	X
Wild Land Fire	X	
Swift Water Rescue	X	
Confined Space Rescue	X	
Motor Vehicle Accident Response	X	

Table 15 - Camp Pendleton F&ES Core Competencies

3. Jurisdiction

The Pendleton SFD and ARFF departments maintain a Mutual Aid Agreement that enables the other to request and receive emergency service augmentation however as noted in

2005 from http://www.globalsecurity.org/military/facility/camp-pendleton.htm

the mission comparison, the departments are specialized in their respective core capabilities and mission responsibilities.

The MCB Pendleton SFD provides response to all of Camp Pendleton (less the air facility unless requested via mutual aid) and municipal areas and regions that border the base via pre-established Mutual Aid agreements with Los Angeles, Orange, San Bernardino, Riverside, and North Counties. The SFD serves a daytime Camp population in excess of 90,000 personnel.

The MCAS ARFF supports over 180 helicopters assigned to Marine Air Groups 39 and 46 Detachment A and a wide variety of other Marine Corps units and visiting aircraft from other branches of the Armed Forces and U.S. coalition partners.

4. Training Emphasis

Both departments usually conduct F&ES training independently. Camp Pendleton's SFD training ensures response to the primary mission responsibilities noted, and specifically emphasizes Hazardous Material Training using their own certified instructors and the Virginia Department of Fires Program.[32] Additionally the SFD's Emergency Medical Service Training is supported through the State of California. Camp Pendleton ARFF partners with Texas A&M University and their Emergency Service Training Institute to provide multidimensional firefighting, emergency medical service, and hazardous material training for their ARFF personnel.

[32] Virginia Department of Fires Program, retrieved October 13, 2005 from http://www.vdfp.state.va.us/

Each department trains to the mission requirements of the other. As noted below, many of the Pendleton SFD Firefighters maintain DoD/NFPA certification as Aircraft Firefighters, and ARFF Marines hold structural firefighting certifications.

Department	Total F&ES Personnel	Structural Firefighter II Certifications	DoD ARFF Certifications
Pendleton SFD	100	100 (100%)	82 (82%)
Pendleton ARFF[33]	43	41 (95%)	43 (100%)

Table 16 - Camp Pendleton F&ES Certifications

Both departments can cross-staff (temporarily assign manpower to the other department for training/experience benefit). However, cross-staffing does not occur, especially since the beginning of the G.W.O.T., which has "sapped Marine ARFF manpower to support deployed emergency service requirements" as noted by WO-2 Hilliard, the Pendleton ARFF Officer-in-Charge.

5. Manpower

An aggregate overview of both the Pendleton ARFF and SFD manpower is provided:

[33] Total includes Management and Administration Staffing

	Management & Administration	**Fire Prevention**	**F&ES**	**Total**
1. DoDI 6055.6 Reference Paragraph	E2.5.14.2	E2.5.14.3	E2.5.14.4	
2. Required Personnel per Reference	9	1	64	74
2a. Civilian	0	0	0	0
2b. Military	5	0	38	43
2c. Total (2a + 2b)	5	0	38	43
3. Difference (2-2c)	-4	-1	-26	-31
4. Reason for Shortfall				
4a. Deployment	3	1	28	32
4b. Sickness or Disability	0	0	0	0
4c. Open Vacancy	0	0	0	0
4d. Reserve Mobilization	0	0	0	0
4e. Unfunded Position	0	0	6	6
4f. Other	1	0	0	1
5. Action to Address Shortfall				
5a. Fill Action Initiated	0	0	18	18
5b. Reserve Backfill	0	0	13	13
5c. Temp Position	0	0	0	0
5d. Waiver	0	0	0	0
5e. Other	0	0	0	0

Table 17 - MCAS Pendleton ARFF Manpower

	Management & Administration	**Fire Prevention**	**F&ES**	**Total**
1. DoDI 6055.6 Reference Paragraph	E2.5.14.2	E2.5.14.3	E2.5.14.4	
2. Required Personnel per Reference	8	7	98	113
2a. Civilian	9	4	100	113
2b. Military	0	0	0	0
2c. Total (2a + 2b)	9	4	100	113
3. Difference (2- 2c)	+1	-3	+2	0
4. Reason for Shortfall				
4a. Deployment	0	0	0	0
4b. Sickness or Disability	0	0	2	2
4c. Open Vacancy	0	0	0	0
4d. Reserve Mobilization	0	0	2	2
4e. Unfunded Position	0	1	0	1
4f. Other	0	0	0	0
5. Action to Address Shortfall				
5a. Fill Action Initiated	0	2	8	10
5b. Reserve Backfill	0	0	0	0
5c. Temp Position	0	0	0	0
5d. Waiver	0	0	0	0
5e. Other	0	1	0	1

Table 18 - MCB Pendleton SFD Manpower

6. Department Input

Both the SFD Chief (Mr. Tim Hoover) and the ARFF OIC (WO-2 Andrew Hilliard) stated that Pendleton’s current emergency service organizational structure provides maximum flexibility and response to the Commander, MCB Pendleton and the Commander, MCAS Pendleton respectively. From a multiple command perspective, emergency service focus of each command differs, thus the dual emergency structure reflects the responsiveness to the responsibilities of each Commander. Both the SFD and ARFF members interviewed stated their installation emergency services as specialized to meet differing specific command needs, not redundant or duplicative.

C. MCAS YUMA

1. Installation Description

MCAS Yuma is the busiest air station in the Marine Corps and the third busiest in the Naval service. It is also one of the largest single contributors to the economy of Yuma County. Its primary mission is to support aerial weapons training for the Atlantic and Pacific Fleet Marine Forces and Navy, and to serve as a base of operations for Marine Aviation Weapons and Tactics Squadron-1, and Third MAW units, to include Marine Aircraft Group-13. Yuma International Airport (YUM) is a commercial service airport at a shared-use airfield with Marine Corps Air Station, Yuma. YUM is owned by the County of Yuma, and operated by the Yuma County Airport Authority, Inc. (YCAA).

As the scheduling authority for the Yuma Training Range Complex, MCAS Yuma provides fleet squadrons access to 10,000 square miles of special-use airspace designated for military aviation training and almost 2,000 square miles of underlying land reserved as aerial bombing and gunnery ranges. Collectively, this complex is the largest tactical aviation training range utilized by the Marine Corps. Each year, approximately 50 aviation units deploy here to train on Yuma's 2.8 million-acre range complex. These deployments, ranging from a few days to weeks, bring 13,000 personnel and 1,000 aircraft to Yuma annually. In addition, MCAS is the only joint-use air station in the Marine Corps. Through an agreement between the Marine Corps and Yuma County, MCAS provides all air traffic control, crash crew services, security, and maintains the runways and taxiways for both MCAS and Yuma International Airport.[34]

2. Organizational Structure/Missions

MCAS Yuma's emergency services compare in organizational structure (separate SFD/ARFF) with that

[34] MCAS Yuma installation Description, retrieved October 13, 2005 from http://www.globalsecurity.org/military/facility/yuma.htm

examined at Camp Pendleton, however the Yuma emergency services differed considerably from Pendleton in the scope of emergency response; both departments respond *mutually* to "all" emergencies, whether they are structural or aircraft related (SFD units stand-by in the event of aircraft emergencies; ARFF units only respond to non-ARFF emergencies if manning and equipment in excess of DoDI 6055.6 requirements for the airfield operations are available).

As with the Camp Pendleton Site Visit, a review of each department's emergency service core competencies (from interviews with key management personnel) is provided for review.

Primary Mission/Core Competencies	**Yuma SFD**	**Yuma ARFF**
Aircraft Emergency Response	X	X
Structural Fire Response	X	X
EMT/Ambulatory Response	X	
Hazardous Material Response	X	X
Wild Land Fire	X	X
Confined Space Rescue	X	X
Motor Vehicle Accident Response	X	X

Table 19 - MCAS Yuma F&ES Core Competencies

3. Jurisdiction

Both departments maintain joint full-spectrum emergency service jurisdiction aboard the air station, within designated areas adjacent the air station through mutual aid agreement with the City of Yuma, and are responsible to respond to aircraft emergencies occurring within 15 nautical miles of MCAS Yuma.

4. Training Emphasis

Although the Yuma departments do not cross-staff, well-rounded practical experience that transcends classroom training/certification and planned exercises/drills is gained by all Yuma firefighters through the emphasis of joint response to a wide-array of actual emergency situations.

Through partnership with Arizona Western Community College, the MCAS Yuma ARFF provides for a broad spectrum of F&ES, Emergency Medical Technician (EMT) and Hazardous Material training to Yuma's military and civil service firefighters alike.

In addition to formal classroom environment training, Yuma's ARFF Emergency Medical Technicians (EMT's) are sent for "ride-along time" with commercial sector paramedics serving the City of Yuma and the MCAS Yuma Fire Department. Additionally, ARFF EMT's also receive "clinical time" in the Emergency Room of Yuma Regional Medical Center and Installation Branch Medical Clinic whenever possible to provide practical, hands-on EMT training for uniformed Marine firefighters.

As was noted during the Pendleton Site Visit, each Yuma department trains to the mission responsibilities of the other. However, Yuma's classroom training reinforces skills that are required to sustain the performance of jointly executed full spectrum F&ES response.

Department	Total F&ES Personnel	Structural Firefighter II Certifications	DoD ARFF Firefighter Certifications
Yuma SFD	31	31 (100%)	29 (94%)
Yuma ARFF	53	53 (100%)	53 (100%)

Table 20 - MCAS Yuma F&ES Certifications

5. Manpower

An aggregate overview of both the Yuma ARFF and SFD manpower is provided:

	Management & Administration	**Fire Prevention**	**F&ES**	**Total**
1. DoDI 6055.6 Reference Paragraph	E2.5.14.2	E2.5.14.3	E2.5.14.4	
2. Required Personnel per Reference	13	1	99	113
2a. Civilian	0	0	0	0
2b. Military	3	1	53	57
2c. Total (2a + 2b)	3	1	53	57
3. Difference (2 – 2c)	-10	0	-46	-56
4. **Reason for Shortfall**				
4a. Deployment	0	0	41	41
4b. Sickness or Disability	0	0	7	7
4c. Open Vacancy	0	0	0	0
4d. Reserve Mobilization	0	0	0	0
4e. Unfunded Position	0	0	0	0
4f. Other	0	0	0	0
5. **Action to Address Shortfall**				
5a. Fill Action Initiated	0	0	0	0
5b. Reserve Backfill	0	0	0	0
5c. Temp Position	0	0	0	0
5d. Waiver	0	0	0	0
5e. Other	0	0	0	0

Table 21 - MCAS Yuma ARFF Manpower

	Management & Administration	Fire Prevention	F&ES	Total
1. DoDI 6055.6 Reference Paragraph	E2.5.14.2	E2.5.14.3	E2.5.14.4	
2. Required Personnel per Reference	5	4	33	42
2a. Civilian	4	4	31	39
2b. Military	0	0	0	0
2c. Total (2a + 2b)	4	4	31	39
3. Difference (2 – 2c)	-1	0	-2	-3
4. Reason for Shortfall				
4a. Deployment	0	0	0	0
4b. Sickness or Disability	0	0	0	0
4c. Open Vacancy	0	0	0	0
4d. Reserve Mobilization	0	0	0	0
4e. Unfunded Position	1	0	2	3
4f. Other	0	0	0	0
5. Action to Address Shortfall				
5a. Fill Action Initiated	0	0	0	0
5b. Reserve Backfill	0	0	0	0
5c. Temp Position	0	0	2	2
5d. Waiver	0	0	0	0
5e. Other	0	0	0	0

Table 22 - MCAS Yuma SFD Manpower

6. Department Input

Chief Bailey (MCAS Yuma SFD Chief) and CWO-4 Roger Bond (MCAS Yuma ARFF OIC) attributed their joint response emphasis to the needs of the Yuma Command and their working relations, which more likely than not, are impacted by the physical location of both departments - the same facility. The co-location of both departments enables the sharing of F&ES resources, promotes cross-training and enhances opportunities for emergency service education. The co-location of the departments is possible due to the small size of the Yuma installation proper. (On Camp Pendleton,

multiple satellite departments are required in order to meet established NFPA and DoD specified response times).

D. BEALE AIR FORCE BASE

1. Installation Description

> The 9th Reconnaissance Wing is responsible for providing national and theater command authorities with timely, reliable, high-quality, high-altitude reconnaissance products. To accomplish this mission, the wing is equipped with the nation's fleet of U-2 reconnaissance aircraft and associated support equipment. The wing also maintains a high state of readiness in its combat support and combat service support forces for potential deployment in response to theater contingencies. The 9th Reconnaissance Wing is composed of more than 3,000 personnel in four groups at Beale and multiple overseas operating locations.[35]

2. Organizational Structure/Missions

The Beale Air Force Base Fire Department provides full spectrum emergency services to the installation. This department’s organizational structure is comprised of both Civil Service and uniformed Airmen operating *jointly within the same department*.

An overview of the Beale Fire Department emergency service core capabilities (input from key department personnel) is provided for review.

[35] Retrieved October 13, 2005 from http://www.beale.af.mil/9RW/mission.asp

Primary Mission/Core Competencies	Beale AFB Fire Department
Air Emergency Response	X
Structural Fire Response	X
EMT Response (Basic)	X
Hazardous Material Response	X
Wild Land Fire	X
Confined Space Rescue	X
Motor Vehicle Accident Response	X

Table 23 - Beale AFB F&ES Core Competencies

3. Jurisdiction

The Beale department has primary jurisdiction for Beale Air Force Base collectively, and may respond (or receive assistance) through mutual aid agreements with 12 local civil departments that include Wheatland, Marysville, Yuba City, Linda, OliveHurst and Plumas Brophy. The Beale Fire Department also provides for primary emergency response to several rural routes and highways that buttress the base.

4. Training Emphasis

In a manner similar to the Marine departments examined, the Beale Department conducts full spectrum F&ES classroom instruction and drills to ensure their firefighters are prepared to respond to a multitude of emergency scenarios. An additional commonality noted by the author regarding USAF and Marine F&ES training was the emphasis for Air Force firefighters (military and civil service alike) to achieve emergency service certifications and licensing to hold specific billets within the department.

Department	Total F&ES Personnel	Structural Firefighter II Certifications	DoD ARFF Firefighter Certifications
Beale FD	79	79 (100%)	68 (86%)

Table 24 - Beale F&ES Certifications

5. Manpower

The organizational structure of the Beale Department is depicted for review.

	Management & Administration	Fire Prevention	F&ES	Total
1. DoDI 6055.6 Reference Paragraph	E2.5.14.2	E2.5.14.3	E2.5.14.4	
2. Required Personnel per Reference	11	2	89	102
2a. Civilian	5	2	31	38
2b. Military	6	0	48	54
2c. Total (2a + 2b)	11	2	79	92
3. Difference (1 – 2c)	0	0	-10	-10
4. Reason for Shortfall				
4a. Deployment	0	0	0	0
4b. Sickness or Disability	0	0	0	0
4c. Open Vacancy	0	0	0	0
4d. Reserve Mobilization	0	0	0	0
4e. Unfunded Position	0	0	10	10
4f. Other	0	0	0	0
5. Action to Address Shortfall				
5a. Fill Action Initiated	0	0	0	0
5b. Reserve Backfill	0	0	0	0
5c. Temp Position	0	0	4	4
5d. Waiver	0	0	0	0
5e. Other	0	0	0	0

Table 25 - Beale Fire Department Manpower

6. Department Input

Interviews with the Beale Fire Chief, Mr. Randal Taylor, and the Department Deputy Chief, Master Sergeant David Romero, yielded insight to overall “good working

relations" between the military and Civil Service department manpower. Both the Chief and his deputy cited the following primary benefits to this emergency service organizational arrangement as noted:

- Continuity: provided by civil service manpower, ensuring full F&ES support when military members must deploy.
- Commonality: The majority (88%) of Beale's Civil Service firefighters had prior military service.
- Experience/Mentoring: The majority of Beale's Civil Service manpower had 5 or more years with the installation department. Each Civil Service firefighter was noted as willingly able to mentor and provide training and experience/insight to junior firefighters.

Individual interviews with 10 (5 military/5 civil service) Beale firefighters and Beale's collective on duty shift (Section A) via a focus group-led discussion revealed, in general, the firefighters found the same benefits in their organizational arrangement as the management. Of the twenty Section A firefighters interviewed, one firefighter detailed a hardship with the integrated military/civil service organizational structure, being the "leadership challenges" posed to senior Air Force Military firefighters with respect to working with civil service firefighters with tenure and experience advantages.

During the focus group interview the Beale firefighters readily admitted that there are distinct differences in civil service and military leadership standards and regulations; but also noted the differences are expected and understood, and do not pose challenges to the discipline, morale or teamwork of the department.

E. NAVAL AIR STATION LEMOORE

1. Installation Description

With the transfer of NAS Miramar to the US Marine Corps, NAS Lemoore now hosts the Navy's entire west coast fighter/attack capability. NAS Lemoore was built “from the ground up” as a Master Jet Base, and has several operational advantages, and relatively few constraints, as a result.

NAS Lemoore is the Navy's newest and largest master jet air station. The Pacific Strike Fighter Wing with its supporting facilities are home ported here. The primary aircraft based at NAS Lemoore is the F/A-18 Hornet Strike Fighter. In November, 1999, NAS Lemoore received its first F/A-18 E/F Super Hornets, which will eventually replace the F-14 Tomcat in fleet service as an air superiority fighter as well as assume, in a different configuration, the role of older F/A-18 Strike Fighters. Currently, there are a total of 175 Hornets and Super Hornets home-based at NAS Lemoore operating from two Fleet Replacement [training] Squadrons and ten Fleet [operational] Squadrons. In addition to the Hornet and Super Hornet population, NAS Lemoore also operates three UH-1N Search and Rescue Helicopters and hosts the UC-12B logistics aircraft.

The station encompasses almost 30,000 acres, of which 18.784 are owned outright by the Navy, and 11,020 more are used under air easement contract. The farmers owning or renting the land may raise crops in areas under the air easement but can only do so with the provision that no structure more than 25 feet in height – or any permanent living quarters – be built there. The operations and runway areas are located 7 miles from the administrative and housing areas of the base. Considering all population working, living or eligible for service on the base, NAS Lemoore is the fourth largest city in Kings County.

The "Green Belt" is an area three miles wide adjacent to and extending completely around the Station. It was established by the Kings and Fresno Counties Planning Commissions to control all urban development in order to prevent future

problems incident to jet aircraft noise and population build-up adjacent to the station. The U.S. Navy presently out-leases 12,737 acres, resulting in revenues to the U.S. Government totaling over $1.3 million dollars a year and in land improvements valued at over $1 million dollars per year.

Located in a rich agricultural area, NAS Lemoore offers sailors, Marines and civilians a small hometown atmosphere of rural America. Yet surrounding Lemoore are California's playgrounds - Los Angeles, San Francisco, the Sierra Mountains and the Pacific Ocean. NAS Lemoore is located in California's San Joaquin Valley, primarily in Kings County, 40 miles south of Fresno, 14 miles west of Hanford, and 7 miles west of Lemoore on State Highway 198. Fresno is a city of approximately 421,000 people while Hanford, the seat of Kings County and the location of most of the local government agencies, is approximately 42,000 people in size and growing rapidly. Lemoore’s population is half of Hanford’s, at 18,361.

Commissioned in 1961, NAS Lemoore is the newest air station in the Navy. Two offset parallel runways were laid out 4,600 feet apart. Aircraft parking and maintenance hangars are aligned between the 13,500 foot runways. Separated from the hangars by an underpass beneath taxiway A, the remainder of the air operations area is located directly southeast.

In July, 1998, NAS Lemoore was selected as the West Coast site for the Navy’s newest strike-fighter aircraft, the F/A-18E/F Super Hornet. This action brings approximately 92 additional aircraft, 1,850 additional active duty personnel and 3,000 family members to NAS Lemoore and several associated facility additions or improvements.

The Navy will bring four new fleet squadrons to Naval Air Station Lemoore over the period 2001-2004. Additional military staffing will be required at Aircraft Intermediate Maintenance

Detachment, Strike Fighter Weapons School Pacific, and Naval Air Maintenance Training Group to support this effort.

There are over 40 tenants onboard NAS Lemoore. The major ones include: Commander, Strike Fighter Wing Pacific Fleet; Carrier Air Wings 2, 9, 11, 14; Strike Fighter Weapons School, Pacific; Strike Fighter Squadrons 22, 25, 94, 97, 113, 115, 122, 125, 137, 146, 147, and 151; Fleet Aviation Specialized Operational Training Group, Pacific Fleet ; Marine Aviation Training Support Group; Naval Air Technical Services Facility Detachment; Naval Aviation Engineering Service Unit; Naval Air Maintenance Training Group; Naval Hospital and Branch Dental Clinic; Naval Training Systems Center; Trainer Systems Support Activity and Naval Air Reserve Center and Aircraft Intermediate Maintenance Detachment.

The relocation of fighter/attack assets, particularly F/A-18 squadrons from NAS Miramar to NAS Lemoore imposed additional airspace requirements at and near NAS Lemoore. The primary airspace resource used by Lemoore fighter missions is the R-2508 complex. The Foothills MOA is used to marshal aircraft prior to entering R-2508. In addition, approximately ten sorties per day launch from Lemoore and proceed to the Fallon complex. The proximity and volume of airspace within the R-2508 complex is convenient and operationally suitable.

The growth in activity in the area adjacent to the complex has exacerbated a long-standing dispute between the managers of the R-2508 complex and the National Park Service regarding over flights of the Kings Canyon area. Recent agreements to limit over flights of the area in order to reduce perceived intrusions on the park were negotiated with the concurrence of senior leadership of both the local test communities and the primary operational user (COMNAVAIRPAC). Operational impacts are thus far not determined; perceptions of the agreement vary and appear to reflect the source. Some users note that the airspace can be used below the agreed FL180 “standard mission” floor by simply requesting it,

while anecdotal comments attributed to groups and individuals opposed to military use of the airspace indicate that they believe they have effectively denied use of the area to the military.

NAS Lemoore has long considered development of a MOA directly over the field. While this development has the potential to offer relief to constrained airspace, and especially to offer usable space for "low-end" activities (i.e. basic flight maneuvers, functional check flights), three factors will need to receive serious consideration prior to proceeding with any serious planning. The MOA must be evaluated for its potential impact on NAS Lemoore itself. Lemoore is relatively unconstrained by local operational ATC restrictions. Development and use of an overhead MOA may impose limitations on the airfield that outweigh the MOA's operational utility. The surrounding civil communities, while not immediately adjacent, are affected by ATC and airspace issues at Lemoore. Adjacent FAA-managed ATC facilities would have to be offered the opportunity to participate and have their concerns addressed in any development process, while the environmental effects of a new MOA, unless floored at an extraordinarily high level, would certainly invite a spirited public debate. An overhead MOA at Lemoore may offer only limited vertical airspace. Traffic bound to and from the Los Angeles area has been identified as a limitation to establishment of SUA/ATCAA at higher than low-sector (FL 230) altitudes. The area’s floor could be environmentally constrained (see above); in addition, discussions with airspace managers indicated that an existing tall transmitting tower could be a factor in the availability of low altitude airspace.[36]

[36] NAS Lemoore Installation Description, retrieved October 13, 2005 from http://www.globalsecurity.org/military/facility/lemoore.htm

2. Organizational Structure/Missions

Lemoore's Department (unlike Pendleton, Yuma or Beale) relies exclusively on Civil Service manpower to support full spectrum emergency service response, to include emergency service to the installation and tactical military aircraft (predominantly the F-18E/F Squadrons).

An overview of the Lemoore emergency service core capabilities (based on input from key department management personnel) is provided for aggregate review.

Primary Mission/Core Competencies	NAS Lemoore Fire Department
Aircraft Emergency Response	X
Structural Fire Response	X
EMT Response (Basic)	X
Hazardous Material Response	X
Wild Land Fire	X
Confined Space Rescue	X
Medium Rescue	X
Agricultural Fire Response	X
Motor Vehicle Accident Response	X

Table 26 - NAS Lemoore F&ES Core Competencies

3. Jurisdiction

In addition to providing all emergency services aboard the installation, the Lemoore SFD maintains mutual aid agreements with both King and Fresno Counties. Lemoore Department also has primary emergency response to 10 miles of highway 198 (adjacent the installation).

4. Training Emphasis

Lemoore's Department, much as the previous departments examined, conducts training to ensure responsiveness to the probable emergency service requirements of the installation. Classroom F&ES training and frequent drills

coupled with response to a myriad of emergencies has enabled the department to develop F&ES core competencies required to serve the installation.

While the majority of training is facilitated on the air station within the department (senior personnel to junior, in accordance with DoD complaint NFPA/ProBoard Standards), Lemoore occasionally partners with Marine Corps Logistics Base Barstow and China Lake Naval Air Weapons Testing Center to facilitate emergency service training requirements.

In addition to training conducted internally, Lemoore's Fire Department augments aircraft firefighting training conducted aboard the installation by the Naval Air Technical Training Center.

Department	Total F&ES Personnel	Structural Firefighter II Certifications	DoD ARFF Firefighter Certifications
Lemoore FD	34	33 (97%)	32 (94%)

Table 27 - Lemoore F&ES Certifications

5. Manpower

An aggregate overview of Lemoore's F&ES manpower is provided for review.

	Management & Administration	Fire Prevention	F&ES	Total
1. DoDI 6055.6 Reference Paragraph	E2.5.14.2	E2.5.14.3	E2.5.14.4	
2. Required Personnel per Reference	3	5	40	48
2a. Civilian	3	5	34	39
2b. Military	0	0	0	0
2c. Total (2a + 2b)	3	5	34	42
3. Difference (2-2c)	0	0	-6	-3
4. Reason for Shortfall				
4a. Deployment	0	0	0	0
4b. Sickness or Disability	0	0	0	0
4c. Open Vacancy	0	0	6	6
4d. Reserve Mobilization	0	0	0	0
4e. Unfunded Position	0	0	0	0
4f. Other	0	0	0	0
5. Action to Address Shortfall				
5a. Fill Action Initiated	0	0	6	6
5b. Reserve Backfill	0	0	0	0
5c. Temp Position	0	0	0	0
5d. Waiver	0	0	0	0
5e. Other	0	0	0	0

Table 28 - NAS Lemoore Fire Department Manpower

6. Department Input

With respect to organizational composition of fire departments, Lemoore’s Chief (Jade Van Dyke) advocates “consistency” in department organizational structure to benefit operational response, management and administration of the Lemoore Department.

The primary advantage Chief Van Dyke cited for an all civil service department was stability and continuity: “I do not have to worry about constant deployments disrupting department manpower with the labor structure the Navy has.”

The Chief also commented on his perspective of the advantage of maintaining one department per installation:

> Emergency incident command is enhanced in consolidated departments, whether the labor in the fire department is 100% military, 100% civilian or a mixture of both. Consider several of the mass casualty and terrorist attack drills we have had aboard Lemoore. Multiple agencies respond to these training scenarios, and from my experience, the more agencies involved, the more challenging and dynamic incident command becomes. Many of these difficulties stemmed from a lack of working familiarity between the Fire Department, Security Forces, and Medical Units - we (the Lemoore Command) have worked to improve multiple agency response coordination and incident command. Even with the progress that we have made, challenges do still exists. As the Fire Chief, I would not want to have to consider challenges posed by multiple fire departments jointly responding.

APPENDIX IV. DOD F&ES MANNING REQUIREMENTS

E3. ENCLOSURE 3

MINIMUM STAFFING REQUIREMENTS FOR MANAGEMENT AND ADMINISTRATIVE FIRE AND EMERGENCY SERVICES POSITIONS

	POSITIONS	NUMBERS OF FIRE COMPANIES[2]				
		1	2	3	4	5 or more
1.	Fire Chief	1	1	1	1	1
2.	Deputy Fire Chief				1[3]	1
3.	Assistant Fire Chief (Shift Supervisor)		2	2	2	2
4.	Assistant Fire Chief (Training)			1[4]	1	1
5.	Assistant Fire Chief (Fire Prevention). Where four or more fire prevention personnel are required, an assistant fire chief (fire prevention) is authorized.					
6.	Battalion/District/Station Chief (Supervisory Fire Fighter). Additional supervisors may be required due to the overall size and large geographic service areas at large or consolidated installations, where the physical dispersion of fire stations makes it unmanageable for one shift supervisor to provide immediate direction of day-to-day operations.					

2 Figures reflect only those personnel necessary to meet fire suppression needs (staffed fire apparatus) and do not consider personnel required for fire prevention, fire alarm communications, management and administration, and personnel assigned for maintenance of fixed fire protection systems.

3 Deputy Fire Chief. Position may be authorized by DoD Component.

4 Assistant Fire Chief (Training). Position may be authorized by DoD Component.

Figure 4. Management and Administration Staffing

E4. ENCLOSURE 4

MINIMUM STAFFING REQUIREMENTS FOR FIRE PREVENTION POSITIONS

DETERMINED ON AREA OF SPACE REQUIRING FIRE RISK SURVEYS (IN THOUSANDS OF SQ. FT).[5]	STAFFING REQUIREMENTS[6]
250 - 1,000	1
1,000 - 3,000	2
3,000 - 5,000	3
5,000 - 8,000	4
8,000 - 11,000	5
11,000 - 14,000	6
14,000 - 17,000	7
Above 17,000[7]	

5 Total square footage of buildings (excluding family housing), continuously used outside storage areas (continuous movement of equipment and/or supplies to and from the storage site), ships and waterfront facilities.

6 These baseline-staffing figures may be increased or decreased depending on the DoD Component's assessment of the demand for full-time fire prevention personnel.

7 The number of fire prevention personnel for areas in excess of 17,000 square feet shall be determined on a case-by-case basis by the DoD Component.

Figure 5. Staffing for Fire Prevention Positions

E5. ENCLOSURE 5

MINIMUM STAFFING REQUIREMENTS FOR
FIRE AND EMERGENCY SERVICES APPARATUS

FIRE APPARATUS IDENTIFIERS	STAFFING REQUIRED PER APPARATUS
1. ARFF Apparatus	3
2. Structural Apparatus	4
3. Aerial Fire Apparatus	4

Figure 6. Staffing for F&ES Apparatus

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APPENDIX V. PROCESS ACTION TEAM FINAL REPORT – 1998

AIRCRAFT RESCUE & FIRE FIGHTING (ARFF)

AND

STRUCTURAL FIRE FIGHTING (SFF)

INTEGRATION

PROCESS ACTION TEAM

FINAL REPORT

A Fire and Emergency Services Plan

June 1998

Executive Summary

The 1997 Active Duty Force Structure Review Group (ADFSRG) identified possible savings from integrating the military aircraft rescue fire fighting organizations (ARFF) with the civilian structural fire fighting departments (SFF). A Process Action Team (PAT) was convened to study the ADFSRG recommendations and ensure the Marine Corps was utilizing their fire and emergency services personnel in the most efficient and effective manner. After conducting extensive site visits at the Marine Corps bases and stations, the PAT team concluded integration was feasible and provided needed personnel savings for reinvestment and modernization. In addition, integration provided the full fire and emergency services training and experience needed for our deployable Marines.

The PAT recommends full integration of the ARFF organizations and SFF departments as a means to provide the personnel savings identified by the ADFSRG and the Commandant of the Marine Corps. Integration also, and perhaps more importantly, increases the fire and emergency service capabilities, skills and opportunities for our Marines and actually reduces the station dependence on the Fleet Marine Force (FMF) fire fighters. The PAT also recommends the introduction of a larger ARFF vehicle at selected air stations. The larger vehicle will provide additional personnel savings while maintaining the same ARFF capabilities. The PAT unanimously supports the following recommendations:

1. Fully integrate the ARFF and SFF departments throughout the Marine Corps bases and stations. Integration will:
   - provide an initial personnel savings of 58 Marines and 17 civilians;
   - reduce the air station's dependency on the FMF fire fighters; and
   - reduce redundancy of effort in the Marine Corps fire and emergency service programs.

2. Procure a 3000 gallon capacity ARFF vehicles for Marine Corps Air Stations Cherry Point, Yuma, and Miramar to replace a portion of the existing 1000 gallon P-19 fleet. The new vehicles will:

   - provide an additional personnel savings of 34 Marines and four civilians;
   - will reduce the P-19 inventory by 12 vehicles by adding six of the 3000 gallon capacity vehicles; and
   - will save $1.2M in SLEP costs of the P-19's which can be used to offset the cost of the six 3000 gallon capacity vehicles.

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Attachments

Background

The Marine Corps Active Duty Force Structure Review Group (ADFSRG) proposed contracting out the aircraft rescue fire fighting (ARFF) mission at Marine Corps Air Stations. Contracting out would provide a structure savings of 410 Marines. When informed contracting out of the fire and emergency services was not permitted on a military installation (10 U.S.C. 2465), the ADFSRG proposed merging the two separate fire and emergency service organizations (ARFF and Structural Fire Fighting) at each installation. The ADFSRG estimated integration would save 20% of the station ARFF billets and 10% of the civilian Structural Fire Fighting (SFF) billets. The Commandant of the Marine Corps approved the recommendation of the ADFSRG, but provided additional guidance to study the integration due to the varying fire and emergency requirements at our bases and stations. With this guidance, a Process Action Team (PAT) was formed to conduct the study and prepare the final report.

The PAT was formed in October of 1997 and included representatives from Headquarters Marine Corps, 3d Marine Air Wing, Marine Corps Air Station Cherry Point, Marine Corps Air Station Yuma and the two major unions representing the civilian fire fighters. PAT members are listed under attachment (1). The PAT was provided with one strategic objective: "To ensure the Marine Corps is effectively utilizing its manpower and equipment resources in the area of Fire and Emergency Services" (CMC 080001Z of Oct 97). The PAT evaluated integration to determine potential manpower savings, equipment savings, overtime reductions, reduced Fleet Marine Force (FMF) dependency, enhanced training for the FMF fire fighter and obstacles associated with integration. The PAT recognized the underlying theme of the study was to provide structure savings for reinvestment and monetary savings for modernization of equipment and weapons. The strategic and specific objectives of the PAT are listed under attachment (2).

The Marine Corps has 410 station Marine fire fighting billets, 540 FMF fire fighting billets, 710 U.S. civilian fire fighting billets and 220 Master Labor Contract (Japanese National) fire fighting billets. This represents 10% of the overall Department of Defense (DoD) fire fighting force. The Marine Corps also owns approximately 10% of all the major fire fighting emergency vehicles within the DoD inventory.

The Marine Corps is the only military service with separate ARFF and SFF departments. The recommendation to integrate the two departments is not new. In 1979, a DoD study of fire protection policy, commissioned by the Assistant Secretary of Defense, Manpower, Reserve Affairs and Logistics concluded the following:

"Civilian and military fire fighters did not interface in the Marine Corps. Military fire fighters were assigned CFR (crash, fire, rescue) duties while civilians performed structural duties. This concept was employed for wartime contingencies; however military fire fighters are not receiving structural experience or training. In addition, manpower authorizations could be reduced by using the military/civilian concept now employed by the Army and Air Force." (A Study of Fire Protection Policy, p. V-29)

When BRAC closed the Marine Corps ARFF training facility in Memphis, the Marine Corps moved its fire fighting MOS training to the joint fire fighting academy at Goodfellow AFB. Military personnel now receive 66 days of training which covers structural fire fighting, hazardous materials emergency response and aircraft rescue fire fighting. Personnel completing this training receive DoD certifications but are not able to utilize their structural training if only assigned ARFF duties. The civilian fire fighters use the same DoD certification program by participating in Goodfellow's correspondence program.

Integration will provide the FMF fire fighting personnel with the structural fire fighting and emergency services experience required during deployments. Each Marine Wing Support Squadron (MWSS) has 18 designated structural fire fighting billets. The fire fighters in each MWSS's are receiving extensive ARFF experience but limited SFF and emergency services experience at this time. Past operational deployments have indicated the MWSS fire fighting personnel on deployment will provide SFF and emergency services as well as ARFF services.

On-Site Visits

The PAT conducted 11 site visits from October 1997 through January 1998. The locations and dates of the site visits are included under attachment (3). Representatives from MCAS Futema, MCB Camp Butler and MCAS Iwakuni attended the site visit at MCAF Kaneohe Bay. Individual in-briefs and out briefs were provided for each Command visited.

Process

The PAT initially evaluated the fire and emergency services mission requirements for each installation and analyzed the manpower and equipment requirements to meet those missions. The PAT also addressed the positive and negative aspects of integration with the local Command representatives. At that point, the PAT and local Command representatives developed a integrated core capability to operate both the SFF and ARFF

requirements. The core capability provided both manpower and equipment necessary to operate for 30 days in the event the FMF fire fighters had to fully deploy. The core organization frees the FMF fire fighters to deploy while maintaining the necessary protection for the base and station. The core organization may require the remaining Marines and the civilians to work some overtime until additional personnel are reassigned or reserve units are activated. However, the core organization reduces the station dependence on the FMF fire fighters. Finally, the PAT added the FMF fire fighters back to core capability to show how the organization could function when the FMF is not deployed. The additional personnel allow for full ARFF and SFF staffing, back-up support, significantly reduced overtime, military training requirements and training/experience for the FMF fire fighters.

During the site visits, the PAT found the ARFF and SFF departments had more in common than expected. There was duplication in training programs, administration, budget/purchasing, staffing, dispatching, fire extinguisher maintenance, public education, equipment, and services. The PAT recognized integration of the fire departments could produce a more effective and efficient Fire and Emergency Services.

The PAT reviewed alternative proposals presented by the installation Fire Chiefs and station ARFF Officers. Generally the alternative proposals involved partial integration while maintaining separate ARFF and SFF organizations. All the proposals were analyzed by the PAT to determine the feasibility compared to full integration. The PAT agreed the proposals were a good start towards integration, but fell well short of full integration. The PAT recognizes full integration is not an easy decision and that significant change is not easily accepted in an occupation that is deep rooted in tradition. The recommendation to fully integrate was made based on the need for manpower savings, equipment savings, training and experience for the MWSS fire fighters and the realization the Marine Corps can no longer afford to do business in the same manner.

The following is a list of integration advantages and disadvantages that were addressed during the on-site visits.

Advantages:

More efficient
Cost effective
Improved training and experience for MWSS Marines
Improved customer services
No duplication of services
Multi-faceted fire and emergency services

Overtime reduction
Increased cross training
Increased communication
Re-investment of station billets into the FMF
Justification against contracting out
Quality of life improvement
Flexibility for management

Disadvantages:

Manpower reductions
Growth path for Marines and civilians
Up-front costs (training, facilities, equipment)
Cultural concerns
Morale
Marines working overtime
May reduce station Warrant Officer billet
Scheduling for military training and obligations
Terminology differences
Unit cohesion
Loss of war fighting edge
Rotation of military personnel
Increase in civilian pay
Command and control of the organization (MCAS/MCB)

All the disadvantages were addressed at each installation and none of the disadvantages was viewed as a show stopper. This certainly does not mean there won't be problems or that integration will be easy. However, with the cooperation of all parties concerned, the PAT believes integration can work.

Issues

Warrant Officer Split. The National Technology Transfer and Advancement Act of 1995 mandated that the DoD use existing voluntary consensus standards (15 U.S.C. 272(b)). Within the fire and emergency services field, the National Fire Protection Association codes and standards are the recognized consensus standards. DoDI 6055.6, Fire & Emergency Services Program, requires all fire and emergency services personnel to be certified at their current position based on the appropriate NFPA standard. Under the current system, the Marine Corps continues to select and place Chief Warrant Officers (CWOs) from the Expeditionary Airfield occupational specialty into the position of ARFF Officer. Unfortunately, these CWOs are not qualified under today's standards. CWOs selected from other than the ARFF occupational specialty could attend the Goodfellow AFB training school to gain the required technical expertise. However, the CWOs will only be trained to an entry fire fighter level. This

does not provide the training and experience needed to run a fully integrated fire and emergency services department. As a result, The PAT believes the SFF Fire Chief should fill the Fire Chief position until the MOS split is completed.

Cultural Change. There were concerns on the working relationship between the military and the civilians in an integrated organization. Will the civilians take orders from the military? Will the military take orders from civilians? The Union represents the civilians, who will represent the military? Will integration reduce the military war fighting edge because the civilians were not as disciplined? These and other similar cultural issues were discussed at length. However, the fact remains the military and the fire and emergency service has a chain of command; we all take orders. The two organizations are by far more alike than different. Each organization is unique in their field but both have the same mission; to establish and maintain a fire and emergency service organization that prevents loss of life, injury to personnel, loss of government property and damage to the environment from fires or hazardous material incidents.

Category I FAP Agreement/Equipment. At the installations supported through the Fleet Assistance Program (FAP), the PAT recommended that all MWSS fire fighting equipment and vehicles are sent to the station units as part of the FAP agreement. With both the personnel and equipment in one location, it will be easier to maintain the equipment and vehicles in a combat ready state. The LM-2 reports will provide the MWSS commanders with readiness status of their equipment and vehicles.

Hot Spot. The ARFF regulations require that an immediate response alert position (hot spot) is manned during normal flight operations and during PPR flight operations. The Marine Corps mans one major ARFF vehicle for immediate response alert. In accordance with the regulations, no fire and emergency services personnel will stand more than 8 hours of immediate response alert during a 24 hour watch. This could create scheduling problems since the civilians fire fighters work 8 hours and are in stand-by status for the remaining 16 hours (the 16 hour stand-by is at a reduced rate of pay). The PAT agreed this could be handled by management to make sure personnel do not stand immediate response alert for more than 8 hours out of a 24 hour period.

Personnel Reductions. All personnel reductions for civilian personnel should be handled through attrition with the savings utilized for moderization. All military billet savings should be re-invested back into the Marine Corps in accordance with the ADFSRG recommendations.

Growth Path for Marines and Civilians. This issue must be addressed by each installation because each base and station fire and emergency service requirements are unique. After an organizational structure is identified by the installation, individual positions will be classified as either civilian or military. Civilians will compete for their positions through the merit promotion system and the military will continue to advance through their existing promotion structure. Within the established table of organization, military personnel will not compete for positions classified as civilian and civilians will not compete for positions classified as military.

Budgets. The PAT agreed the budgets of the two organizations should be transferred and consolidated under the integrated fire and emergency services department and the sponsoring Command.

Facilities. The PAT recognized facilities will require upgrades, especially in the ARFF facilities (i.e. improvements of existing berthing areas, conversion of office spaces, additional restroom facilities). Most of these upgrades could be accomplished through the minor construction program. The PAT does not believe any MILCON projects will be required.

Command Lines of Authority. The PAT recognizes the integrated fire and emergency services organization will cross command lines of authority at bases with air stations and air facilities. In these cases, the PAT consistently recommended establishing the integrated organization under the Marine Corps Base. Two proposals were forwarded to ensure the air station or air facility continues receiving the current level of support. First, an memorandum of agreement should be established that would specify no reductions in level of ARFF protection (based on category of airfield) without approval from the air station or air facility Commanding Officer. Second, the base mission statement should be revised to include ARFF as a primary mission of the base.

Pohakuloa Training Area (PTA). Currently, PTA deployment requires 16 fire fighters for 30 days, semi-annually, and is provided by MCAF Kaneohe Bay utilizing permanent personnel. Providing this support by using MWSS fire fighters will save 16 billets which can be used for reinvestment. The PAT recognizes this proposal is contingent upon 1st or 3d Marine Air Wing's ability to support this deployment.

Command Responses

Individual Command responses will be appended upon review and receipt of comments from the Installation Commanders.

Installation Fire Chief and ARFF Officer Recommendations

MCB/MCAF Quantico: Fire Chief and ARFF Officer support full integration.
MCAS Beaufort: Fire Chief and ARFF Officer do not support full integration.
MCB Camp Lejeune/MCAS New River: Fire Chief and ARFF Officer support full integration.
MCAS Cherry Point: Fire Chief and ARFF Officer support full integration.
MCAS Yuma: Fire Chief supports integration, ARFF Officer does not support full integration.
MCAS Miramar: Fire Chief and ARFF Officer do not support full integration.
MCB/MCAS Camp Pendleton: Fire Chief and ARFF Officer support full integration.
MCAF Kaneohe Bay/Federal Fire Department: Fire Chief supports full integration, ARFF Officer does not support full integration.
MCAS Iwakuni: Fire Chief supports full integration, ARFF Officer not in attendance.
MCB Okinawa/MCAS Futenma: Fire Chief and ARFF representative support full integration.

Personnel Savings

Installation	Civilians	Military
MCB/MCAF Quantico	3	13
MCAS Beaufort	2	8
MCB Camp Lejeune/MCAS New River	11	7
MCAS Cherry Point*	2	6
MCAS Yuma*	2	10
MCAS Miramar**	0	18
MCB/MCAS Camp Pendleton	3	3
MCAF Kaneohe Bay***	0	27
MCB Camp Butler/ MCAS Futemna	0	0
MCAS Iwakuni****	0	0
Total	23	92

* MCAS Cherry Point and MCAS Yuma would not reduce personnel until four new 3000 gallon ARFF vehicles replace the older P-19, 1000 gallon ARFF vehicles.
** MCAS Miramar is not slated for any reductions at this time, however future personnel cuts could be made if the airfield category increases and two new 3000 gallon ARFF vehicles replace

the older P-19, 1000 gallon ARFF vehicles. The identified savings can be utilized to support the third engine company requirement for East Miramar (11 billets).
*** An additional 16 personnel savings is possible with PTA support provided by 1st or 3d MAW.
**** Integration allows for staffing of the MCAS Iwakuni's ladder truck without increasing the MLC personnel.

Conclusions

After reviewing the ARFF and SFF organizations at the Marine Corps bases and stations, the PAT unanimously agrees integration of the two departments will increase the utilization of resources within the fire and emergency services program. Integration will provide manpower savings and reduce duplication of services sought by the ADFSRG. However, and perhaps more importantly, integration provides the training and experience required by our deployable Marines in the full range of fire and emergency services. With increasing focus on contingency support and urban warfare, having a strong background in fire and emergency services is an important requirement for our Marine fire fighters.

Recommendations

1. That the ARFF and SFF departments are fully integrated throughout the Marine Corps bases and stations.

2. That the Marine Corps procure six, 3000 gallon, ARFF vehicles for MCAS Cherry Point, MCAS Yuma and MCAS Miramar to replace 12 P-19, 1000 gallon ARFF vehicles.

Attachment 1

Process Action Team Members

CWO-5 Paul Dossin, HQMC, ASL

GM-14 Mr. Kevin King, HQMC, LFF

CWO-4 Greg Lawrence, 3D MAW, ARFFO

CWO-4 Paul Bungcayao, ARFFO, MCAS Cherry Point

GS-12 Mr. Charles Duffy, Fire Chief, MCAS Yuma

GS-7 Mr. Tom Mylett, Vice President, AFGE Local 2065

Mr. Mike Crouse, National Vice President, IAFF 16th District

Attachment 2

Process Action Team Objectives

Strategic Objective: Ensure the U.S. Marine Corps is effectively and efficiently utilizing its manpower and equipment in the area of Fire and Emergency Services.

Specific Objectives:

1. Identify possible manpower reductions that can be realized by the merging/consolidation of the SFF Fire Department with the ARFF Department.

2. Identify possible fire fighting equipment/apparatus that could be realized by the merging/consolidation of the SFF with the ARFF Department.

3. Evaluate the host commands dependency on the FMF fire fighters provided through the Fleet Assistance Program.

4. Compare each Commands current capability to provide fire and emergency services with potential future capability due to the merging/consolidation of Fire and Emergency Services personnel.

5. Identify other potential benefits associated with merging/consolidating of the Fire and Emergency Services personnel. This will include but not be limited to the following areas:

a. Training/Certification Procedures/Costs
b. Capabilities
c. Overtime Reduction
d. Morale/Quality of Life (Promotions/Hours Worked)

6. Identify potential problem areas/obstacles associated with consolidation.

7. Identify the staff area that the merged/consolidated fire department would fall under, i.e. Facilities, Operations, PMO, Special Staff.

8. Identify future FMF requirements for Marine Fire and Emergency Services personnel other than in support of the ACE, i.e. CBIRF, CSS/FSSG.

Attachment 3

Command Site Visits

Base/Station	Dates
MCAF/MCB Quantico	14-17 Oct 1997
MCAS Beaufort	3-6 Nov 1997
MCAS New River/MCB Camp Lejeune	12-17 Nov 1997
MCAS Cherry Point/COMCABEAST	17-21 Nov 1997
MCAS Yuma	8-11 Dec 1997
MCAS Miramar	5-8 Jan 1998
MCAS/MCB Camp Pendleton	9-14 Jan 1998
MCAF Kaneohe Bay	15-21 Jan 1998
MCAS Futenma/MCB Camp Butler*	15-21 Jan 1998
MCAS Iwakuni*	15-21 Jan 1998

* MCAS Futenma/MCB Camp Butler and MCAS Iwakuni personnel participated in the MCAF Kaneohe Bay process. Individual out-briefs were developed for their Commands on 17-19 Jan 1998.

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APPENDIX VI. F&ES QUESTIONNAIRE

A. PURPOSE AND STATISTICS

This questionnaire obtained input regarding Marine F&ES organizational change costs, benefits and alternatives from Tier 2 stakeholder leadership.

The questionnaire was circulated electronically by the author directly to those Marine Departments participating in the installation Site Visits, and via Mr. Kevin King and CWO-5 Cernoch (HQMC F&ES) to other Marine emergency service departments. The below table provides a statistical overview of the questionnaires distributed and responses received.

Department	Total Questionnaires Distributed	Total Questionnaire Responses Received
Marine ARFF	20	5 (25%)
Civil Service SFD	11	5 (45%)

Table 29 - F&ES Questionnaire Summary

B. QUESTIONNAIRE RESPONSES

The following details responses recurring from Tier 2 leaders.

Question 1. What are your top concerns with contracting for DoD F&ES?

- Contracted F&ES is unable to support expeditionary F&ES needs of the Marine Corps.
- Risks associated with commercial F&ES (performance, responsiveness and costs).

- Contractor focus on base payment, award, and/or fee instead of service to the government.

- Contracted F&ES departments are less flexible to varying operations - contractors only perform the functions specified in a contract.

- Contracted F&ES would not provide the same level of service as the current organizational structure.

Question 2. How does Marine F&ES contribute to the synergy of overall Marine Corps Force Protection efforts and capabilities?

- Both ARFF & SFD provide first response in areas of designated responsibility.

- Through mutual aid agreements, ARFF and SFD provide augmentation for fire suppression, rescue and hazardous material response not only to each other, but to local municipalities and departments.

Question 3. How do you view your department/unit operations with respect to operating efficiently?

- Capability duplications between ARFF departments and SFD’s are perceived and not founded: each department has specialized, distinct mission requirements.

- Structural F&ES training that Marines receive is under utilized.

- Both ARFF and SFD’s train to the same DoD and NFPA standards, yet our departments are segregated.

Question 4. What are the top positive and negative impacts of Marine F&ES organizational consolidation?

Positive

- Elimination of duplications in senior F&ES management.
- Overall increased flexibility and greater F&ES capability with a consolidated department synergism (due to integrated training and operations).
- More capable, qualified Marine firefighters deployed to support MWSS operations.
- Greater overall continuity for aggregate F&ES installation operations.
- Better assurance that firefighters with sufficient qualifications, certifications and licensing are assigned to department leadership positions.
- More exposure to training and new response opportunities.
- Better understanding of corresponding department operational responsibilities.
- Consolidation may produce efficiencies in operating costs, resources and manning.
- Consolidation would better entrench Marine F&ES against the threat of contracted F&ES.
- Reduced overtime costs possible in a consolidated department due to larger combined labor force.

Negative

- Marine warfighting ethos diminished if consolidated.

- Disagreement in authority (who will be the Fire Chief? The Section Leaders?).

- Marine Corps firefighters will refuse to work for civil service firefighters.

- Constant turnover of Marine firefighters requires civil service firefighters to continually train new personnel.

- Possible increased F&ES operational costs during Marine deployments (overtime).

- Inequity of duty assignments for uniformed Marine firefighters when compared to civil service firefighter duties.

- Administration and management regulations for military and civil service personnel present significant cohesion and leadership challenges.

- Diminished morale of work force if integrated.

- Marine firefighters less familiar with SFD responsibilities, and the same of civil service firefighters with ARFF.

What do you feel are the top benefits provided to Installation and MWSS F&ES through the Marine dual F&ES organizational structure?

- Specialized emergency response capability is provided by each department.

- Expeditionary nature of Marine F&ES makes the structure necessary.

- With the dual organizational structure, Marine ARFF firefighters are able to provide for a wide variety of other services not related to F&ES, but essential to the Marine Corps (Burial Details, Color Guard, Augment Security Forces, etc…).

- Current organizational structure enables Marines to complete annual training (marksmanship, martial arts, etc…).

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APPENDIX VII. EXAMINING EXPEDITIONARY FIREFIGHTING

A. OVERVIEW

This Appendix examines expeditionary emergency services supporting coalition forces in contingency environments to provide insight to deployed F&ES capabilities and challenges. This section reviews the utility of commercially sourced F&ES in Iraq, provides a statistical summation of OIF fatality sources and offers insight to challenges experienced by ARFF Marines that have recently deployed to Afghanistan and Iraq.

B. OUTSOURCED F&ES

The scope of contingency emergency service support provided by private industry to the military though substantial in capability is limited operationally. Consider Wackenhut Services Inc. (WSI), the largest F&ES provider in Iraq. As noted on the WSI web page:

> WSI Fire and Emergency Service in Iraq is the primary emergency response capability for 12 United States DoD Fire Departments. The start-up of 12 fire departments simultaneously represents the largest single fire and emergency services effort in a combat zone in over 30 years and quite possibly in modern times. We are providing the DoD with a full service support program ranging from fire suppression, fire prevention, aircraft rescue and firefighting, technical rescue, hazardous materials, and basic life support services. Simply put, we protect those who are protecting the citizens of Iraq.

Emergency services provided by WSI are comprehensive; however, an interview with Mr. Sam Brinkley (Lieutenant Colonel, USMC Retired) and Vice President, WSI Homeland and International Security Services, illuminated the need for

expeditionary firefighting by military personnel. As noted during a telephonic interview:

> Although WSI provides over 500 emergency responders possessing a multi-faceted capability (ARFF, Structural Firefighting and EMS) to coalition forces in Iraq, we provide support to base operations that are secure (provided security under the direction of Combatant Commanders) as part of contingency operations currently contracted through the U.S. Army's Logistics Civil Augmentation Program (LOGCAP). Expeditionary firefighting is beyond the scope of WSI's mission - support to Forward Operating Bases (FOB's) and Forward Area Refueling Points (FARP's) is reliant on the COCOM's warfighter's for support.

The limited operations of contracted F&ES to support Combatant Commands supports the operational requirement for uniformed Marine firefighters, and suggest continued operational reliance on uniformed Marine firefighters in the future.

C. OIF STATISTICS

As of 30 August 2005, an estimated 1,880 U.S. military fatalities have resulted from Operation Iraqi Freedom (OIF).[37] Of this total, 131 (7%) of these fatalities were the result of aviation related mishaps. Comparatively, 616 (44%) of the fatalities were attributed to *indirect* hostile actions (Improvised Explosive Devices and mines) and *non-hostile events*. These statistics demonstrate a need for enhancing F&ES core competencies of Marine firefighters, and suggest expanding F&ES capabilities to support Marine ground units.

[37] Iraq Coalition Causalities, retrieved on August 30, 2005 from http://icasualties.org/oif/

Total U.S. Military Fatalities from OIF as of 30 August 2005	1880
Non-Hostile Fatalities *	209
Hostile Fatalities Indirect in Nature **	616
Total Non-Hostile Fatalities & Indirect Hostile Fatalities	825
Percentage Total Non-Hostile Fatalities & Indirect Hostile Fatalities	44%
Hostile Fatalities Aviation Related ***	67
Non-Hostile Fatalities Aviation Related ****	64
Total Hostile and Non-Hostile Aviation Fatalities	131
Percentage Total Hostile and Non-Hostile Aviation Fatalities	7%

Table 30 - OIF Fatality Summary 30 August 2005

Hostile - hostile fire - IED attack **	486	25.9%
Hostile - hostile fire	463	24.6%
Non-hostile - vehicle accident *	150	8.0%
Hostile - hostile fire - car bomb **	73	3.9%
Hostile - hostile fire - RPG attack	71	3.8%
Hostile - hostile fire - mortar attack	68	3.6%
Non-hostile - helicopter crash ****	59	3.1%
Hostile - hostile fire – ambush	52	2.8%
Hostile - helicopter crash ***	41	2.2%
Non-hostile - weapon discharge	35	1.9%
Hostile - hostile fire - suicide car bomb **	30	1.6%
Hostile - vehicle accident **	26	1.4%
Hostile - hostile fire – sniper	26	1.4%
Non-hostile - unspecified cause	25	1.3%
Hostile - hostile fire - suicide bomber	24	1.3%
Hostile - helicopter crash (missile attack) ***	24	1.3%
Hostile - hostile fire - rocket attack	22	1.2%
Hostile - hostile fire – grenade	15	0.8%
Non-hostile - unspecified injury	14	0.7%
Non-hostile - weapon discharge (accid.)	14	0.7%
Non-hostile - ordnance accident	14	0.7%
Non-hostile - drowning *	13	0.7%
Non-hostile – illness	12	0.6%
Non-hostile - vehicle accident (drowning)*	12	0.6%
Hostile - hostile fire – explosion	11	0.6%
Hostile - hostile fire – bomb	8	0.4%
Non-hostile – electrocution	8	0.4%
Hostile - friendly fire	7	0.4%
Non-hostile - illness - heart attack *	6	0.3%
Non-hostile – homicide	5	0.3%
Non-hostile - airplane crash ****	4	0.2%
Non-hostile - illness - sudden collapse *	4	0.2%
Non-hostile - accidental fall	3	0.2%
Non-hostile - illness - died in sleep	3	0.2%
Non-hostile - weapon malfunction	3	0.2%

Non-hostile - not reported	3	0.2%
Hostile - hostile fire - suicide boat bomb	3	0.2%
Hostile - drowning *	3	0.2%
Hostile - hostile fire - land mine	3	0.2%
Non-hostile	2	0.1%
Hostile - jet crash ***	2	0.1%
Non-hostile - building fire *	2	0.1%
Non-hostile - accident (?)	2	0.1%
Non-hostile - illness - heart attack? *	2	0.1%
Non-hostile - jet crash *	2	0.1%
Non-hostile - illness - heat related *	2	0.1%
Non-hostile - illness - heat related? *	2	0.1%
Non-hostile - illness - heatstroke *	2	0.1%
Non-hostile - illness - pneumonia?	2	0.1%
Non-hostile - illness - seizure *	1	0.1%
Non-hostile - maintenance accident	1	0.1%
Non-hostile – suicide	1	0.1%
Non-hostile - unspecified accident	1	0.1%
Non-hostile - illness - heart failure *	1	0.1%
Non-hostile - illness - acute leukemia	1	0.1%
Non-hostile - illness - acute pancreatitis	1	0.1%
Non-hostile - illness - breathing difficulties *	1	0.1%
Non-hostile - vehicle accident *	1	0.1%
Hostile - unspecified injury	1	0.1%
Non-hostile – accident	1	0.1%
Hostile - hostile fire - RPG attack (?)	1	0.1%
Hostile - hostile fire – mine	1	0.1%
Hostile - hostile fire - car bomb?/RP grenade? **	1	0.1%
Hostile - hostile fire - anti-tank mine	1	0.1%
Hostile - friendly fire - cluster bomb	1	0.1%
Hostile - friendly fire - jet crash ****	1	0.1%
Total	1880	100.0%

Table 31 - OIF Fatality Detailed Report 30 August 2005

D. INTERVIEWS

Interviews with several U.S. Marine ARFF members deployed in support of Operating Enduring Freedom (OEF) and OIF provide testimony regarding the myriad of emergency service scenarios ARFF Marines are experiencing. While these interviews are not inclusive of all uniformed Marine firefighter deployed experiences, they certainly are

representative, and demonstrate a need for enhanced F&ES core competency development beyond service to aircraft.

1. Sergeant Coscarelli

While assigned to the 15th Marine Expeditionary Unit, Special Operations Capable (MEUSOC) from August of 2001 through January of 2002, Sergeant Coscarelli stated:

> I was attached to the 15th MEU, and was part of the amphibious landing into Pakistan, that eventually took the MEU into Afghanistan. Mostly I provided support to MEU and Special Forces helicopter operations at FARP (Forward Area Refueling Points) sites located outside of Camp Rhino (the MEUSOC base of operations during OEF).
>
> I responded to one aircraft related emergency while with the MEU, it was for an Army bird (CH-46) full of Special Forces. The bird (aircraft) landed fine, and it did not amount to anything serious. I provided a lot of non-emergency services to MEU aircraft, mostly to helicopters that included landing the birds (ground control), grounding (preventing static discharge), rearming and refueling.
>
> My FARP was engaged by sniper fire one time. The Marines returned fire, and there were no injuries or damage to the birds (aircraft) or our equipment. During OEF the FARP teams I was assigned to were constantly busy (with aviation F&ES alerts, rearming and refueling), but I did not provide response to serious emergency situations.
>
> I also was in OIF with MWSS-373 from January through June of 2003. We were constantly busy while deployed, but the most memorable emergencies I will never forget. While working at a FARP site outside Tikrit, my ARFF team responded to a vehicle accident involving two HMMWVs. We rendered on scene EMS support at the accident. Also, I responded to an aircraft mishap- a UH-1 helicopter. A total of 3 of the 4 souls on board died in the crash, however, my

> ARFF team responded and provided EMS to the surviving co-pilot. Also, we provided a lot of support to mortuary affairs. Fatalities and causalities would arrive at the FARP's in tactical vehicles, and we transferred them to birds (helicopters) for further evacuation. It was a grim task at times.

2. Master Sergeant Karambelas

Assigned to MWSS 273, Master Sergeant Karambelas deployed to Iraq from March through September 2004. The Master Sergeant stated:

> MWSS-273's ARFF was extremely taxed supporting the Al-Asad's Forward Operating Base (FOB). The ARFF detachment was responsible for the Category 2 Airfield sustaining 9 Marine squadrons. I served as the fire inspector for the entire FOB, which was a base of operations for well in excess of 10,000 personnel. Other than F&ES support of the airfield, MWSS-273 ARFF responded to several non aviation emergencies.
>
> The most notable of these responses was to a Navy Construction Battalion Work Center in Ramadi attacked by insurgents with rocket fire on May 9, 2004. A total of 7 personnel were killed in the attack, and 38 wounded. ARFF Marines provided the initial response, established the triage, and rendered first response EMS.
>
> Also notable was MWSS-273's response to a tent fire at RCT-7 that consumed 11 surface tents and destroyed $1.5 million dollars in equipment. ARFF provided first response to this fire, and with support from KBR's (Kellogg, Brown, and Root) water tenders, we were able to contain the blaze.
>
> MWSS-273 responded to other non-aviation emergencies that included extinguishing four 7-ton truck wheel fires, extrication of a motor-transportation crew from an overturned 7-ton truck and extinguishing a host of smaller building and tent fires.

When I think back on the deployment, I personally provided fire prevention classes to over 4,000 personnel and distributed over 5,000 smoke detectors and 3,000 extinguishers to units at Al-Asad. I can't stress enough the importance of fire prevention and inspection in contingency environments. With no fire hydrants and limited extinguishers, robust efforts in fire inspection and prevention were made.

In general, the MWSS-273 ARFF did a phenomenal job in providing F&ES support at Al-Asad and the surrounding FARP sites, considering the relatively small amount of personnel and the equipment we had. Based on my deployed experiences, I believe there is a need for emergency service support external to the Marine Air Wings; however, without increases to F&ES T/O and T/E, I cannot reasonably see providing F&ES to ground units. Also the Marine Corps should consider increasing the number of new expeditionary firefighting vehicles, the Fire Suppression System (FSS). The P-19 is extremely old, and its large size proved difficult to maneuver in and out of base camp areas.

4. Master Sergeant Jackson

I deployed to OIF in February 2003 with MWSS-371. On our initial convoy from Kuwait to Iraq, the P-19 (ARFF fire truck) I was in struck a land mine. Three other Marines and I were MEDEVAC'd (evacuated to medical care). I spent 5 days in a hospital but redeployed. I worked at several FARP sites. In July, my ARFF unit responded to a large wild land fire outside of Al-Kut. We had to protect a house that was being used to temporarily store a large quantity of unexploded ordinance. We also responded to a CH-46 that had a rotor-brake fire, and we responded to several smaller structural fires while deployed.

5. Corporal Hein

I was with MWSS-371 and deployed to OIF as a member of FARP Team B. I worked mostly outside

> Tikrit, providing expeditionary airfield support (fire protection, refueling, ordinance support) to a wide variety of aircraft. Aside from FARP support, I was assigned frequently to security details. Several times my FARP site received small-arms and enemy rocket fire. Also, my ARFF team responded to an Army fuel truck that caught on fire. I am not sure how it happened, but we extinguished the blaze quickly.

E. SUMMARY

Based on the constraints of contracted F&ES, the sources and spectrum of fatalities noted in review of OIF statistics and the testimony provided by ARFF Marines, the author suggests consideration of a future strategic vision for deployed Marine F&ES: Enhanced Expeditionary Emergency Service (EEES).

EEES would extend beyond the MWSS to Marine Air Ground Tasks Force (MAGTF) and Combatant Commands (COCOMs), providing a multi-capable armored and motor vehicle extrication, CBRNE, Structural Fire, ARFF, EMS, Special Rescue, and Hazardous Material response capability. While operational research develops technologies such as advanced armor systems, improvised explosive device (IED) “sniffers”, deployable robots, and other high-technology, expensive systems to counter asymmetric threats, these initiatives do not guarantee the safety of our personnel - nor do they provide critical emergency response *if they fail.*

Although reactive, the establishment of EEES elements could enhance force protection measures by providing full spectrum F&ES utility to the MAGTF and COCOMs. The EEES concept may seem far fetched; however, the author asserts the enhanced F&ES core competencies developed by

Alternative 5 may provide the capability foundation for this initiative. Additionally, the labor efficiencies estimated with Marine F&ES consolidation may contribute to staffing the EEES vision. The author does not foresee attaching EEES teams to ground units, rather heliborne EEES teams providing rapid response to combatant commands over large sectors of battle space. Much in the same manner commercial emergency service corporations provide rapid heliborne response, special rescue, extrication and advanced life support within the civilian sector, EEES is envisioned to provide a similar, yet superior, F&ES capability in contingency environments for warfighters.

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