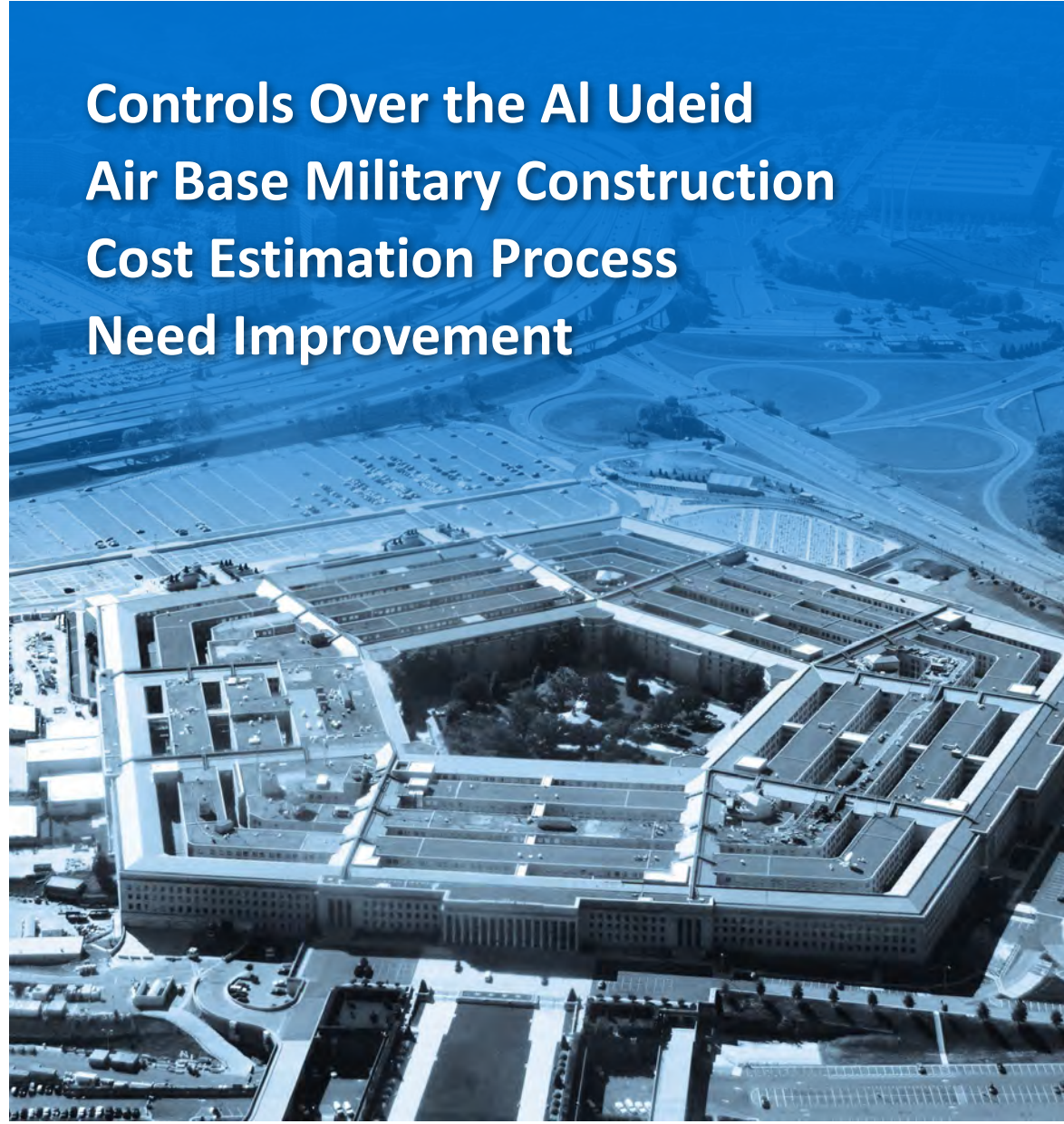




INSPECTOR GENERAL

U.S. Department of Defense

SEPTEMBER 4, 2015



Controls Over the Al Udeid Air Base Military Construction Cost Estimation Process Need Improvement

INTEGRITY ★ EFFICIENCY ★ ACCOUNTABILITY ★ EXCELLENCE

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Results in Brief

Controls Over the Al Udeid Air Base Military Construction Cost Estimation Process Need Improvement

September 4, 2015

Objective

Our audit objective was to evaluate DoD's requirements development process for Military Construction (MILCON) projects at Al Udeid Air Base (AUAB), Qatar. Specifically, we determined whether the user had a valid requirement and whether the requirement was developed in accordance with applicable guidance and in consideration of DoD's mission in Southwest Asia (SWA) for two MILCON projects valued at \$30.5 million* at AUAB, Qatar.

Finding

DoD identified valid requirements and developed the two planned AUAB MILCON projects we reviewed in consideration of DoD's mission in SWA. However, the project cost estimates were unsupported for both projects. Specifically:

- U.S. Army Corps of Engineers Middle East District (USACE MED) validated the consolidated squadron operations primary facility cost estimate at \$12 million, but USACE MED and U.S. Air Forces Central Command, Civil Engineer Directorate (USAFCENT A7) did not maintain documentation to support the estimate. Without documentation to support USACE MED cost estimates we used the Unified Facilities Criteria (UFC) to estimate a facility cost of \$14.7 million, which was 23 percent higher than USACE MED's validated cost estimate.

* The numbers presented in the report are rounded.

Finding (cont'd)

- USACE MED validated the cargo marshalling yard primary facility cost estimate at \$7.1 million using costing factors other than those established within the UFC. USACE MED and USAFCENT A7 did not maintain documentation to support the estimate or explain why the criteria were not used. Without documentation to support USACE MED cost estimates we used the UFC to estimate a facility cost of \$8.8 million, which was 24 percent higher than USACE MED's validated cost estimate.
- USACE MED and USAFCENT A7 did not have documentation to support the consolidated squadron operations facility and cargo marshalling yard supporting facility costs.

This occurred because USACE MED and USAFCENT A7 did not have a process to formally validate and maintain supporting documentation for MILCON primary and supporting facility cost estimates. As a result, the primary facility costs for the consolidated squadron and cargo marshalling yard may be underestimated by \$4.5 million; supporting facility costs may also be incorrectly valued; and USAFCENT A7 may not request appropriate funding for those projects. Unsupported costs could also result in USAFCENT A7 submitting inaccurate budget estimates to Congress for other SWA MILCON projects, which could result in projects not properly funded. Underfunded programs also require Congressional notification when additional funding requests exceed 25 percent of the original project value.

Management Actions Taken

During the audit, USACE MED and USAFCENT A7 officials took action to formally validate cost estimates and revised the project cost estimates for the consolidated squadron and cargo marshalling yard. USACE MED also updated its costing data and issued guidance to ensure that subsequent MILCON project estimates were adequately validated and documented. Based on the actions taken, we did not make recommendations in this report.

Recommendations Table

Management	Recommendations Requiring Comment
Commander, United States Air Forces Central Command	None
Commander, United States Army Corps of Engineers	None



**INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
4800 MARK CENTER DRIVE
ALEXANDRIA, VIRGINIA 22350-1500**

September 4, 2015

MEMORANDUM FOR ASSISTANT SECRETARY OF THE AIR FORCE
(FINANCIAL MANAGEMENT AND COMPTROLLER)
COMMANDER, U.S. CENTRAL COMMAND
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Controls Over the Al Udeid Air Base Military Construction Cost Estimation Process
Need Improvement (Report No. DODIG-2015-169)

We are providing this report for your information and use. Although DoD identified valid requirements and developed the two planned Al Udeid Air Base, Qatar Military Construction projects reviewed in consideration of DoD's mission in Southwest Asia, the project cost estimates were unsupported. During the audit, U.S. Army Corps of Engineers Middle East District and U.S. Air Forces Central Command Civil, Engineer Directorate officials took action to validate the project cost estimates for the two projects reviewed and developed guidance to ensure that subsequent Military Construction project cost estimates are formally validated and documented. Therefore, we did not make recommendations in this report. We conducted this audit in accordance with generally accepted government auditing standards.

No written response to this report was required, and none was received. Therefore, we are publishing this report in final form. We considered management comments on a discussion draft of this report when preparing the final report.

We appreciate the courtesies extended to the staff. Please direct questions to me at (703) 699-7331 (DSN 499-7331).

A handwritten signature in black ink, reading "Carol N. Gorman", is positioned above the typed name.

Carol N. Gorman
Assistant Inspector General
Readiness and Cyber Operations

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Acronyms and Abbreviations

Introduction

Objective

Our audit objective was to evaluate DoD's requirements development process for Military Construction (MILCON) projects at Al Udeid Air Base (AUAB), Qatar. Specifically, we determined whether the user had a valid requirement and whether the requirement was developed in accordance with applicable guidance and in consideration of DoD's mission in Southwest Asia (SWA). See Appendix A for a discussion of our scope and methodology and prior coverage related to the objective.

Background

U.S. Central Command's (USCENTCOM) area of responsibility (AOR) covers 20 countries located in SWA and North Africa. U.S. Air Forces Central Command (USAFCENT) serves as the air component within USCENTCOM's AOR and executes and plans for contingency operations, including air operations and management of extensive supply and equipment repositioning programs.

AUAB, Qatar is the logistics, command, and basing hub for the USCENTCOM AOR. AUAB plays a strategic role to support USCENTCOM and USAFCENT missions in the Middle East, SWA, and Africa. USCENTCOM develops an annual prioritized list of MILCON requirements for installations in the AOR. MILCON includes construction projects for all types of buildings, roads, airfields, and utility systems that cost \$750,000 or more.

Development and Funding Approval Process for MILCON Requirements

USCENTCOM's mission and SWA priorities influence MILCON requirements in the USCENTCOM AOR. USCENTCOM develops a Theater Posture Plan (TPP) that outlines the strategic planning and programming efforts for future fiscal years, which includes MILCON requirements. According to an USAFCENT official, AUAB develops and regularly updates its Base Master Plan (BMP), with consideration of TPP priorities. The BMP is prepared by a Government contractor with input from U.S. Army Corps of Engineers Middle East District (USACE MED), USAFCENT, and the 379th Air Expeditionary Wing at AUAB. The BMP identifies MILCON requirements for future installation plans. The AUAB Civil Engineer prioritizes the proposed MILCON requirements and coordinates those priorities with USAFCENT, Civil Engineer Directorate (A7). USAFCENT A7's mission is to create, coordinate, and deliver timely and accurate, civil engineering plans, guidance, policy, recommendations, and support to air expeditionary wing commanders, and deployed Airmen.

DoD Directive 4270.5¹ requires the Air Force to use USACE for MILCON design and construction. USAFCENT A7 prioritizes proposed MILCON requirements and uses USACE MED to further develop high priority MILCON projects through detailed Planning and Programming Reports (PPRs). PPRs include MILCON site details, proposed facility description, technical requirements, site plans, and cost estimates. The Directive also recommends that DoD Components use the Unified Facilities Criteria (UFC) and Unified Facilities Guide Specifications to the greatest extent possible when planning MILCON facilities. UFC 3-740-05² establishes methods for estimating MILCON costs.

Air Force Instruction (AFI) 32-1021³ requires USAFCENT A7 MILCON programming documentation include a DD Form 1391⁴ and documentation to support primary and supporting facilities unit costs. Primary facility costs include the major construction components of the MILCON project. Supporting facility costs include items of construction directly related to the primary facility such as utilities, roads and parking, and site improvements. The total project cost consists of the primary and supporting facility costs and other costs including contingency, design, supervision, inspection, and overhead costs.⁵ To propose a MILCON project, AFI 32-1021 requires USAFCENT A7 officials to complete a draft DD Form 1391 and maintain construction cost estimates for primary and supporting facilities and documentation to support the cost estimates. The form is submitted to USACE MED officials for cost validation.

USAFCENT A7 presents its prioritized MILCON proposals to the USCENCOM Joint Facilities Utilization Board (JFUB)⁶ for consideration. MILCON proposals include cost, scope, and justification for each project. The JFUB prioritizes the MILCON projects within the USCENCOM Master Plan Priority List (MPPL)⁷ in accordance with USCENCOM's TPP. Projects on the MPPL are placed in the Future Years Defense Program, which is provided to Congress for approval with the President's Budget. See Figure 1 for an illustrative representation of USCENCOM's MILCON requirements development and funding approval process.

¹ DoD Directive 4270.5, "Military Construction," February 12, 2005.

² UFC 3-740-05, "Handbook: Construction Cost Estimating," June 2011.

³ AFI 32-1021, "Planning and Programming Military Construction (MILCON) Projects," October 31, 2014.

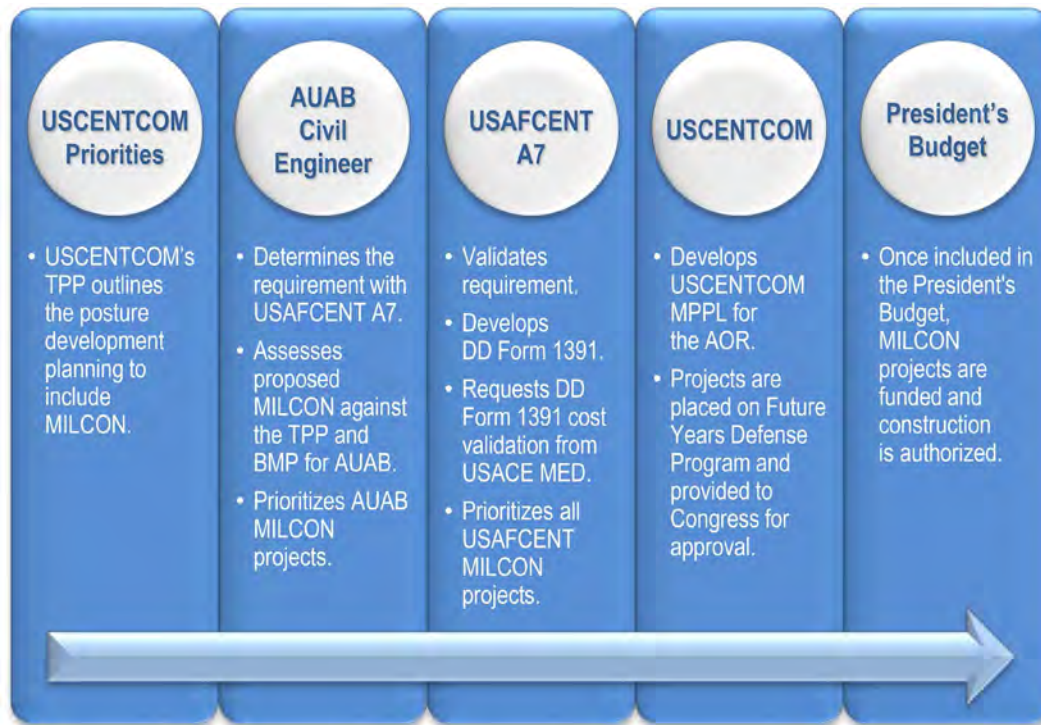
⁴ DoD uses the DD Form 1391 "FY Military Construction Data," July 1999, to submit MILCON requirements and justifications in support of funding requests to Congress (see the form template in Appendix B).

⁵ AFI 32-1021 does not require documentation to support the contingency, design, supervision, inspection, and overhead costs.

⁶ The USCENCOM JFUB is a temporary board that evaluates, reconciles, and prioritizes MILCON proposals submitted by the military services within the USCENCOM AOR.

⁷ The USCENCOM MPPL is a prioritized listing of MILCON projects among the USCENCOM services (USAFCENT, Army Central Command, Navy Central Command, and Special Operations Command).

Figure 1. USCENTCOM MILCON Requirements Development and Funding Approval Process



Source: DoD Office of Inspector General (OIG)

Planned AUAB MILCON Projects

As of May 2014, there were two planned AUAB MILCON projects on the USCENTCOM MPPL: the consolidated squadron operations facility and the cargo marshalling yard. Construction of the consolidated squadron operations facility was planned for FY 2018 with an estimated cost of \$16.0 million.⁸ The consolidated squadron operation facility will be used to plan, brief, and support AUAB flight operations. Construction of the cargo marshalling yard was planned for FY 2019 with an estimated cost of \$14.5 million. The cargo marshalling yard will be used for storage and movement of pallets and containers passing through AUAB. Table 1 provides a summary of USACE MED estimated costs for the two projects.

Table 1. USACE MED Estimated Project Costs

AUAB MILCON Project	Primary Facility	Supporting Facility	Other*	Total
Consolidated Squadron Operations Facility	\$12 million	\$2.4 million	\$1.7 million	\$16 million**
Cargo Marshalling Yard	\$7.1 million	\$5.3 million	\$2 million	\$14.5 million**

* Other costs include contingency, design, supervision, inspection, and overhead costs.

** Differences due to rounding.

⁸ The numbers presented in the report are rounded.

Review of Internal Controls

DoD Instruction 5010.40, “Managers’ Internal Control Program Procedures,” May 30, 2013, requires DoD organizations to implement a comprehensive system of internal controls that provides reasonable assurance that programs are operating as intended and to evaluate the effectiveness of the controls. We identified internal control weaknesses at USACE MED and USAFCENT A7. Specifically, USACE MED and USAFCENT A7 did not have a process to formally validate and maintain supporting documentation for estimated MILCON project costs. However, USACE MED and USAFCENT A7 took corrective action to address the internal control weaknesses prior to issuance of this report. We will provide a copy of this report to the senior officials responsible for internal controls at USCENTCOM, USAFCENT A7, and USACE MED.

Finding

DoD Adequately Identified and Developed MILCON Requirements, but Cost Estimates Were Unsupported

DoD identified valid requirements and developed the two planned AUAB MILCON projects we reviewed in consideration of DoD's SWA mission. However, the project cost estimates were unsupported for both projects. Specifically:

- USACE MED validated the consolidated squadron operations primary facility cost estimate at \$12 million, but USACE MED and USAFCENT A7 did not maintain documentation to support the estimate. Without documentation to support the cost estimate we used the UFC to estimate a facility cost of \$14.7 million, which was 23 percent higher than USACE MED's validated cost estimate.
- USACE MED validated the cargo marshalling yard primary facility cost estimate at \$7.1 million using other than the UFC costing factors. USACE MED and USAFCENT A7 did not maintain documentation to support the estimate or explain why the UFC was not used. Without documentation to support the cost estimate we used the UFC to estimate a facility cost of \$8.8 million, which was 24 percent higher than USACE MED's validated cost estimate.
- USACE MED and USAFCENT A7 did not have documentation to support the consolidated squadron operations facility and cargo marshalling yard supporting facility costs.⁹

This occurred because USACE MED and USAFCENT A7 did not have a formal process to validate and maintain supporting documentation for MILCON cost estimates. As a result, primary facility costs for the consolidated squadron and cargo marshalling yard may be underestimated by \$4.5 million; supporting facility costs may be incorrect; and USAFCENT A7 may not request appropriate funding for the projects. Unsupported costs could also result in USAFCENT A7 submitting inaccurate budget estimates to Congress for other SWA MILCON projects, which could result in improperly funded projects. During the audit, USACE MED and USAFCENT A7 officials took action to formally validate and revise the project cost estimates for the consolidated squadron and cargo marshalling yard. USACE MED also issued guidance to ensure that subsequent MILCON project estimates are adequately validated and documented. Based on the actions taken by USACE MED and USAFCENT A7 officials, we did not make recommendations in this report.

⁹ The UFC does not provide specific criteria for estimating supporting facility costs. Therefore, we did not estimate supporting facility costs for the two planned MILCON projects.

MILCON Requirements Were Based on Existing Needs

USAFCENT A7 developed and documented its MILCON requirements based on valid long-term mission needs. AFI 32-1021 requires the Air Force to verify MILCON project requirements and ensure that the project is the most cost effective means to satisfy the requirement.

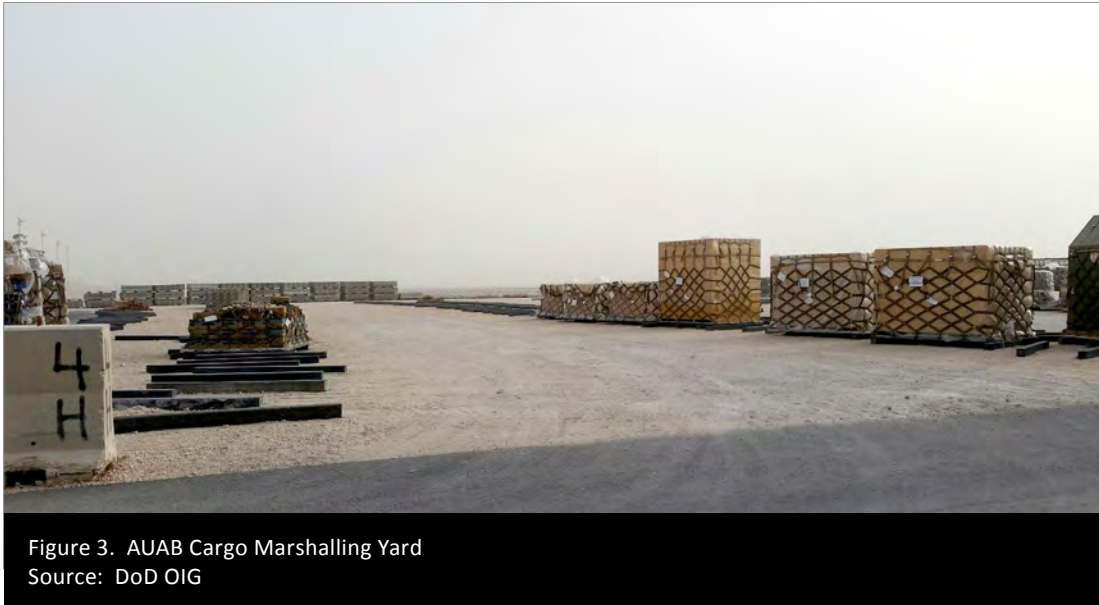
The planned consolidated squadron operations facility will replace four groupings of segregated temporary facilities. The facility will be located closer to flight line parking and the new Wing Headquarters. The consolidated squadron operations facility will provide adequate space for planning, briefing, and operational support for its personnel and will improve communications and operations efficiency between personnel located in the squadrons and the Wing Headquarters facility, Operations Group Headquarters facility, and their associated aircraft. Figure 2 depicts the temporary AUAB Squadron Operations Facilities.



Figure 2. AUAB Temporary Squadron Operations Facilities
Source: DoD OIG

The planned cargo marshalling yard will replace an underdeveloped outdoor cargo area where cargo and aircraft are exposed to the high temperatures, sand, and other elements of a desert environment. The harsh environment slows personnel operations and limits the amount of cargo that can be processed during the day. For example, gravel and foreign objects from the underdeveloped cargo area could present a safety concern to aircraft, personnel, and equipment. Because AUAB is

the key hub for all coalition personnel and cargo that travel into and out of the USCENTCOM AOR, the planned cargo marshalling yard will allow personnel to safely process cargo inside a climate controlled environment improving operations. Figure 3 depicts the current AUAB cargo marshalling yard.



AUAB MILCON Requirements Developed in Consideration of DoD's Mission in SWA

USAFCENT and USCENTCOM developed MILCON requirements for AUAB, Qatar in consideration of DoD's mission in SWA. AUAB, Qatar serves a critical air mission in SWA. The 379th Air Expeditionary Wing at AUAB supports more than 90 combat and support aircraft, including eight coalition airframes. These forces provide combat airpower and combat operations support. In addition, AUAB is the key hub for all coalition personnel and cargo that travel into and out of SWA. The consolidated squadron operations facility and cargo marshalling yard will increase communications and cargo processing efficiencies.

The MILCON prioritization process also ensured that AUAB MILCON requirements were prioritized in consideration of DoD's mission in SWA. The AUAB BMP listed the consolidated squadron operations facility and the cargo marshalling yard as the number one and number two MILCON priorities for AUAB. USAFCENT ranked the projects as the Air Forces' number 3 and number 6 priority (out of 11 USAFCENT MILCON projects) within the USCENTCOM AOR. In addition, the USCENTCOM JFUB considered USAFCENT priorities and all other services MILCON requirements when it developed the USCENTCOM MILCON MPPL. The consolidated squadron operations facility and the cargo marshalling yard projects were prioritized by

the JFUB as the number 5 and number 9 priorities out of the 21 U.S. funded SWA projects within the 2014 USCENTCOM MPPL. The AUAB MILCON development and prioritization process ensured that the USCENTOM mission in SWA was considered when requirements were developed.

Primary Facility Cost Estimates Were Unsupported

Although the two planned AUAB MILCON projects were based on valid requirements and developed in consideration of DoD’s mission in SWA, both project cost estimates were unsupported, and USACE MED primary facility cost estimates differed from our cost estimates developed using the UFC. Table 2 compares our cost estimates to the USACE MED cost estimates for each project.

Table 2. AUAB MILCON Primary Facility Cost Estimate Differences

AUAB MILCON Project	USACE MED Validated Cost	DoD OIG Calculated Cost	Difference
Consolidated Squadron Operations Facility	\$12 million	\$14.7 million	\$2.7 million
Cargo Marshalling Yard	\$7.1 million	\$8.8 million	\$1.7 million

MILCON Cost Estimating Criteria

UFC 3-740-05 establishes four methods to estimate MILCON primary facility costs. Those methods are:

- Project comparison—the estimator uses the total historical cost of a similar facility as a baseline for estimating costs of a new facility. The UFC states that this is the least accurate of the four cost estimating methods.
- Historical unit cost—the estimator uses historical project costs and determines a cost per unit value that is applied to the area of the proposed facility.
- Parametric—the estimator uses engineered values developed in historic cost databases when developing the cost estimate. The UFC considers this method more precise than project comparison and historical unit costs because costs from multiple projects are considered within the database.
- Work increment—the estimator uses unit costs to develop an estimate for the smallest work increment of each component of the proposed facility when developing the cost estimate. The work increment estimate is considered the most accurate but requires the most data to complete.

UFC 3-730-01¹⁰ provides a formula for cost estimating that considers facility size, location, and inflation. The following formula is used to estimate facility unit costs for proposed MILCON projects when the historical cost method is used.

$$\text{Adjusted Unit Cost} = \text{Base Unit Cost} \times \text{Size Factor} \times \text{Area Factor} \times \text{Inflation Factor}$$

The adjusted unit cost is the product of all of the following factors identified in the formula.

- Base unit cost is the base cost of a building type that is similar to the proposed MILCON.
- Size factor adjusts the MILCON unit cost for the size difference between the base unit size and the proposed MILCON size.
- Area factor adjusts the MILCON unit cost for the location of the proposed MILCON.
- Inflation factor adjusts the MILCON unit cost for inflation based on the construction date for the proposed MILCON.

Consolidated Squadron Operations Primary Facility Costs

The cost estimator who originally calculated the primary facility cost no longer worked for USACE MED and did not leave adequate documentation to support the cost estimates.

USACE MED validated the consolidated squadron operations facility primary facility cost estimate at \$12 million, but USACE MED and USAFCENT A7 did not maintain documentation to support the estimate. The cost estimator who originally calculated the primary facility cost no longer worked for USACE MED and did not leave adequate documentation to support the cost estimates. As a result, we could not determine if USACE MED followed UFC 3-740-05 and UFC 3-730-01 when calculating its primary facility cost estimate.

Following UFC 3-740-05, we used published DoD historical unit cost data¹¹ and calculated a cost estimate that differed from the USACE MED validated cost. Table 3 compares our cost calculation to the USACE MED calculation for the consolidated squadron operations facility. We estimated the cost of the primary facility to be approximately \$2.7 million (23 percent) more than the USACE MED primary facility estimate of \$12 million.

¹⁰ UFC 3-730-01, "Programming Cost Estimates for Military Construction," June 6, 2011.

¹¹ A list of DoD average unit cost by facility-type is published within UFC 3-701-01, "Programming Cost Estimates for Military Construction," June 6, 2011.

Table 3. Consolidated Squadron Operations Primary Facility Cost Calculation

	Base Unit Cost (per square meter)	Size Factor	Area Factor	Inflation Factor	Adjusted Unit Cost (per square meter)	Total Cost
DoD OIG	\$2,910	0.953	1.23	1.0793	\$3,682	\$14.7 million
USACE MED	–	–	–	–	\$2,996	\$12 million
Total Cost Difference	–	–	–	–	–	\$2.7 million

Cargo Marshalling Yard Primary Facility Costs

USACE MED validated the cargo marshalling yard primary facility cost estimate at \$7.1 million using costing factors other than those established within the UFC. USACE MED and USAFCENT A7 did not maintain documentation to support the estimate or explain why the criteria were not used. The USACE MED cost estimator explained that he used the “Historical Air Force Construction Cost Handbook,” February 2007, to validate the cost estimate. The Historical Air Force Construction Cost Handbook provides historical unit cost data by facility type and provides cost factor data needed to determine the cost estimate. Although, UFC 3-740-05 identifies historical unit costs as an acceptable method to determine facility cost estimates, and the USACE MED cost estimator stated that he followed the Historical Air Force Construction Cost Handbook, his calculation differed from the Historical Air Force Construction Cost Handbook.

The cost estimator explained that he deviated from the criteria for some portions of his calculation. Specifically, the cost estimator did not:

- use a size adjustment factor in his calculation;
- use the correct area cost factor for Qatar; and
- adjust inflation costs to FY 2018.

Table 4 identifies the primary facility cost estimate based on “Historical Air Force Construction Cost Handbook,” February 2007, compared to the USACE MED calculation for the cargo marshalling yard. We estimated the cost of the primary facility to be approximately \$1.7 million (24 percent) more than the USACE MED primary facility estimate of \$7.1 million.

Table 4. Cargo Marshalling Yard Primary Facility Cost Calculation

	Base Unit Cost (per square meter)	Size Factor	Area Factor	Inflation Factor	Adjusted Unit Cost (per square meter)	Total Cost
DoD OIG	\$1,721	1.06	1.24	1.196	\$2,706	\$8.8 million
USACE MED	\$1,720	–	1.13	1.12	\$2,177	\$7.1 million
Total Cost Difference	–	–	–	–	–	\$1.7 million

Supporting Facility Costs Were Not Supported

USACE MED and USAFCENT A7 did not have documentation to support the consolidated squadron operations facility and cargo marshalling yard supporting facilities costs. According to the DD Form 1391, the consolidated squadron operations supporting facilities included utilities, site improvements, and communications for a total cost of \$2.4 million. The cargo marshalling yard supporting facilities included pavements, utilities, site improvements, and communications for a total cost of \$5.3 million. The UFC does not provide specific criteria for estimating supporting facility costs. Therefore, we did not estimate supporting facility costs for the two planned MILCON projects.

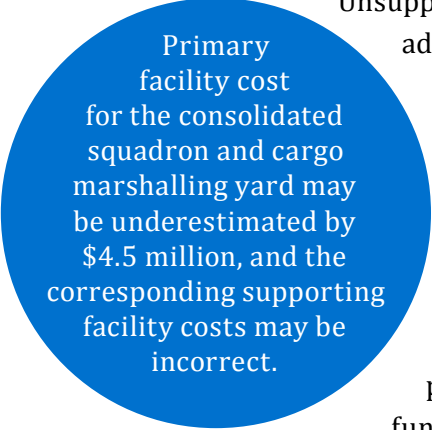
USACE MED and USAFCENT A7 Did Not Establish a Process to Formally Validate and Maintain Support for MILCON Cost Estimates

USACE MED and USAFCENT A7 did not have a process to formally validate and maintain supporting documentation for MILCON primary and supporting facility cost estimates. AFI 32-1021 establishes criteria for USAFCENT A7 to maintain MILCON project files. AFI 32-1021 requires USAFCENT A7 to maintain validated DD Forms 1391 and identifies documentation required to support primary and supporting facility unit costs within DD Forms 1391. Suggested source documentation includes:

- UFC pages and cover page showing the publication number and date;
- detailed calculations performed;
- Parametric Cost Engineering System report; and
- USACE or contractor reports and calculations.

AFI 32-1021 identifies that documentation supporting unit costs of the primary and supporting facilities should include the detailed calculations performed, including USACE or contractors' reports and calculations. Although USACE MED cost estimators validated the USAFCENT A7 DD Forms 1391, they did not retain source documentation to support cost estimates. To ensure that MILCON cost estimates are properly validated and supported, USACE MED and USAFCENT A7 need to establish policies and implement procedures that detail the validation process and the documentation required to support the cost estimate.

DoD May Improperly Budget for MILCON Within the USCENTCOM AOR



Primary facility cost for the consolidated squadron and cargo marshalling yard may be underestimated by \$4.5 million, and the corresponding supporting facility costs may be incorrect.

Unsupported MILCON cost estimates do not provide adequate information necessary to make informed budgeting decisions. Primary facility cost for the consolidated squadron and cargo marshalling yard may be underestimated by \$4.5 million, and the corresponding supporting facility costs may be incorrect. Unsupported costs could also result in USAFCENT A7 submitting inaccurate budget estimates to Congress for other SWA MILCON projects, which could result in improperly funded projects.

Management Actions Taken

During the audit, we briefed USACE MED and USAFCENT A7 officials on our findings. In response, USACE MED and USAFCENT A7 officials took corrective action to address the findings. On February 9, 2015, a USAFCENT A7 official requested USACE MED revalidate the DD Forms 1391 for both AUAB projects. In March 2015, the Engineering Branch Chief, USACE MED issued policy to establish a standard process for USACE MED cost estimators to follow when they validate DD Forms 1391. The standard process requires the cost estimator to prepare a memorandum documenting the source of cost data used to validate the DD Form 1391. In March 2015, USACE MED revalidated the consolidated squadron operations facility and the cargo marshalling yard DD Forms 1391 at \$24.0 million and \$15.3 million respectively. The overall cost of the two projects increased from \$30.5 million to \$39.3 million. The increase in the estimated cost of the consolidated squadron operations facility is attributed to an increase in size of the primary facility as well as an overhaul in its design from a single-story

facility to a two-story facility. Although revalidated cost estimates differed from our calculations, USACE MED provided USAFCENT A7 UFC-compliant documented support that primary and supporting facility costs estimates were prepared using parametric cost data.

In response to known MILCON cost estimating inconsistencies in the AOR, USACE initiated action in August 2014 to update its Qatar costing data. In January 2015, USACE MED took action to update its cost estimating software database with the costing data it collected. According to a USACE MED representative, the Qatar and Kingdom of Saudi Arabia cost books were updated during the audit. In addition, the Bahrain cost book was underway and the Kuwait cost book was scheduled for completion in FY 2016. The updated data should result in more accurate future MILCON cost estimates in Qatar and within the entire AOR.

We commend the Engineering Branch Chief, USACE MED and A7 Chief, USAFCENT for taking corrective action during the audit. The corrective actions taken addressed the two planned AUAB MILCON projects reviewed during the audit as well as future USAFCENT MILCON. Therefore, we made no recommendations in this report.

Appendix A

Scope and Methodology

We conducted this performance audit from October 2014 through July 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Interviews and Documentation Reviews

To determine and evaluate DoD's requirements development and prioritization process for AUAB MILCON, we interviewed AUAB MILCON representatives at the following locations:

- USCENTCOM at MacDill Air Force Base, Florida
- USAFCENT 379th Air Expeditionary Wing at AUAB, Qatar
- USAFCENT A7 at Shaw Air Force Base, South Carolina
- USACE MED at Winchester, Virginia

We identified two AUAB MILCON projects listed in the 2014 USCENTCOM MPPL from FY 2016 through FY 2021 with a total value of approximately \$30.5 million:

- Consolidated squadron operations facility, \$16 million
- Cargo marshalling yard, \$14.5 million

We obtained and reviewed the following documents to evaluate DoD's MILCON requirements development process and determine if MILCON was developed in consideration of DoD's SWA mission.

- USCENTCOM TPP
- AUAB, Qatar BMP Draft, October 2014
- 2014 USAFCENT MPPL
- 2014 USCENTCOM MPPL
- Consolidated squadron operations facility PPR, January 14, 2013
- Cargo marshalling yard PPR, January 22, 2013
- Validated consolidated squadron operations facility DD Form 1391, March 20, 2014
- Validated cargo marshalling yard DD Form 1391, March 18, 2014

We interviewed a USACE MED cost estimator and compared primary and supporting facilities cost in validated DD Forms 1391 to the following criteria to determine if AUAB, Qatar MILCON requirements were developed in accordance with applicable guidance:

- Unified Facilities Criteria 3-740-05, “Handbook: Construction Cost Estimating,” June 2011
- Unified Facilities Criteria 3-730-01, “Programming Cost Estimates for Military Construction,” June 6, 2011
- DoD Directive 4270.5, “Military Construction,” February 12, 2005
- AFI 32-1021, “Planning and Programming Military Construction (MILCON) Projects,” June 14, 2010 and October 31, 2014 versions
- “Historical Air Force Construction Cost Handbook,” February 2007

Use of Computer-Processed Data

We did not use computer-processed data to perform this audit.

Use of Technical Assistance

During the audit, we received assistance from DoD OIG Quantitative Methods Division personnel to conduct a 100-percent review of planned U.S. funded MILCON at AUAB from FY 2016 through FY 2021.

Prior Coverage

During the last 5 years, the DoD OIG and the Air Force Audit Agency issued four reports that discussed MILCON project requirements and processes. Unrestricted DoD OIG reports can be accessed at www.dodig.mil/pubs/. Air Force Audit Agency reports are unavailable over the internet.

DoD OIG

DODIG-2012-057, “Guidance Needed to Prevent Military Construction Projects From Exceeding the Approved Scope of Work,” February 27, 2012

DODIG-2012-134, “Contingency Contracting: A framework for Reform 2012 Update,” September 18, 2012

Air Force

F2013-0008-020000, “Military Construction Requirements,” February 20, 2013

F2011-0014-FD1000, “United States Air Forces Central Area of Responsibility Construction Planning,” April 12, 2011

Appendix B

DD Form 1391 Template

1. COMPONENT	FY _____ MILITARY CONSTRUCTION PROJECT DATA	2. DATE <small>(YYYYMMDD)</small>	REPORT CONTROL SYMBOL DD-A&T(A)1610	
3. INSTALLATION AND LOCATION		4. PROJECT TITLE		
5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST (\$000)	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
10. DESCRIPTION OF PROPOSED CONSTRUCTION				

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Acronyms and Abbreviations

AOR	Area of Responsibility
AUAB	Al Udeid Air Base
BMP	Base Master Plan
JFUB	Joint Facilities Utilization Board
MILCON	Military Construction
MPPL	Master Plan Priority List
OIG	Office of Inspector General
PPR	Planning and Programming Report
SWA	Southwest Asia
TPP	Theater Posture Plan
UFC	Unified Facilities Criteria
USACE MED	U.S. Army Corps of Engineers, Middle East District
USAFCENT A7	U.S. Air Forces Central Command, Civil Engineer Directorate
USCENTCOM	U.S. Central Command



Whistleblower Protection

U.S. DEPARTMENT OF DEFENSE

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