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Sizing Mobility Readiness Spares Packages for Today's Warfighting Units

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THESIS

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Abstract

As the Air Force transforms from a garrisoned force into a light expeditionary force, one area for restructuring is the manner in which mobility readiness spares packages (MRSPs) are managed and stocked. For a war tasking, thirty days supply is typically deployed in a MRSP as it is assumed that there will be no re-supply for thirty days. Studies of combat operations from the past decade suggest that thirty days without re-supply is an outdated assumption. The objective of this thesis is to economically build a robust MRSP that is flexible enough to provide adequate support for a variety of squadron sizes at least through day 20 of a war. Faster establishment of a reliable re-supply pipeline is the key to successfully implementing such a MRSP. This research focused on three different weapon-systems; the A-10, F-15E, and F-16C. Through use of the Aircraft Sustainability Model, smaller MRSPs are constructed which have the ability to adequately support squadron sizes of 12, 18, and 24 aircraft based on their ability to maintain aircraft availability goals without generating excessive amounts of expected backorders.

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Christopher M. Beckley

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I. Introduction

Background

As the Air Force continues to transform from a garrisoned force to a light expeditionary force, one area leadership is planning on restructuring is the manner in which deployable readiness spares packages (RSPs) are managed and stocked. According to AFMAN 23-110, Volume I, Part 1, Chapter 14, *Readiness Spares Packages and High Priority Mission Support Kits*, "The major objective of the RSP program is to support national strategy in consonance with the guidance issued by the Office of the Secretary of Defense. Specifically, the Air Force objective is to authorize, acquire on time, preposition, prestock, and maintain in a serviceable condition ready for use, all RSPs needed to support the wartime activities specified in the War and Mobilization Plan (WMP)" (Department of the Air Force, 2006: Ch. 14, 5). The parts stocked in each deployable RSP, known as a mobility readiness spares package (MRSP), are calculated using the Aircraft Sustainability Model (ASM). ASM is a mathematical tool based on the Dyna-METRIC pipeline model (Department of the Air Force, 2006: Ch. 14, 30). "(MRSP) authorizations are based entirely on formal wartime tasking in the WMP, Volume III. That tasking is determined by agreement between HQ USAF/XO (or equivalent for nonairborne authorizations) and the appropriate MAJCOM operational office of primary responsibility. Authorizations for RSPs resulting from those wartime taskings are listed in the HQ USAF RSP Authorization Document. Volume I provides authorization for airborne RSPs, and Volume 2 provides authorization for non airborne RSPs. MAJCOMs are authorized RSPs for allocation to specific units/bases" (Department of the Air Force, 2006: Ch. 14, 9). Air Force policy also requires that "items and quantities in RSPs will, in all cases, be the minimum necessary to support major command required missions as reflected in WMP tasking" (Department of the Air Force, 2006: Ch. 14, 5).

This thesis focuses on how to best use limited financial resources to purchase the right number and mix of spare parts for stocking in MRSPs so what is currently considered the minimum number of items and quantities can be further reduced. The spare part support system includes the MRSPs as well as items traveling through the supply pipeline to fill Expected Backorders (EBOs). The pros and cons of smaller MRSPs must be measured by inventory cost savings verses possible transportation cost escalation due to a potentially larger number of EBOs. This chapter begins by naming the specific issue investigated, and then states a research question and investigative questions. It concludes with a discussion of research assumptions and methodology.

Statement of the Issue Investigated

Most Air Force units deploy with thirty days of spare parts in their MRSP (Department of the Air Force, 2006: Ch. 14, 24). The current political and economic situation in the U.S. Air Force requires a change in policy regarding management of MRSPs. The issue is deciding how many days supply to stock in a MRSP given fiscal restraints and the desire to create a more agile Air Force while decreasing the logistics footprint. The intent is that a single MRSP per weapon-system will be robust enough to support multiple fleet sizes. In this thesis, the words "weapon-system" means a specific block of a particular aircraft. For example, there are seven different blocks of the F-16. With approximately 45% spare parts commonality across the different blocks it is important to realize that a F-16 is not a F-16 (Winchester, 2007). This research focused on three different weapon-systems; the A-10, F-15E, and F-16C. Besides saving money through stocking fewer parts, a more important benefit of smaller MRSPs is that they generate a smaller logistics footprint.

By decreasing the number of days that a MRSP is stocked to support, a re-supply pipeline will need to be established before the initial stock is depleted. A faster re-supply pipeline is the key to smaller MRSPs being successful. When a weapon-system is down for maintenance to the extent that it is not capable of performing its mission, the parts needed to repair it are referred to as mission capable (MICAP) parts. An additional supply of spare parts, called a follow-on spares package (FOS), may need to be sent after the initial deployment to increase the supply stock level in order to minimize MICAPS and maintain aircraft availability goals.

Research Question

For how many days (less than 30) and what number of aircraft should a weapon-system specific MRSP be built to support, presuming it needs to be robust enough to achieve aircraft availability goals in aircraft fleets of various sizes? A related issue is how well this number of days and fleet size combination compares with the number of days proposed by Air Staff officials. Specifically, the proposed number is 20 days support for all fighter aircraft (Winchester, 2007).

Investigative Questions

In order to direct the research and answer the research question, the following three investigative questions were answered. Every question is asked of each independent weapon-system.

1. How many days of support ca MRSPs built for 10, 15, 20, 25, and 30 days really provide based on predicted aircraft availability rates?
2. How do costs in dollars compare between MRSPs built for 10, 15, 20, 25, and 30 days?
3. How well does the least expensive MRSP that meets aircraft availability goals for at least 20 days, across as many fleet sizes as possible, perform based on EBOs?

Assumptions

This research is founded on the key assumption that the deployed war fighter can be adequately supported with less than 30 days supply of spare parts because the re-supply pipeline can be established and reliable in less than 30 days. The quicker a reliable re-supply pipeline can be established, the fewer the spares that need to initially deploy to support the war fighter.

Any location a weapon-system deploys to is assumed to be supportable by airlift. This assumption is based on the fact that a C-17 or C-130 can land on the same runway as a modern fighter. In all cases, support equipment and personnel will be airlifted to a deployed location in advance of the weapon-system. Commercial parcel delivery service from FedEx, DHL or other commercial parcel carriers is assumed to be available within two weeks. The United States does not have an established military presence in some nations. American parcel delivery companies observe U.S. embargos currently in place against some nations. However, the basic infrastructure for a commercial supply chain from the United States to such nations is likely already in existence. For example, DHL currently provides service to 220 countries including North Korea and Iran.

Methodology

The Management Sciences Division of the Plans and Programs Directorate, Headquarters Air Force Material Command (AFMC/A8S) was the sponsor for this project. All data was provided by this office. The sponsor provided the most recent Requirements Execution Availability Logistics Module (D087G) data. The D087G is essentially a list of parts stocked in a specific MRSP. The Air Force uses ASM to determine how many spare parts are required to be maintained in each MRSP. ASM is also capable of evaluating how well a MRSP will perform under variable circumstances. The information on the D087G was analyzed through the use of ASM to determine MRSP sizes for 10, 15, 20, 25, and 30 days. For example, ASM was used to build a fleet size and weapon specific MRSP for 20 days of support. The performance of this 20 day MRSP was analyzed through ASM at five day increments beginning with day ten and ending with day thirty. The variable fleet size was then changed for each day of analysis to see how well the MRSP supported fleets of 6, 12, 18 and 24 aircraft. The three sets of MRSP analysis were each compared to their status quo 30 day MRSP to determine which ones were the most cost effective alternatives based on dollars and EBOs.

The above scenario required calculating 30 MRSPs for each weapon-system of interest (5 MRSP sizes X 6 fleet sizes). Each MRSP was then evaluated at every combination of four fleet sizes of interest and five day increments. This would result in each MRSP being evaluated 20 times. However, due to the deterministic nature of ASM it is redundant to evaluate a MRSP at the same fleet size/day increment combination as it was built to support. For example, a MRSP built to support a fleet of 18 aircraft for 20 days does not need to be evaluated at the 18 aircraft 20 day fleet size/day increment combination point. Therefore, MRSPs built to support fleet sizes of 6, 12, 18, and 24 aircraft only need to be evaluated 19 times while MRSPs built to support fleets of 15 or 20 aircraft must be evaluated 20 times. A MRSP built to support X aircraft for Y days does not need to be evaluated at the same X, Y combination because the data values generated by ASM in an evaluation are equal to the data values generated in the initial calculation. Figure 1 visualizes this concept. Each square represents a fleet size/day increment combination for which every MRSP was evaluated. If a specific MRSP was built for a fleet size/day increment combination that was the same as a combination in one of the squares, then that specific MRSP did not need to be evaluated for that square.

	6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	6 X 30	12 X 30	18 X 30	24 X 30
Day 25	6 X 25	12 X 25	18 X 25	24 X 25
Day 20	6 X 20	12 X 20	18 X 20	24 X 20
Day 15	6 X 15	12 X 15	18 X 15	24 X 15
Day 10	6 X 10	12 X 10	18 X 10	24 X 10

Figure 1. Fleet Size/Day Increment Evaluation Combinations

Ten MRSPs need to be evaluated 20 times and 20 MRSPs need to be evaluated 19 times for a total of 580 evaluations per weapon-system (10 X 20 + 20 X 19). The data output from ASM concerning MRSP cost, aircraft availability, and EBOs was incorporated into a data table for comparison. Each weapon-system had its own dedicated series of 30 tables; one for each MRSP.

Summary

The manner in which MRSPs are managed and stocked is being transformed to better support a light, expeditionary Air Force. This research focuses on how well a single weapon-system specific MRSP can support various sizes of aircraft fleets. Logistics benefits can be gained by using smaller MRSPs if they do not generate an excessive number of EBOs. The key to making smaller MRSPs feasible rests on the assumption that a reliable re-supply pipeline can be established by day 20. The next chapter provides evidence for why faster re-supply is possible and lays further groundwork from which this research was based.

II. Literature Review

Chapter Overview

A review of literature supports the feasibility of research related to proper sizing of MRSPs. This chapter begins by looking at the current political and economic situation in the Air Force which is driving the need for smaller MRSPs. It moves on to examine special requirements and characteristics which make deployable spare parts different from other inventory. Next it addresses MRSP research efforts using data from Operations IRAQI FREEDOM and NOBLE ANVILE. The chapter concludes with a discussion of the Air Force's current plans for restructuring the manner in which MRSPs are managed and stocked.

Policy Change Drivers

The current policy is that each base Logistics Readiness Squadron (LRS) manages the MRSPs assigned to its base for supporting the flying squadrons in times of deployment. When a unit is tasked to deploy, supply personnel from the LRS prepare the unit's MRSP for shipment. For a war tasking, the entire thirty days supply of spare parts is typically deployed in the MRSP as it is assumed that there will not be any re-supply for thirty days. Studies of combat operations from the past decade suggest that thirty days without re-supply is an outdated assumption. The question now is how many days of supply support should a MRSP provide?

A movement is afoot in the US Air Force to change policy regarding management of MRSPs. The Air Force Chief of Staff has called for MRSPs to be more responsive and flexible, thereby enabling better support to Air Expeditionary Force (AEF) operations and meeting the needs of the 1, 4, 2, 1 concept (defend the United States, deter aggression in four regions of the world, and sustain two regional combat operations with a decisive victory in one of them). In fiscal year 2006, MRSPs faced a 77% funding reduction as their allocated budget was cut from 112.6 million dollars to 20.5 million dollars. The current repairable spares requirement, which includes MRSPs as well as peacetime operating stock, already faced a 15% financial shortfall (Tew and Winchester, 2006:2-4).

There are issues more important than MRSP funding. Reducing airlift required for deploying and rotating units into a theater of operations, along with reducing the overall logistics footprint, can both happen by reducing the amount of spare parts tied to a MRSP (Winchester, 2007). The Combat Service Support Logistics Team, under the CENTCOM J4, has recommended reducing the amount of transportation required to move a unit's MRSPs. First, spares should be forward positioned to reduce air and sea lift. Equipment already in theater should be transferred to rotating units rather than each unit bringing its own equipment. All movement requiring airlift into or out of the theater should be justified to include AEF rotation MRSPs (Tew and Winchester, 2006:4). These recommendations are designed to lessen the Air Force's logistics footprint and reduce waste as is called for in Air Force Smart Operations for the Twenty-First Century (AFSO21).

The ability to project combat force against an enemy is constrained by a nation's logistics capabilities, or its willingness to assign resources to logistics (Anderson and others, forthcoming:2). As discussed above, the financial resources used to fund Air Force spares are being significantly cut. When resources are directed away from logistics support, leadership must either accept that it will have a diminished ability to project combat power, or find a way to project the same combat power on a tighter budget. A

RAND study concluded that for the Air Force to become truly expeditionary as opposed to a garrisoned force focused on the European Theater of the Cold War and the Korean peninsula, most processes would have to be reengineered (Anderson and others, forthcoming:4). The current political and economic situation is forcing senior MRSP managers to begin the reengineering process.

Deployable Spare Part Requirements

Several special requirements make planning the logistics of deployable spare parts different than planning for other inventory. The service requirement is higher than normal as the effect of a stock out is a MICAP part. The demand for parts is difficult to forecast. With such high variability it is difficult to predict how many parts are too many. The price of the individual parts may be quite expensive (Huiskonen, 2001:125). Parts that are deployed but not used tie up capital that could be invested elsewhere and waste space and money in the transportation system. The majority of stock numbers in a MRSP are used in the first 15 days of war. There is generally a higher consumption rate of parts between days 1-10 and days 25-30 of war. This suggests a range of stock numbers verses depth, or number of items, issue (Tew and Winchester, 2006:16).

The goal of every inventory management system is to provide the right amount of service with a minimum inventory level and administrative cost. Typically, spare part inventories have been managed through the use of general inventory principles, but not enough attention has been given to the special requirements that make spare parts unique (Huiskonen, 2001:125-126). This may be the case with MRSPs. Each branch of the military is required to stock items based on economics in accordance with Department of Defense (DoD) regulation 4140.1, *Materiel Management Regulation*. Each dollar spent on a spare part needs to be making the greatest quantifiable contribution possible to system availability (Anderson and others, forthcoming:10).

Recent Research Efforts

Reducing the number of days a MRSP is stocked to support is a potentially useful endeavor only if the MRSP is stocked with the right parts to begin with. Smith and Anderson assessed the effectiveness of MRSPs used in Operation IRAQI FREEDOM. These MRSPs were calculated based on no re-supply for 30 days as directed by current Air Force policy. The study was limited to MRSPs supporting the E-3B, F-16C, and HC-130P weapon-systems. Each MRSP was operated by a single unit at a single location. Variables used to determine MRSP effectiveness were fill rate, MICAP rate, issue effectiveness, stockage effectiveness, and total requirements variance. The MRSPs supporting the E-3B and HC-130P were found to be considerably more effective than the MRSP supporting the F-16C. Fill rates for all three MRSPs remained over 92% however stockage and issue effectiveness rates for the F-16C were at 54.2% and 36.1%. Nearly 31% of the requests made against the F-16C MRSP were for parts that had to be ordered MICAP because they were not on hand to be issued from the MRSP. This is compared with 3% for the E-3B and 17% for the HC-130P (Smith and Anderson, 2006:2-3).

Martinez and others studied the effect of reducing MRSP sizes to satisfy demand until re-supply could be established with data from Operation NOBLE ANVIL. The assumption was that the speed at which an item moves through the logistics pipeline could be increased beyond that which was then possible. The data pertaining to various MRSPs was exported from ASM into an Excel spreadsheet and the expected values for order and ship time for each item were adjusted using the solver add-in. The data was adjusted to reflect average order and ship times of 5, 10, 15, and 20 days for entire MRSPs belonging to four different aircraft types; B-52H, F-15E, F-16C, and KC135. This experimental data was analyzed using ASM where two variables, order and ship time (O&ST) and day order and ship begins (DO&SB) were matched with various combinations for each of the aircraft to simulate a faster logistics response time. The results showed that there are potential cost savings if O&ST, DO&SB, or both can be reduced. With cost savings also comes a reduction in MRSP size, which results in using fewer cargo aircraft in a deployment (Martinez, 2002:15-16).

Martinez and others found that O&ST has a significant effect on MRSP cost and size, while DO&SB has very little effect. A regression analysis was done to better understand the relationship between the two independent variables, O&ST and DO&SB. The results showed that O&ST is always a significant contributor to MRSP size and cost. The variable DO&SB was significant only for the B-52H MRSP size and cost, and for KC-135 MRSP size (Martinez and others, 2002:16).

Martinez and others introduced the concept of a logistics pipeline on the fly. Just as private industry has reduced its inventory and instead relies on efficient transportation to provide supplies to the right place at the right time, the Air Force would also rely on fast and efficient transportation to provide supplies at the right place and time. The deployed operation is the only time we assume there will be no re-supply for thirty days. Therefore there is no reason to keep thirty days supply of parts in MRSPs at the wing level. A unit could deploy with MRSPs filled with sufficient parts to last for the first few days of a conflict. The parts projected to be needed after the first few days could be shipped from a centralized inventory location at the same time as the unit is deploying from its home base. These parts would not necessarily need to be shipped on military owned airlift. By maintaining smaller MRSPs at the base level and moving many items currently held at the base level to a central inventory point, the Air Force can lower its overall level of inventory. This is accomplished by relying on risk pooling, the theory that high demand from one unit is offset by low demand from another, thereby allowing safety stock to decrease (Martinez and others, 2002:4).

Martinez and others use the variables DO&SB and O&ST to conduct an analysis of how well the supply pipeline performed during a specific military operation. The logistics pipeline on the fly concept is an idea for how the supply pipeline might be improved. This thesis analyzes data used to calculate MRSPs for three weapon-systems with the goal of determining which MRSP can best support aircraft squadrons of various sizes based on the assumption that the supply pipeline can be established in less than 30 days.

Benefits of Lean Logistics

By practicing lean logistics it is possible to dramatically reduce shipment times so that the theoretical savings discussed above become a reality. Lean logistics is about improving a supply chain's effectiveness by eliminating waste which in turn improves responsiveness. The key to lean logistics with regard to spare parts is focusing on quickly responding to a shortage when it occurs rather than attempting to prevent a shortage by maintaining a large, potentially wasteful, inventory. Lean logistics reduces transportation and repair times, which in effect shortens the supply chain (O'Malley, 1996:1-2).

Plans for Air Force Change

Tew and Winchester recommend that the Air Force transition to a centralized management system for the MRSPs. The transition would be a two step process. The initial step would cut the current 30 day level of stock in each MRSP at the wing level to 20 days of stock. A wartime spares safety net known as follow on spare support packages (FOS) would be stocked with spares required between days 21 and 30 and managed at the enterprise level. They would serve as a wartime spare parts pool, not allocated to any specific unit. After a squadron deploys with its scaled down MRSP, if necessary, a FOS could be sent from the central storage point to augment and supplement the initial MRSP. A deployed unit experiencing re-supply problems would be sent a FOS which results in that unit having an additional ten days of supply, thereby bringing the total level of supply to 30 days. The second purpose of the FOS is to help normalize supply operations at enduring bases by creating supply levels in the theater of operations. When not being used to support war taskings, FOS items would be transferred by readiness based leveling to the customers of highest need (Winchester, 2007).

The second step is to move all MRSPs from the wing level to the central stocking point for enterprise level management. Having enterprise level management of all spare part inventories is an important step for maximizing availability across the entire Air Force. The proposed Global Logistics Support Center should provide an opportunity for such enterprise level management (Winchester, 2007). The importance of both these steps is that they shorten the supply chain. By initially deploying with a smaller MRSP less airlift is needed. By storing the follow on support packages and eventually all the MRSPs at a central location they will arrive at the deployed location faster due to the shorter travel distance. This presumes the central storage location is overseas (Tew and Winchester, 2006:31-45).

The above scenario assumes there are no problems delivering the right cargo to the right unit. It may be worthwhile to send the supply airman who will be responsible for the MRSP at the deployed location to the forward inventory point to sign for the MRSP and then accompany it to the deployed location. Having the end user responsible for the cargo present through the deployment process may help prevent errors, minimize lost cargo and provide a feeling of comfort to the deploying unit's commander and maintenance personnel.

The proposed implementation of the initial step in Tew and Winchester's MRSP reduction plan is late in calendar year 2007 with the second step projected for 2011. Tew and Winchester's research along with Martinez and other's research suggests that smaller MRSPs managed at an enterprise level will work. If this is correct, change management may prove to be the most challenging aspect of implementing Tew and Winchester's proposed plan. In many minds, the thirty-day MRSP is a sacred cow program which should not be altered. However, with the reality of continually reduced funding, and the call for a lighter, leaner and more agile expeditionary focused Air Force, there may not be a choice.

This research is useful in that it expands on the range verses depth research already done by Tew and Winchester. It provides further evidence that a standard 20 day MRSP can adequately support multiple sized fleets of aircraft. Through the use of ASM, MRSPs were calculated and analyzed to determine how well and for how long a single weapon-system specific MRSP can be expected to support multiple sized fleets of aircraft. The results of this thesis add value by pointing out a specific 20 day MRSP for each weapon-system. Such an MRSP can be expected to support multiple sized fleets of aircraft for at least 20 days without generating excessive EBOs relative to the status quo 30 day MRSP. The status quo 30 day MRSP would currently be built to support a specific sized fleet of aircraft.

Given a choice, a maintainer would rather take more spare parts than less. Given a choice, a maintainer would rather be responsible for his or her spare parts instead of relying on a unit operating a central storage point to provide them. Presuming that the smaller sized MRSPs supported by a rapidly established supply chain provide the same or better capability to the deployed maintainer, precise communication and follow-through between the deploying unit and supplying unit will be the key to making centrally stocked, modular MRSPs work.

Summary

This chapter reviewed literature supporting the feasibility of research related to proper sizing of MRSPs. It began by looking at the current political and economic situation in the Air Force which is driving the need for smaller MRSPs. The chapter moved on to examine special requirements and characteristics which make deployable spare parts different from other inventory. Next it addressed MRSP research done with data from Operations IRAQI FREEDOM and NOBLE ANVILE. Finally the chapter concluded with a discussion of the Air Force's current plans for restructuring the way MRSPs are managed and stocked. AFSO21 calls for process improvements across the Air Force, primarily based on lean logistics principles. If re-supply pipelines at deployed locations are can be established in 20 days, then MRSPs only need to be stocked with 20 days supply. There needs to be the potential to receive additional spare parts through a FOS in the instances when the re-supply pipeline is not established in time, or when the standard MRSP can not support a certain fleet size without generating excessive EBOs. Then 30 days of supply in an MRSP can become the exception rather than the rule.

III. Methodology

Chapter Overview

The purpose of this chapter is to describe the methodology used to conduct the research. It begins by explaining the research objective and listing investigative questions. Next it defines the Requirements Execution Availability Logistics Module and Aircraft Sustainability Model. An understanding of these two entities is imperative to understanding the research method. Finally, it explains the data and necessary assumptions and then discusses the research design.

Research Objective

The objective of this research is to find a MRSP built for less than 30 days which is robust enough to support a variety of aircraft fleet sizes, and compare that MRSP with the suggested 20 day MRSP proposed by Pentagon officials. The research is limited to three weapon-systems; the A-10, F-15E, and F-16C. All three weapon-systems are fighter aircraft which deploy in a similar manner. As discussed in the previous chapters, a standard MRSP is built to support a flying squadron for thirty days; in order to cut costs and reduce the logistics footprint the number of days of support must be reduced and a standard MRSP developed.

There may be a time difference between when the smaller MRSP no longer has the ability to adequately support the flying squadron and when the re-supply pipeline is established to provide sustainment for the squadron. This might be because of excessive amounts of EBOs or failure to meet aircraft availability goals. During this time gap one might expect the weapon-system to break to the extent that it is not capable of performing its mission. To minimize the amount of MICAP parts it may be necessary to send a FOS a few weeks into the conflict.

Investigative Questions

The following questions were developed so that their answers support the research objective. Every question is asked of each independent weapon-system.

1. How many days of support ca MRSPs built for 10, 15, 20, 25, and 30 days really provide based on predicted aircraft availability rates?
2. How do costs in dollars compare between MRSPs built for 10, 15, 20, 25, and 30 days?
3. How well does the least expensive MRSP that met aircraft availability goals for at least 20 days, across as many fleet sizes as possible, perform based on EBOs?

Requirements Execution Availability Logistics Module (D087G and D087H)

The Requirements Execution Availability Logistics Module (REALM) D087G and D087H are data systems that develop and support MRSPs by computing item requirements to support unit taskings. They also provide the basis for the budget for buying and repairing items (Department of the Air Force 2006:Ch 14, 81). The DO87G is the classified portion which computes individual item requirements for MRSPs based on projected flying hours provided in the RSP Authorization Document. The Aircraft Sustainability Model (ASM) is the tool used to do the mathematical computation in the D087G System. It is not economically practical or statistically possible to compute a stock level that achieves 100 percent weapon-system availability. Instead, the goal is to stock enough parts to meet the direct support objective, the minimum number of mission capable aircraft needed to meet a unit's wartime tasking sorties (Department of the Air Force 2006:Ch 14, 30,69). The unclassified D087H is essentially a list of items maintained in each weapon-system specific MRSP. Data for this thesis came exclusively from unclassified D087H data files. The fact that the data came from an unclassified source does not limit the usefulness of the results from this study. War plans and projected flying hours change, new scenarios arise. This study uses flying hour parameters which can be broadly applied across the spectrum of possible scenarios.

Aircraft Sustainability Model

The Aircraft Sustainability Model is a computer program based on the Dyna-METRIC supply pipeline model. It is used to compute item requirements for MRSPs. Instead of using the Direct Support Objective as a computation parameter, ASM uses its inverse, the number of aircraft not mission capable – supply (NMCS) (Department of the Air Force 2006:Ch 14, 30). ASM uses a weapon-system approach to determine which parts to stock in a MRSP. The decision to stock or not stock a part is based on the part's contribution to weapon-system availability. A part by part marginal analysis is conducted to determine the next part to stock based on its contribution to weapon-system availability per unit cost. This method ensures a cost effective spare part mix (Slay and others, 1996:1-1). The marginal analysis meets the intent of DoD regulation 4140.1, *Materiel Management Regulation*, by guaranteeing that each dollar spent on a spare part makes the greatest quantifiable contribution possible to weapon-system availability (Anderson and others, forthcoming: 10).

Data and Assumptions

The Management Sciences Division of the Plans and Programs Directorate, Headquarters Air Force Material Command (AFMC/A8S) sponsored this research and provided all necessary data. They provided the most recent Requirements Execution Availability Logistics Module (D087H). The D087H is essentially a list of parts eligible to be stocked in a weapon-system specific MRSP.

It is assumed that all locations where the weapon-systems studied will deploy are sustainable by air lift as modern cargo aircraft are capable of using the same airfields as modern fighters. Further, it is assumed that the maintenance and supply data used to build the D087H documents was accurate. A weapon-system that deploys with a large MRSP built on faulty data may have a decent availability rate and fewer expected backorders because there is additional inventory to conceal the problems caused by faulty data. If that same weapon-system deployed with a smaller MRSP which was built on faulty data, the issue availability rate and number of expected backorders may be unsatisfactory as there would no longer be excess inventory to hide the data problems.

Research Design

The Aircraft Sustainability Model was the tool used to analyze the weapon-system specific D087H data files. In general, the experiments consisted of building a series of MRSPs for each weapon-system and evaluating their performance by adjusting two variables, time and fleet size. A specific MRSP was computed in ASM to support a fleet of a certain type and number of fighter aircraft for a given number of days. ASM was then used to evaluate the MRSP for a fleet of 6 aircraft at five day intervals beginning with day 10 and ending with day 30. The next step was to change the fleet size and evaluate the MRSP using the same five day intervals. The fleet sizes of interest were six, 12, 18, and 24 aircraft. These sizes were chosen because fighter squadrons typically deploy with such numbers of aircraft.

In addition to calculating MRSPs to support fleets of 6, 12, 18, and 24 aircraft, MRSPs were also calculated for fleets of 15 and 20 aircraft. This was done to add MRSPs to the analyses which are built for fleet sizes which normally do not deploy, but are close in size to a standard deployable fleet size for every weapon-system. In each evaluation ASM calculated the expected percent of aircraft available, the expected NMCS value, the achieved confidence of the NMCS target, and EBOs. The data was collected and organized in tables built using an Excel spreadsheet. Table 1 is an example of an empty table used to collect data for one MRSP.

Table 1. Empty ASM Data Collection Table for One MRSP

Kit	Supporting a specific weapon-system for X days and Y aircraft				
Cost	Dollar Value				
		6 ship	12 ship	18 Ship	24 ship
Day 30	Availability %				
Day 30	NMCS				
Day 30	NMCS Confidence				
Day 30	EBO				
Day 25	Availability %				
Day 25	NMCS				
Day 25	NMCS Confidence				
Day 25	EBO				
Day 20	Availability %				
Day 20	NMCS				
Day 20	NMCS Confidence				
Day 20	EBO				
Day 15	Availability %				
Day 15	NMCS				
Day 15	NMCS Confidence				
Day 15	EBO				
Day 10	Availability %				
Day 10	NMCS				
Day 10	NMCS Confidence				
Day 10	EBO				

Thirty individual MRSPs were calculated in ASM per weapon-system. A MRSP was built for every combination of five time intervals and six fleet sizes. Once calculated, each MRSP was evaluated for every combination of five time intervals and four fleet sizes. Therefore, after being calculated, each MRSP must be evaluated with ASM either nineteen or twenty times. Nineteen times for MRSPs built to support fleet sizes of 6, 12, 18 or 24 aircraft, and twenty times for MRSPs built to support fleet sizes of 15 or 20 aircraft. A MRSP built for a specific time interval/fleet size combination does not need to be evaluated at the same combination, as the expected result values are equal. In total the thirty MRSPs for each weapon-system must be evaluated 580 times, as explained in chapter 1. This thesis evaluated three weapon-systems for a total of 90 MRSPs and 1,740 evaluation points.

ASM Parameters

When the D087H data files are imported into ASM, they import with parameters that are unique to each weapon-system. An important weapon-system parameter is the aircraft availability goal, or direct support objective. The aircraft availability goal is the minimum percentage of the fleet of aircraft that the war planner desires to have operational. The weapon-system specific aircraft availability goals are listed in table 2. Note that the aircraft availability goals are always higher the first ten days of war than they are on subsequent days.

Table 2. Aircraft Availability Goals

Aircraft	Days 0 -10	Days 11+
A-10	88.83%	77%
F-16C	83.33%	75%
F-15E	82.72%	75%

The NMCS target is directly related to the availability goal as the NMCS is the inverse. The cannibalization parameter was set to allow cannibalization of both Line Replaceable Units (LRUs) and System Replaceable Units (SRUs). The cannibalization parameter was set as such because maintainers cannibalize, or take parts from one broken aircraft to repair another broken aircraft, when necessary. The advanced parameters, which include stock options and dynamic re-supply variables, were not adjusted from their default settings. The weapon-systems differed from one another with regard to adjustable scenario data which is driven primarily by sortie rates. Fleet size was the only category of scenario data adjusted. It was necessary to change the fleet size in order to build and evaluate the different MRSPs as discussed above.

Using ASM

The steps used in operating ASM for this research were developed from the ASM users guide found under the "help" category on the program menu. Additional clarification came from Mr. Michael Niklas, the research sponsor at Air Force Materiel Command's Management Sciences Division of the Plans and Programs Directorate.

After downloading ASM to the computer, two configuration settings were adjusted in order to run the experiments described above. In the ASM_90 folder the configuration settings were in a file titled "model." After opening "model," Development was changed to equal "ON" and User Type was changed to equal "USAFIP." These adjustments were necessary to allow changes in the scenario data.

Building a MRSP

Data for building a weapon-system specific MRSP was imported from a D087H data file provided by the research sponsor. Figure 2 is a screen view of how importing a D087 data file was initiated. ASM prompted the user to supply a file location and name the MRSP kit.

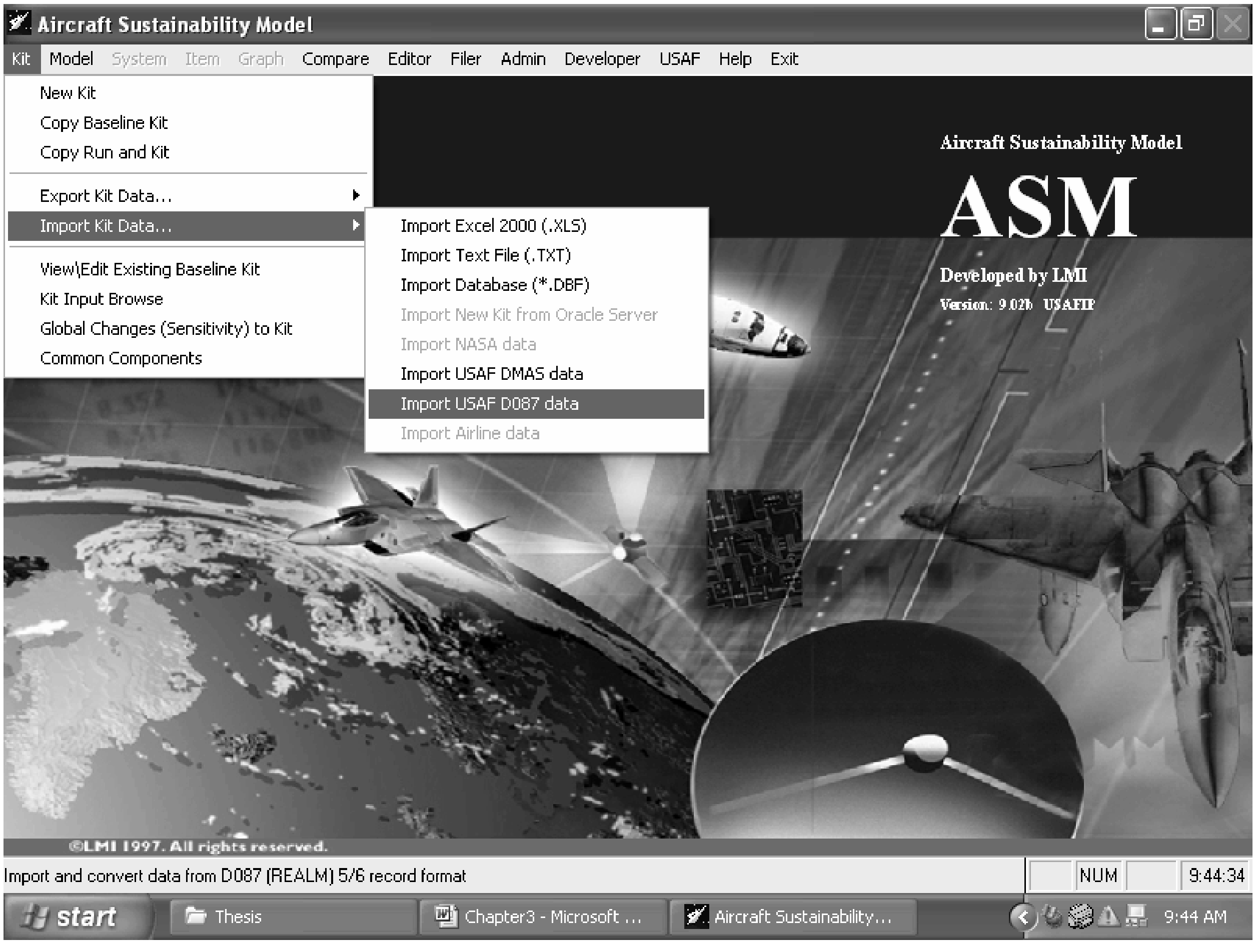


Figure 2. Importing a MRSP From D087 Data File

In building a MRSP the "model" option on the main menu was selected. A screen similar to that in figure 3 appeared. The button marked "baseline" was clicked. The user was next prompted to select a kit from those that were imported as described above. The parameters were then defined. The first analysis day was always day 10 because the NMCS target and related aircraft availability percentage are slightly higher than in the following days. The second analysis day was at any five day interval from 15 to 30. These later days have higher aircraft availability percentage goals. If day 10 was selected for analysis, the second analysis day parameter was left empty because the analysis ended after the first analysis day. The fleet sizes were adjusted by changing the numbers found in the scenario window. After clicking the button marked "Run Requirements" ASM calculated a MRSP stocked to support the aircraft availability goals defined in the parameters. After clicking the "Run Requirements" button in figure 3 ASM calculated a MRSP stocked to support a fleet of 18 A-10 aircraft for 30 days. The same steps were used to calculate every MRSP.

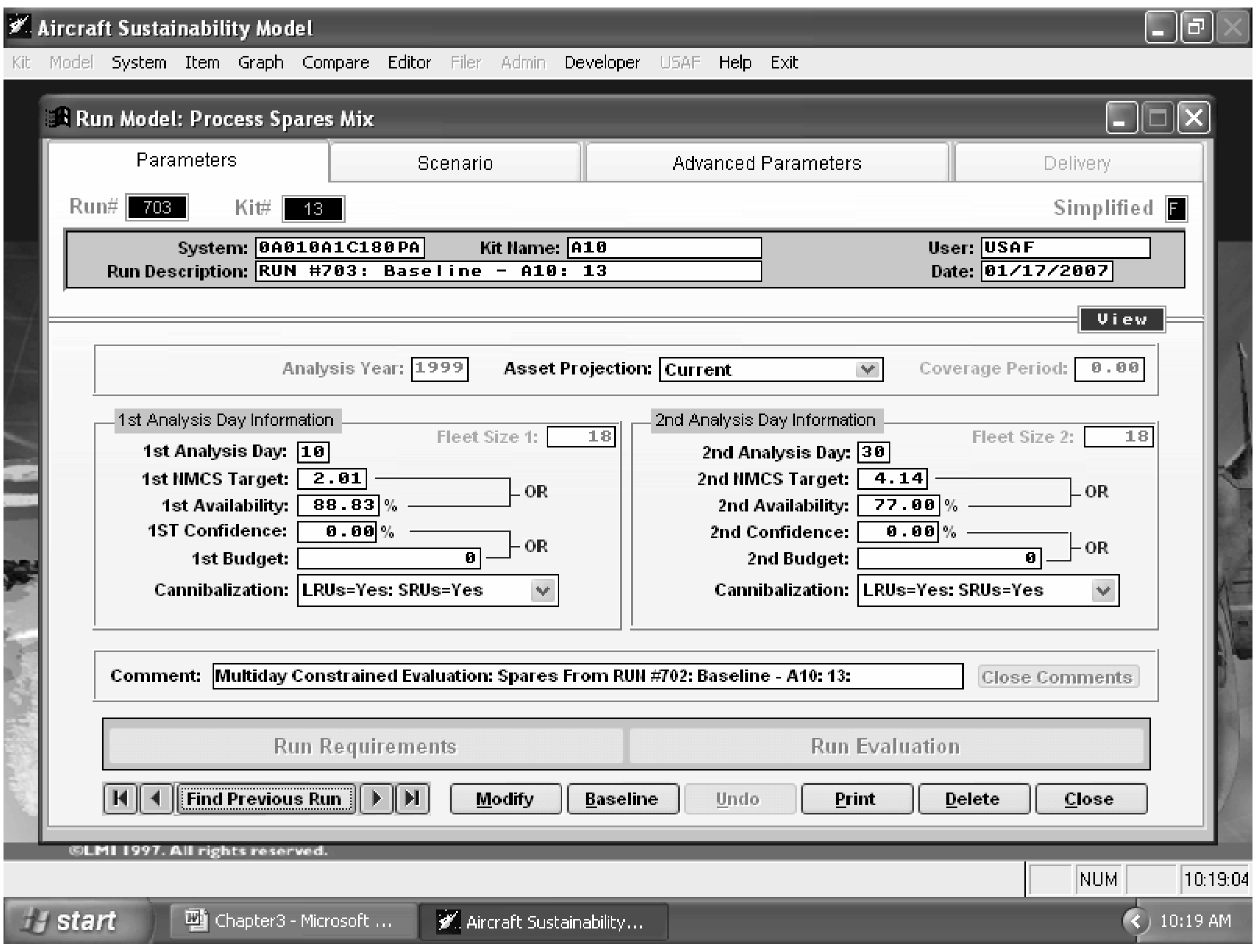


Figure 3. ASM Parameters

Evaluating a MRSP

Evaluating a MRSP was done in a manner similar to the building steps described above. Figure 3 illustrates building a MRSP to support a fleet of 18 A-10 aircraft for 30 days. After clicking the button marked "Modify" the run number in the box labeled "Run Description" advanced to Run #704 and all parameters were adjusted as was described above. After adjusting the parameters for a different fleet size and analysis day combination, the button marked "Run Evaluation" was clicked to evaluate the MRSPs performance under the new parameters.

After selecting "Run Evaluation" a new window titled "Evaluation Setup" appeared. Three additional evaluation questions were answered. First the spares mix to be evaluated was selected. This study used the "Selected Run Output" option to evaluate the current run, i.e. the specific MRSP that was on the screen when the "Run Evaluation" button was clicked. There were two "Use Spares Mix As" options, "Forced Buys" and "Initial Assets." For the experiments done in this thesis the "Forced Buys" option was selected so that part costs were included. The alternative was that spare part assets would be calculated as free. Permitting more spare buys would not be appropriate for the objective of evaluating a specific MRSP because this research was interested in how well the existing mix of spare parts performed, not what could be added to make the MRSP perform better. Finally, the "Multi-day (All Days Inclusive): Constrained by available aircraft" option was selected. This selection resulted in ASM evaluating the availability of aircraft generated by the specific MRSP on every consecutive day analyzed (Kline and others, 2006:11-10). Figure 4 is an example of the "Evaluation Setup" window and the options selected for every evaluation conducted for this thesis.

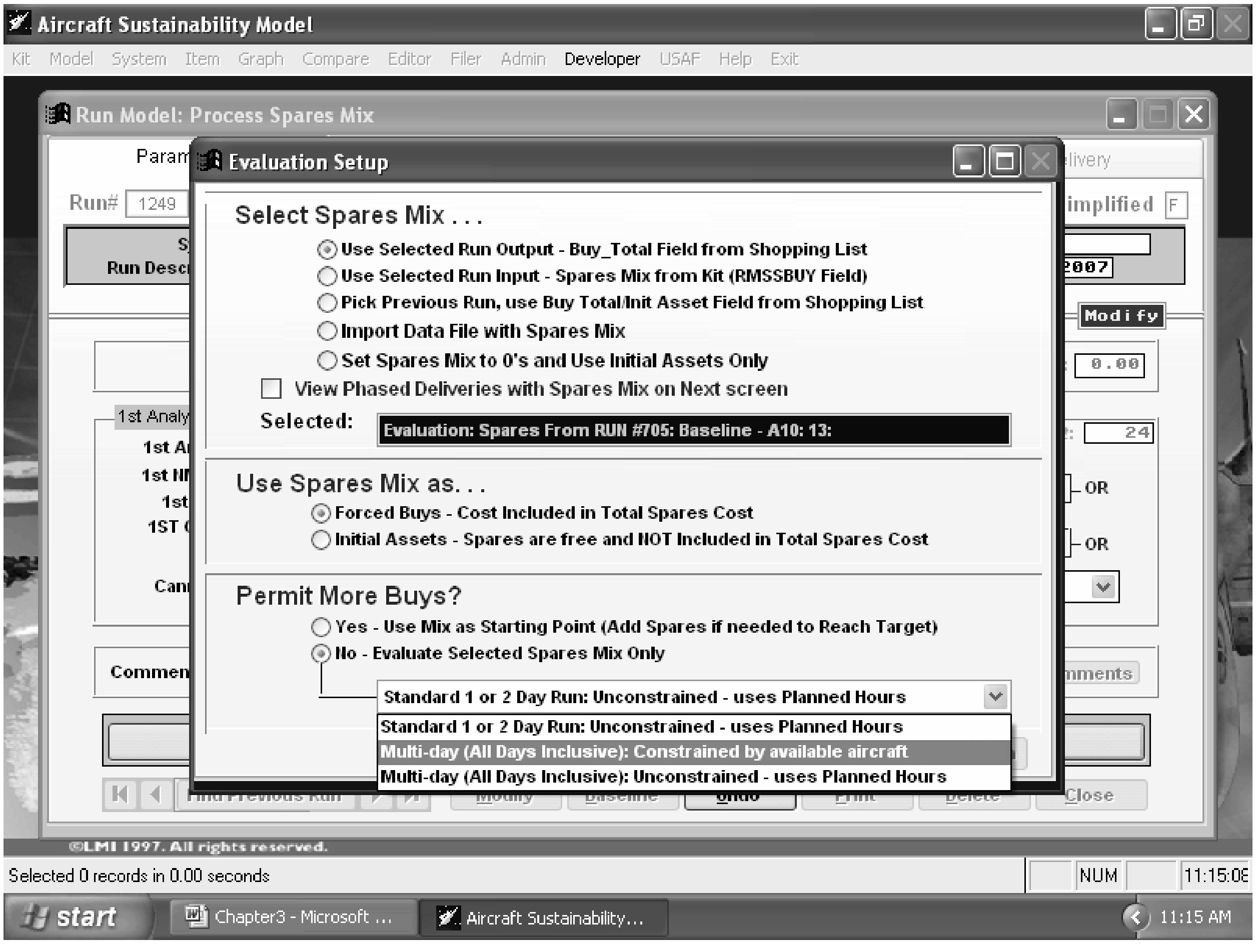


Figure 4. Evaluation Setup

ASM Output Data

Figure 5 displays an example of the ASM performance report which was generated after either building or evaluating a MRSP as described above. The performance report was immediately displayed but also could be viewed later by selecting the performance report option under the "system" pull down menu. As an example, Figure 5 is the performance report for a MRSP built to support a fleet of 20 A-10 aircraft for 25 days evaluated for supporting a fleet of 24 aircraft for 25 days. The total buy cost and daily performance data were entered into the ASM data collection table shown in table 3. The total buy cost was always equal between a MRSP built using the "Run Requirements" function and its multiple evaluations where the fleet size and time variables were changed because it was the same MRSP.

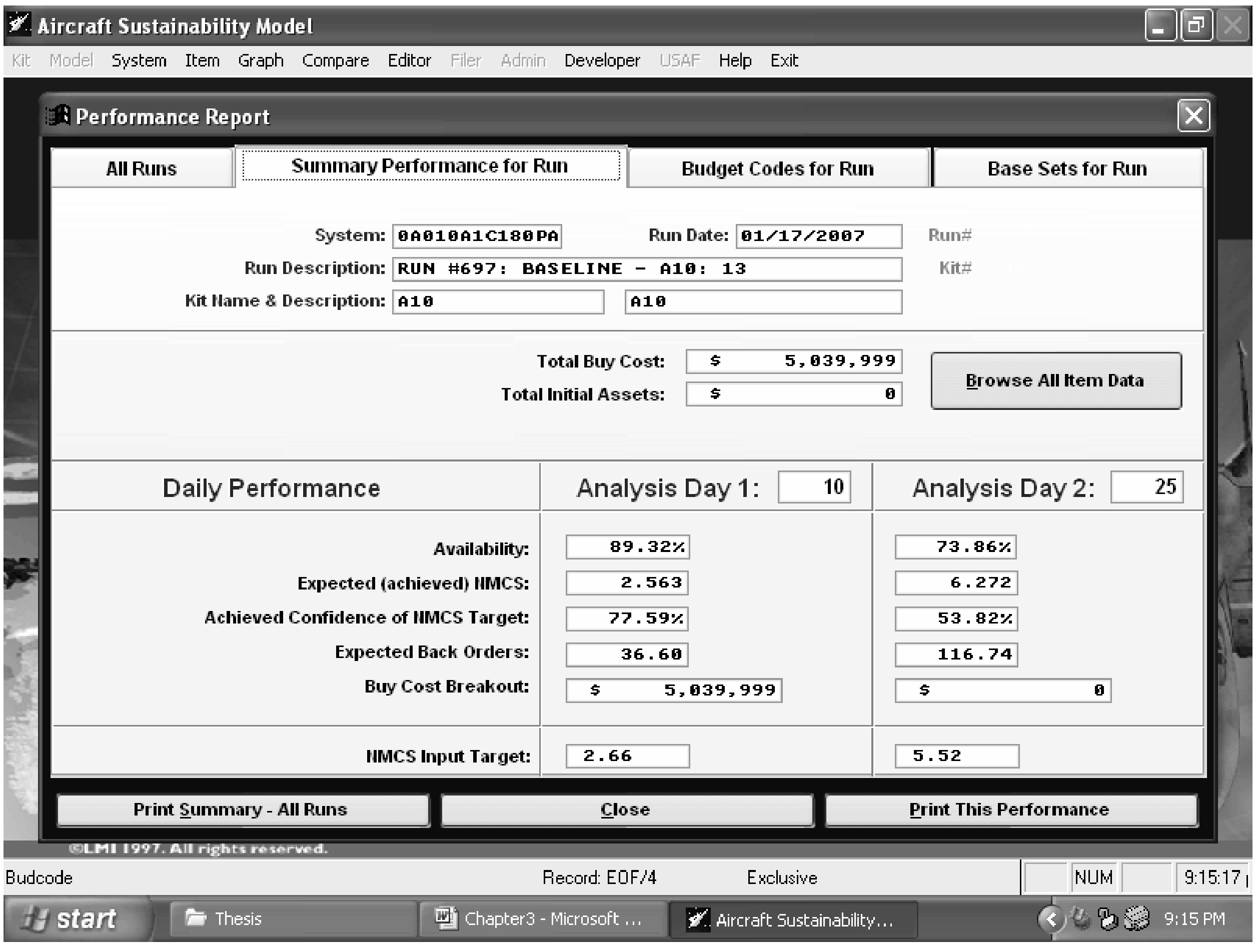


Figure 5. Performance Report

Table 3. ASM Data Collection Table for a Squadron of 20 A-10 Aircraft Calculated for 25 Days of Support

Kit	A-10 25 Day 20 aircraft				
Cost	$5,039,999.00				
		6 ship	12 ship	18 Ship	24 ship
Day 30	Availability %	72.8%	76.62%	72.94%	65.61%
Day 30	NMCS	1.631	2.805	4.871	8.252
Day 30	NMCS Confidence	63.02%	73.08%	53.44%	20.56%
Day 30	EBO	15.3	42.82	88.91	154.29
Day 25	Availability %	75.26%	79.55%	78.52%	73.86%
Day 25	NMCS	1.484	2.454	3.866	6.272
Day 25	NMCS Confidence	71.31%	84.24%	78.51%	53.82%
Day 25	EBO	12.62	33.76	67.62	116.74
Day 20	Availability %	77.53%	82.12%	82.84%	80.68%
Day 20	NMCS	1.348	2.145	3.088	4.637
Day 20	NMCS Confidence	79.15%	91.56%	92.75%	83.45%
Day 20	EBO	10.14	25.97	49.8	84.09
Day 15	Availability %	79.5%	84.66%	86.04%	85.77%
Day 15	NMCS	1.23	1.84	2.513	3.414
Day 15	NMCS Confidence	86.09%	95.95%	98.15%	96.63%
Day 15	EBO	7.85	19.29	35.29	57.46
Day 10	Availability %	81.16%	87.23%	88.65%	89.32%
Day 10	NMCS	1.13	1.532	2.042	2.563
Day 10	NMCS Confidence	58.58%	66.48%	81.23%	77.59%
Day 10	EBO	5.72	13.48	23.57	36.6

Interpreting Data

It may initially seem counter intuitive that, in table 3, as the fleet size decreases the percent of aircraft available will at first increase, but then decrease as fleet sizes become either six or 12 aircraft. However, if each aircraft is looked at as a package of spare parts which can be cannibalized, it becomes more apparent why the percent of aircraft available decreases for the smaller fleets. When one aircraft breaks in a large fleet and the parts necessary to fix it are backordered, the percentage of available aircraft is higher than if one aircraft broke in a small fleet. By cannibalizing parts, a large fleet can maintain a higher percentage of available aircraft than a small fleet can.

After filling in the empty ASM data collection table with data found in the ASM Performance Report for each of the 30 MRSPs per weapon-system, it was possible to compare MRSP cost, aircraft availability, and EBOs between MRSPs. A MRSP is expected to support a fleet of aircraft so long as the aircraft availability goal is met. The MRSP in table 3 was calculated to support a squadron of 20 A-10 aircraft for 25 days. The A-10 aircraft availability goal for the first ten days of war is 88.83%. The day 10 expected aircraft availability shows that the expected value was within 1% of the goal for fleets of 18 and 24 aircraft, and fell short of the goal for fleets of six and 12 aircraft. The A-10 aircraft availability goal for days 11-30 is 77%. Table 3 shows that expected aircraft availability remained within 1% of this goal through day 20 for a fleet of six aircraft, day 30 for a fleet of 12 aircraft, day 25 for a fleet of 18 aircraft, and day 20 for a fleet of 24 aircraft.

An Excel spreadsheet, as illustrated in table 4, was used to compare the number of days each MRSP is expected to support the four aircraft fleet sizes of interest. Table 4 illustrates how the information from table 3 was transferred for comparison purposes. An * next to the number of days means that the aircraft availability goal up to day ten is not met, but the goal for days beyond day 10 is met. The first two investigative questions were answered by comparing MRSP cost and the number of days individual MRSPs are expected to support various aircraft fleet sizes. When completely filled in, table 4 contained the cost data and days of support data. The table was sorted by cost to make it easy to find the least expensive MRSP capable of supporting the greatest number of aircraft fleet sizes. It was hoped that at least one MRSP for each weapon-system would be robust enough to support each of the four aircraft fleet sizes for at least 20 days.

Table 4 Comparison of Cost and Supportability

A-10 MRSP built to support:	Cost	Number of days MRSP Can Support X Aircraft				
		X =	6	12	18	24
30 days, 6 aircraft						
25 days, 6 aircraft						
20 days, 6 aircraft						
15 days, 6 aircraft						
10 days, 6 aircraft						
30 days, 12 aircraft						
25 days, 12 aircraft						
20 days, 12 aircraft						
15 days, 12 aircraft						
10 days, 12 aircraft						
30 days, 15 aircraft						
25 days, 15 aircraft						
20 days, 15 aircraft						
15 days, 15 aircraft						
10 days, 15 aircraft						
30 days, 18 aircraft						
25 days, 18 aircraft						
20 days, 18 aircraft						
15 days, 18 aircraft						
10 days, 18 aircraft						
30 days, 20 aircraft						
25 days, 20 aircraft	$5,039,999.00		20*	30	25	20
20 days, 20 aircraft						
15 days, 20 aircraft						
10 days, 20 aircraft						
30 days, 24 aircraft						
25 days, 24 aircraft						
20 days, 24 aircraft						
15 days, 24 aircraft						
10 days, 24 aircraft						

* MRSP fails to meet aircraft availability goals prior to day 10

Expected Backorder data was required to answer the third investigative question. Expected Backorder data for the least expensive MRSP per weapon-system, and status quo 30 day MRSPs for each fleet size of each weapon system were gathered from the applicable data collection tables. Table 3 above is an example of a data collection table. The EBO data from the least expensive MRSP was compared with each status quo 30 day MRSP using an Excel spreadsheet to construct four line graphs per weapon system. The closer the lines were to each other, the closer the number of EBOs over time between the least expensive and status quo MRSPs.

Summary

This chapter described the methodology used to conduct the research. It began by explaining the research objective and listing investigative questions. Next the Requirements Execution Availability Logistics Module and Aircraft Sustainability Model were defined. It concluded by explaining the data and necessary assumptions and then discussing the research design. Data generated by ASM was written in data collection tables as illustrated by table 3. By looking at the data collection tables it was possible to determine the number of days each MRSP could support fleets of six, 12, 18, and 24 aircraft. The cost in dollars and number of days the MRSP was expected to support the four fleet sizes was aggregated by weapon system in the comparison of cost and supportability table illustrated by table 4. The next chapter presents the results of the research, derived from the comparison of cost and supportability tables, as well as EBO data collected in MRSP specific data collection tables.

IV. Results

Chapter Overview

This chapter presents the results of data collection and analysis. It is organized by first presenting three comparison of cost and supportability tables; one for each weapon-system's MRSPs. The next section interprets the results and applies them to answering the investigative questions for each of the three weapon-systems of interest.

Analysis

The information from the ASM data collection tables described in chapter III was studied to determine at what number of days a MRSP ceased to be able to support a fleet of aircraft, given that type of aircraft's availability goals and the number of expected backorders. The weapon-system specific percentage goals were shown in table 2 above.

Tables 5, 6, and 7 show how well the 30 MRSPs from each weapon-system support squadrons of 6, 12, 18, and 24 aircraft. The tables list the maximum number of days for which a MRSP can support a specific number of aircraft. If on any given evaluation day and fleet size combination the aircraft availability percentage was at or below 1% less than the goal, then the MRSP was deemed not able to support the specific aircraft fleet beyond the previous evaluation day.

In some instances a MRSP met the aircraft availability percentage goal for a certain number of days beyond day ten, but that same MRSP fell below the aircraft availability percentage goal up to day ten. Such instances are annotated by an * next to the number of days for which the MRSP can support a certain number of Aircraft. For specific percentages for each day of evaluation, the reader may reference the ASM data collection tables in the appendix.

When calculating requirements for MRSPs built to support a lesser number of days, ASM tended to build the same MRSP as at the previous level. This is because the higher aircraft availability requirement during the first ten days of war required so many additional parts that the lower availability goals after day 10 did not require additional parts (Niklas, 2007). For example, ASM calculated the exact same MRSP to support 15 A-10 aircraft for 20 days as it did to support the same type and number of aircraft for 15 days and 10 days. The reader may note that such duplicate MRSPs have the same cost and support the same number of aircraft for the same number of days.

Interpreting Results

The three research questions are answered specifically with the data in the ASM data collection tables discussed in chapter III and found in the appendix. The data is more easily studied when transferred to the comparison of cost and supportability tables as illustrated above. The research questions are reprinted below.

1. How many days of support ca MRSPs built for 10, 15, 20, 25, and 30 days really provide based on predicted aircraft availability ?
2. How do costs in dollars compare between MRSPs built for 10, 15, 20, 25, and 30 days?
3. How well does the least expensive MRSP that met aircraft availability goals for at least 20 days, across as many fleet sizes as possible, perform based on EBOs?

A-10 Aircraft

Table 5 is the A-10 data sorted by cost, with the least expensive MRSP at the top. An interesting phenomenon is how every MRSP except the ones built specifically to support a fleet size of six aircraft fell short of the aircraft availability goal for the first ten days of war. The MRSPs built to support a fleet size of six aircraft are also the most expensive yet provide the worst support for larger fleet sizes. Many of the other MRSPs are robust enough to support fleet sizes of 12, 18, and 24 aircraft for at least 20 days.

Table 5. Comparison of Cost and Supportability for 30 A-10 Aircraft MRSPs by cost

A-10 MRSP built to support:	Cost	Number of days MRSP Can Support X Aircraft				
		X =	6	12	18	24
10 days, 24 aircraft	$4,762,055.00		15*	30*	25	20
15 days, 24 aircraft	$4,785,147.00		15*	25*	25	20
20 days, 24 aircraft	$4,801,543.00		15*	25*	25	20
25 days, 24 aircraft	$4,985,522.00		15*	30*	25	25
20 days, 20 aircraft	$5,013,391.00		20*	30	25	25
25 days, 20 aircraft	$5,039,999.00		20*	30	25	20
25 days, 15 aircraft	$5,040,876.00		25*	25	20	20
15 days, 20 aircraft	$5,062,535.00		20*	30	25	20
10 days, 20 aircraft	$5,062,535.00		20*	30	25	20
25 days, 18 aircraft	$5,098,401.00		25*	30	25	20
15 days, 18 aircraft	$5,114,680.00		25*	25	20	20
10 days, 18 aircraft	$5,114,680.00		25*	25	20	20
20 days, 15 aircraft	$5,117,808.00		25*	25	20	15
15 days, 15 aircraft	$5,117,808.00		25*	25	20	15
10 days, 15 aircraft	$5,117,808.00		25*	25	20	15
20 days, 18 aircraft	$5,137,413.00		25*	25	20	20
20 days, 12 aircraft	$5,271,480.00		30*	25	20	15
15 days, 12 aircraft	$5,271,480.00		30*	25	20	15
10 days, 12 aircraft	$5,271,480.00		30*	25	20	15
25 days, 12 aircraft	$5,272,257.00		30*	25	20	15
30 days, 24 aircraft	$5,304,050.00		15*	30*	30	30
30 days, 20 aircraft	$5,317,344.00		20*	30	30	20
30 days, 15 aircraft	$5,336,325.00		30*	30	25	20
30 days, 18 aircraft	$5,361,371.00		25*	30	30	20
30 days, 12 aircraft	$5,413,421.00		30*	30	25	20
20 days, 6 aircraft	$5,512,946.00		20	15	15*	<10
15 days, 6 aircraft	$5,512,946.00		20	15	15*	<10
10 days, 6 aircraft	$5,512,946.00		20	15	15*	<10
25 days, 6 aircraft	$5,538,216.00		25	20	15*	<10
30 days, 6 aircraft	$5,785,675.00		30	25	20	15*

* MRSP fails to meet aircraft availability goals prior to day 10

F-16C Aircraft

Table 6 is the F-16C data sorted by cost, with the least expensive MRSP at the top. In most cases the MRSPs not specifically built to support six aircraft are not expected to support squadrons of six aircraft for even 10 days; five MRSPs can support six aircraft for 15 days but they fall short of the aircraft availability goal the first ten days of war. The MRSPs built to support six aircraft are robust enough to support all other fleet sizes at least through day 15, but they are also the most expensive (over one million dollars more expensive) and therefore create a much larger logistics footprint. The rest of the MRSPs are within a few hundred thousand dollars of each other. All are robust enough to support fleet sizes of 18 or 24 aircraft for at least 20 days. All but seven fall short of the aircraft availability goal during the first ten days of war when supporting fleets of 12 aircraft. The seven that did not fall short of the first ten day availability goal are expected to be able to support the squadron for at least 25 days.

Table 6. Comparison of Cost and Supportability for 30 F-16C Aircraft MRSPs by cost

F-16 MRSP built to support:	Cost	Number of days MRSP Can Support X Aircraft				
		X =	6	12	18	24
10 days, 15 aircraft	$4,068,744.00		<10	20*	20	15
15 days, 15 aircraft	$4,076,302.00		<10	20*	20	20
10 days, 18 aircraft	$4,076,302.00		<10	20*	20	20
10 days, 20 aircraft	$4,085,688.00		<10	25*	20	20
20 days, 15 aircraft	$4,232,778.00		<10	25*	25	20
15 days, 18 aircraft	$4,232,778.00		<10	25*	25	20
10 days, 24 aircraft	$4,233,694.00		<10	25*	25	20
15 days, 20 aircraft	$4,242,164.00		<10	25*	25	25
25 days, 15 aircraft	$4,281,950.00		<10	25*	30	25
20 days, 18 aircraft	$4,282,866.00		<10	25*	30	25
10 days, 12 aircraft	$4,304,802.00		15*	25	25	20
15 days, 12 aircraft	$4,328,256.00		15*	25	25	20
20 days, 12 aircraft	$4,331,003.00		15*	25	25	20
30 days, 15 aircraft	$4,372,417.00		<10	25*	30	25
20 days, 20 aircraft	$4,372,417.00		<10	25*	30	25
15 days, 24 aircraft	$4,372,417.00		<10	25*	30	25
25 days, 12 aircraft	$4,375,542.00		15*	25	25	20
30 days, 12 aircraft	$4,400,952.00		15*	30	30	25
25 days, 18 aircraft	$4,499,498.00		<10	25*	30	30
25 days, 20 aircraft	$4,556,781.00		<10	30*	30	30
30 days, 18 aircraft	$4,557,697.00		<10	30*	30	30
20 days, 24 aircraft	$4,557,697.00		<10	30*	30	30
30 days, 20 aircraft	$4,629,070.00		<10	30*	30	30
25 days, 24 aircraft	$4,773,796.00		<10	30	30	30
30 days, 24 aircraft	$4,846,924.00		<10	30	30	30
25 days, 6 aircraft	$6,196,277.00		30	25	20	15
20 days, 6 aircraft	$6,196,277.00		30	25	20	15
15 days, 6 aircraft	$6,196,277.00		30	25	20	15
10 days, 6 aircraft	$6,196,277.00		30	25	20	15
30 days, 6 aircraft	$6,203,831.00		30	25	20	15

* MRSP fails to meet aircraft availability goals prior to day 10

F-15E Aircraft

Table 7 is the F-15E data sorted by cost, with the least expensive MRSP at the top. The F-15E MRSPs are roughly twenty million dollars more expensive than either the A-10 or the F-16C MRSPs. At nearly six million dollars, the difference between the cost of the most expensive and least expensive MRSPs is more significant than in either of the other two weapon-systems. Just as with the other weapon-systems, every MRSP had problems supporting fleets of six aircraft except MRSPs specifically calculated to support six aircraft. The MRSPs built to support six aircraft are expected to be able to support the larger sized fleets for at least 20 days; but they are over four million dollars more expensive than the other MRSPs, thereby creating an even larger logistics footprint than was seen with the most expensive F-16C MRSP. The cost of the other F-15E MRSPs fell within approximately 1.7 million dollars of each other. All are robust enough to support fleet sizes of 18 or 24 aircraft for at least 25 days. Several are expected to be able to support a fleet of 12 aircraft for 30 days with no problems, where as the others fall short of the aircraft availability goal in the first ten days of war but after that provide support for at least 20 days.

Table 7. Comparison of Cost and Supportability for 30 F-15E Aircraft MRSPs by cost

F-15E MRSP built to support:	Cost	Number of days MRSP Can Support X Aircraft				
		X =	6	12	18	24
10 days, 24 aircraft	$23,224,362.00		<10	20*	25	30
10 days, 20 aircraft	$23,242,781.00		<10	20*	30	30
10 days, 18 aircraft	$23,300,355.00		<10	25*	30	30
15 days, 18 aircraft	$23,311,711.00		<10	25*	30	30
15 days, 20 aircraft	$23,324,754.00		<10	20*	30	30
15 days, 24 aircraft	$23,347,087.00		<10	20*	25	30
20 days, 18 aircraft	$23,431,281.00		<10	25*	30	30
10 days, 15 aircraft	$23,680,884.00		<10	25	30	30
20 days, 24 aircraft	$23,800,359.00		<10	20*	25	30
20 days, 20 aircraft	$23,803,971.00		<10	20*	25	30
25 days, 20 aircraft	$23,814,710.00		<10	20*	25	30
25 days, 18 aircraft	$23,849,166.00		<10	25*	30	30
15 days, 15 aircraft	$23,900,742.00		15*	25	30	30
20 days, 15 aircraft	$23,948,460.00		15*	30	30	30
15 days, 12 aircraft	$23,950,362.00		15*	30	30	30
30 days, 18 aircraft	$23,951,191.00		<10	25*	30	30
10 days, 12 aircraft	$23,954,713.00		15*	30	30	30
20 days, 12 aircraft	$23,979,780.00		15*	30	30	30
25 days, 12 aircraft	$23,985,441.00		15*	30	30	30
25 days, 15 aircraft	$24,026,889.00		15*	30	30	30
30 days, 12 aircraft	$24,243,036.00		15*	30	30	30
30 days, 20 aircraft	$24,391,726.00		<10	20*	30	30
30 days, 15 aircraft	$24,473,727.00		15*	30*	30	30
25 days, 24 aircraft	$24,539,425.00		<10	20*	25*	30
30 days, 24 aircraft	$24,971,138.00		<10	20*	30	30
30 days, 6 aircraft	$29,152,244.00		30	30	30	30
25 days, 6 aircraft	$29,152,244.00		30	30	30	20
20 days, 6 aircraft	$29,152,244.00		30	30	30	20
15 days, 6 aircraft	$29,152,244.00		30	30	30	20
10 days, 6 aircraft	$29,152,244.00		30	30	30	20

* MRSP fails to meet aircraft availability goals prior to day 10

Expected Back Orders

Regardless of the fleet size or MRSP used for spare parts support, some part will inevitably break that is not stocked in the MRSP. Such broken parts are expected backorders (EBOs). The EBO status quo for each type of aircraft and size of fleet can be determined by looking at a 30 day MRSP built to support a particular aircraft and fleet size. This is because a custom built 30 day MRSP is what would deploy today. Table 8 shows the EBOs for 30 day MRSPs built to support specific fleet sizes. Note that as fleet sizes become larger, so do the amount of EBOs. After day 20 every fleet size of every weapon-system had a higher percentage increase in EBOs.

When evaluating the performance of other MRSPs, besides aircraft availability it is also important to look at how the EBOs compare with the status quo EBOs. Every EBO represents a part that will move through the re-supply pipeline. The inventory and transportation cost benefits of a leaner MRSP could be outweighed by the transportation costs of filling excessive amounts of EBOs.

Table 8. EBO for 30 day MRSP built to support specific fleet size

A-10 Fleet size	**6**	**12**	**18**	**24**
EBO day 10	0.89	7.73	20.71	41.77
EBO day 15	1.52	12.23	31.32	60.53
EBO day 20	2.35	17.85	44.06	82.19
EBO day 25	3.42	24.78	59.3	107.47
EBO day 30	4.79	33.16	77.35	136.95
F-16C Fleet size	**6**	**12**	**18**	**24**
EBO day 10	2.11	19.23	34.36	43.85
EBO day 15	2.89	24.51	43.48	55.6
EBO day 20	3.79	30.04	52.81	67.51
EBO day 25	4.92	36.28	63.18	80.67
EBO day 30	6.34	43.47	75.22	96.2
F-15E Fleet size	**6**	**12**	**18**	**24**
EBO day 10	2.42	23.92	42.25	53.42
EBO day 15	3.16	31.39	54.87	69.3
EBO day 20	4.28	40.38	69.62	87.72
EBO day 25	5.73	50.7	86.51	108.71
EBO day 30	7.63	62.76	106.49	134.08

Performance of the Least Expensive MRSP that Meets Aircraft Availability Goals

Looking across tables 5, 6, and 7 above, it is easy to see the least expensive MRSP for each weapon-system that best supports multiple fleet sizes based on aircraft availability. The MRSPs are ordered in the tables by cost, with the least expensive at the top. The first MRSP that is capable of supporting the three largest fleet sizes for at least 20 days is considered the least expensive MRSP. Due to the aircraft availability rate vs. cannibalization factor, the smaller fleet sizes are the most difficult to support for every weapon-system (Winchester, 2007). Without knowing how often a fleet of six aircraft is really alone at a deployed location without another fleet of at least six of the same type of aircraft, it is not possible to determine how practical a problem support of a fleet of six aircraft really is. One solution to the problem is to immediately send a FOS so that aircraft availability goals can be met.

A-10 Aircraft

The MRSP calculated to support 20 aircraft for 20 days was the least expensive MRSP supporting the A-10 aircraft that met aircraft availability goals for fleets of 12, 18, and 24 aircraft with no predicted problems the first ten days of war. Figure 6 graphically represents the number of days the MRSP is expected to support each fleet size.

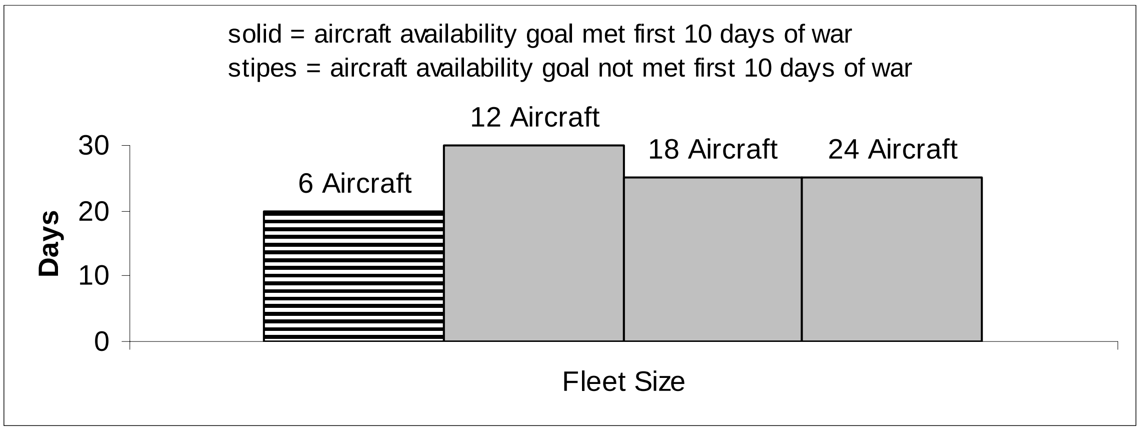
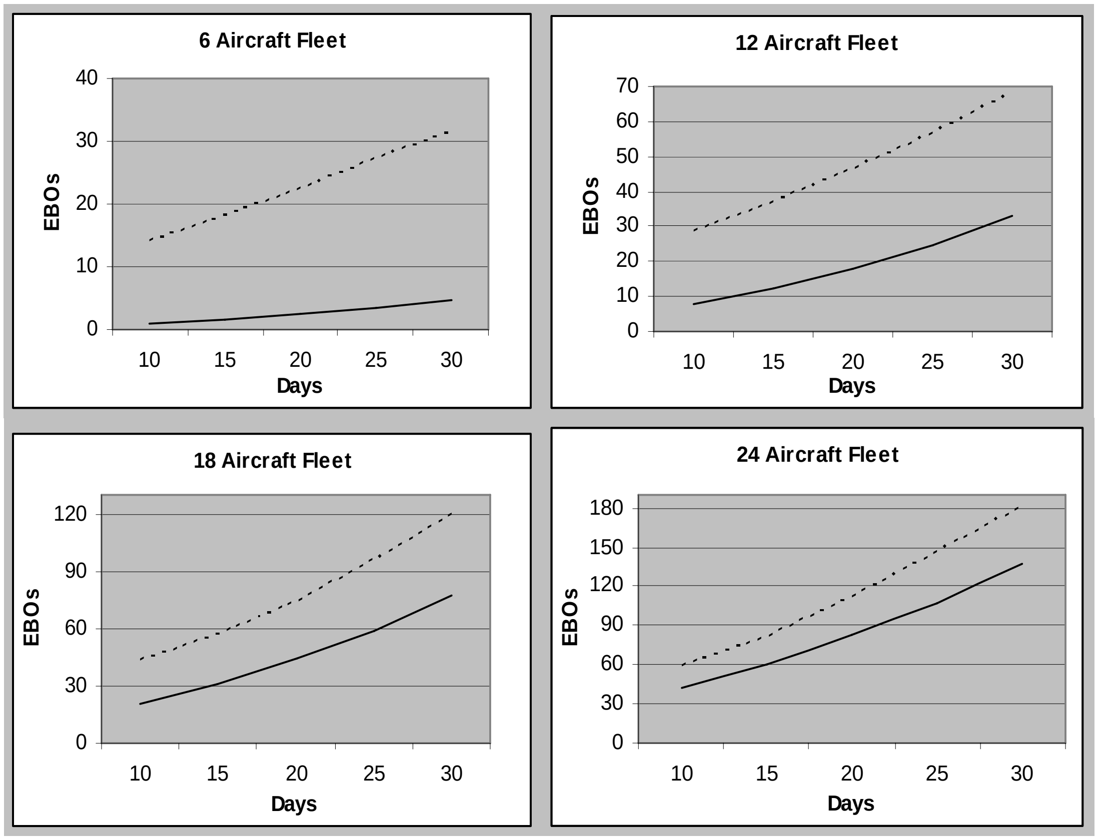


Figure 6. Performance of A-10 MRSP built to support 20 aircraft for 20 days based on aircraft availability

Figure 7, shows how EBOs compare between the 20 day 20 aircraft MRSP (labeled Least Cost MRSP) and the status quo 30 day MRSPs built to support a specific number of aircraft (labeled Status Quo MRSP). In all cases the numbers of EBOs are higher with the least cost MRSP. With the 18 and 24 aircraft fleet sizes, EBOs at day 20 for the least cost MRSP are not as high as at day 30 for the status quo MRSP. The six and 12 aircraft fleets quickly have more EBOs on any given day with the least cost MRSP than with the status quo MRSP at day 30. Although the number of EBOs is higher, it is still relatively low when compared with fleet sizes of 18 and 24 and therefore should not have a significantly higher transportation cost to fill the EBOs.



___ Status Quo MRSP
----- Least Cost MRSP

Figure 7. Least Cost MRSP vs. Status Quo MRSPs, A-10 Aircraft

F-16C Aircraft

The least expensive MRSP supporting the F-16C aircraft that meet aircraft availability goals for fleets of 12, 18, and 24 aircraft with no predicted problems the first ten days of war was calculated to support 12 aircraft for 10 days. Figure 8 graphically represents the number of days the MRSP is expected to support each fleet size. Although the MRSP was calculated for 10 days of support, analysis shows that it is expected to provide support for the three largest sizes of aircraft fleets for at least 20 days.

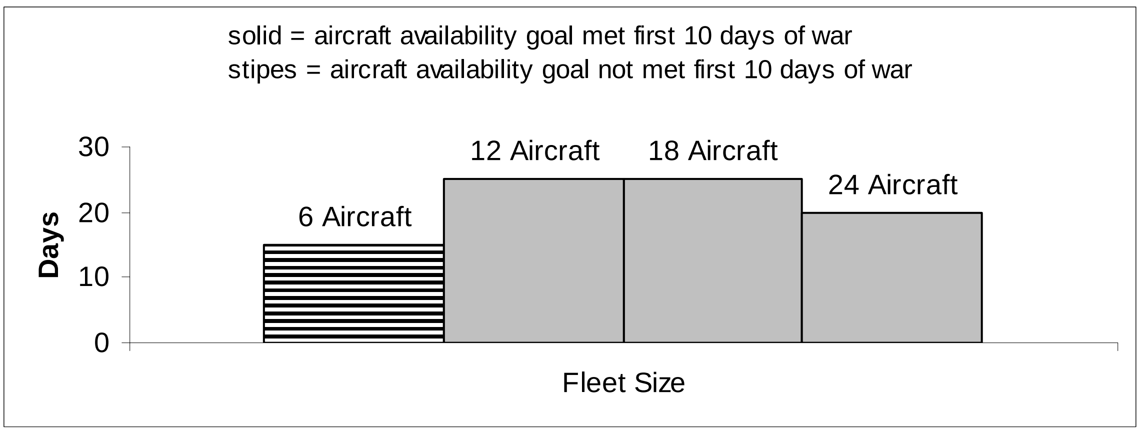
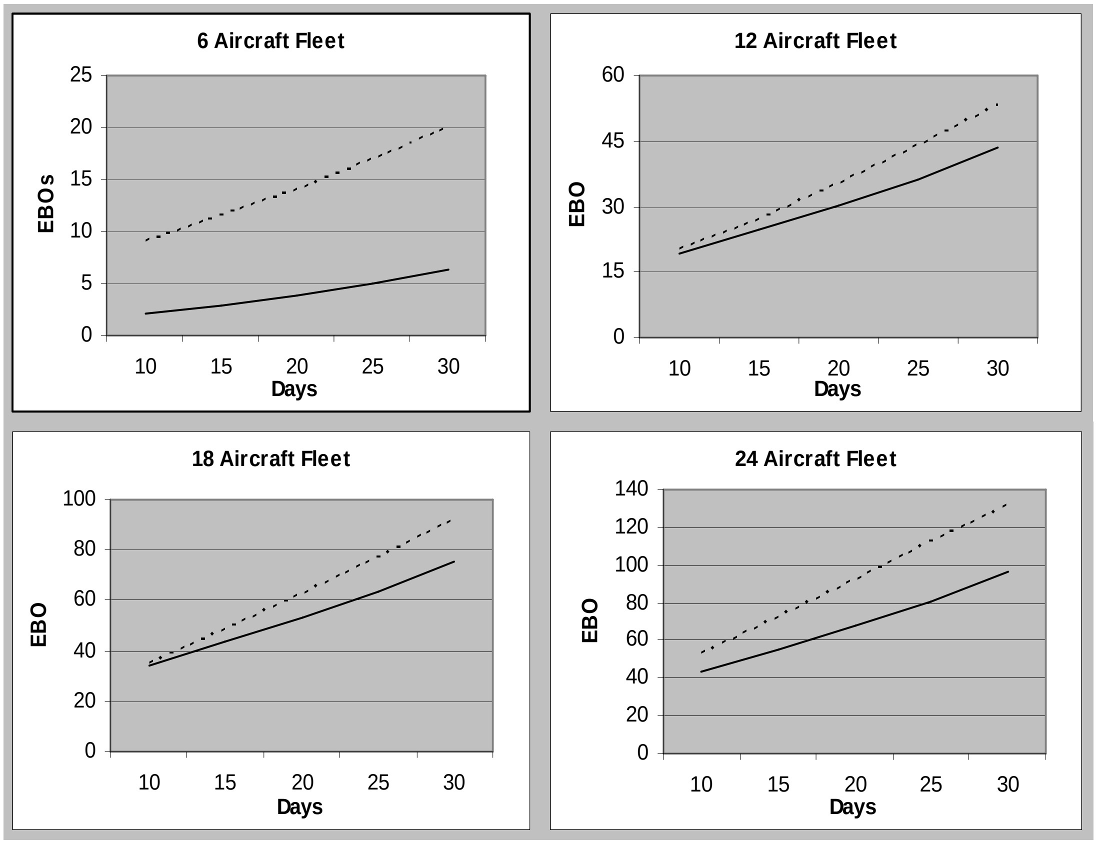


Figure 8. Performance of F-16C MRSP built to support 12 aircraft for 10 days based on aircraft availability

Figure 9 shows how EBOs compare between the 10 day 12 aircraft MRSP (labeled Least Cost MRSP) and the status quo 30 day MRSPs built to support a specific number of aircraft (labeled Status Quo MRSP). With the exception of support for a six aircraft fleet, the amount of EBOs in both MRSPs start out relatively equal with the difference between the two increasing as time progresses.



____ Status Quo MRSP

----- Least Cost MRSP

Figure 9. Least Cost MRSP vs. Status Quo MRSPs, F-16C Aircraft

F-15E Aircraft

The least expensive MRSP supporting the F-15E weapon-system that meet aircraft availability goals for fleets of 12, 18, and 24 aircraft with no predicted problems the first ten days of war was calculated to support 15 aircraft for 10 days. Figure 10 graphically represents the number of days the MRSP is expected to support each fleet size. Although the MRSP was calculated for 10 days of support, analysis shows that it is expected to provide support for the three largest sizes of aircraft fleets for at least 25 days.

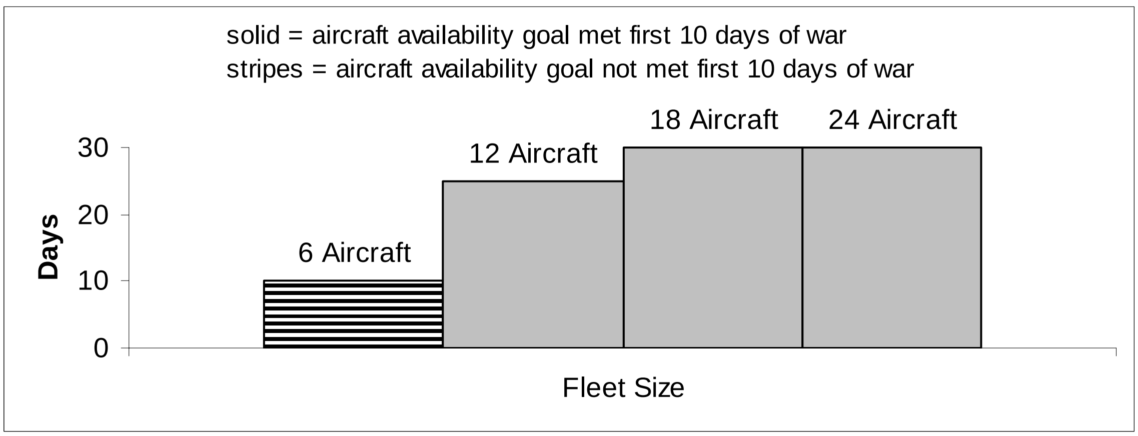
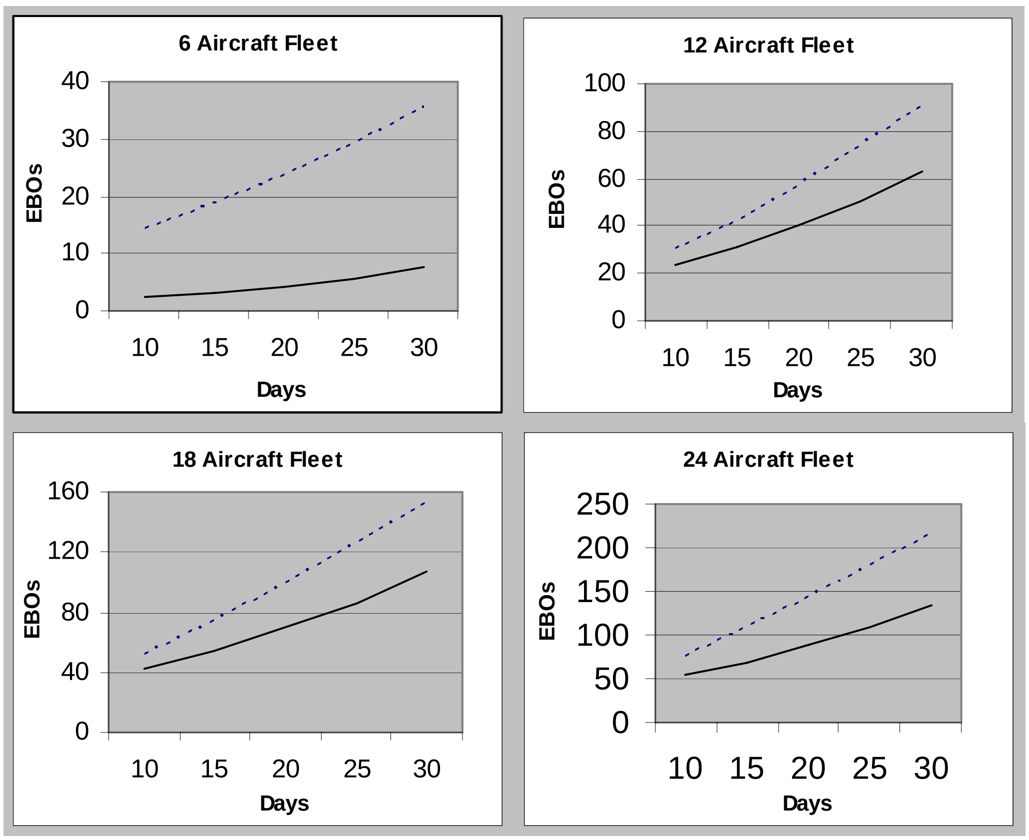


Figure 10. Performance of F-15E MRSP built to support 15 aircraft for 10 days based on aircraft availability.

Figure 11 shows how EBOs compare between the 10 day 15 aircraft MRSP (labeled Least Cost MRSP) and the status quo 30 day MRSPs built to support a specific numbers of aircraft (labeled Status Quo MRSP). Just as with the F-16C, except when supporting a six aircraft fleet, the amount of EBOs in both MRSPs start out relatively equal with the difference between the two increasing as time progresses. Unlike the other two weapon-systems, the number of EBOs resulting from the least cost MRSP escalates at a faster rate when compared to the status quo MRSPs. Quickly establishing re-supply is particularly important if using the lest cost MRSP to support any number of F-15E aircraft as cost in man hours to cannibalize parts and transportation cost to ship parts to fill EBOs will quickly escalate.



____ Status Quo MRSP
----- Least Cost MRSP

Figure 11. Least Cost MRSP vs. Status Quo MRSPs, F-15E Aircraft

Summary

To lessen the logistics footprint, obtain cost savings, and facilitate enterprise level management, transferability, and storage, it is necessary for a single MRSP to be able to support any size fleet of aircraft. This chapter presented the results from the data collection and analysis. It compared the results using three tables which showed cost and supportability for each weapon-system's MRSPs. Next it interpreted the results and answered the investigative questions. The MRSPs for each weapon-system were listed in a table in ascending order based on cost in dollars. Supporting a fleet of six aircraft of any weapon-system was particularly challenging; aircraft availability during the first ten days of war consistently fell below the goals for all MRSPs except for the more expensive ones built specifically to support fleets of six aircraft. For each weapon-system, one of the top 11 least expensive MRSPs was identified as able to support the three largest fleet sizes based on aircraft availability. A FOS would need to be immediately deployed for the identified MRSP to sufficiently support a fleet of six aircraft; it is unclear how often support for strictly six aircraft of any weapon-system is a practical consideration. The EBOs generated by the three identified least cost MRSPs were compared to EBOs generated by 30 day status quo MRSPs currently used. If using the identified least cost MRSPs it is imperative that a reliable re-supply pipeline be operational within 20 days otherwise EBOs escalate to a point which may counter balance any savings generated by using leaner, standardized MRSPs. The next chapter compares these results with the 20 day standard MRSP size suggested by Tew and Winchester. It also suggests areas for future research.

V. Conclusions and Recommendations

Chapter Overview

This thesis research was conducted with the goal of determining how many days (less than 30) and what number of aircraft a weapon-system specific MRSP should be built to support, presuming it needs to be robust enough to achieve aircraft availability goals in various sizes of aircraft fleets. In order to achieve the goal, the research was structured to answer three investigative questions.

1. How many days of support ca MRSPs built for 10, 15, 20, 25, and 30 days really provide based on predicted aircraft availability rates?
2. How do costs in dollars compare between MRSPs built for 10, 15, 20, 25, and 30 days.
3. How well does the least expensive MRSP that met aircraft availability goals for at least 20 days, across as many fleet sizes as possible, perform based on EBOs?

This chapter will begin by discussing the answers to these investigative questions and the conclusions that can be drawn from those answers. Next it will present recommendations for which MRSP best meet the objective of lean with the ability to support diverse numbers of aircraft. Finally the chapter will identify areas for future research in the subject.

Conclusions

This section looks at each of the investigative questions posed in the first chapter and draws a conclusion based on the analysis.

How many days of support ca MRSPs built for 10, 15, 20, 25, and 30 days really provide based on predicted aircraft availability rates?

In the previous chapter, tables 5, 6, and 7 compared the availability rates for each MRSP across specific weapon-system. In all cases it was impossible to support a fleet of six aircraft without falling below the aircraft availability goal during the first 10 days of war unless using a MRSP built to support six aircraft. However, MRSPs built to support six aircraft are the most expensive and do not necessarily support larger fleets as well as less expensive MRSPs. Several MRSPs for each weapon-system have the ability to support the three largest fleet sizes for at least 20 days without excessive amounts of EBOs relative to the number of EBOs expected to be generated by a status quo 30 day MRSP.

How do costs in dollars compare between MRSPs built for ten, fifteen, twenty, twenty-five and thirty days?

The following three graphs, figures 12, 13, and 14, compare the cost of MRSPs for each weapon-system. These graphs demonstrate that cost is relatively equal across most MRSPs. The largest differences are found with the MRSPs built to support six aircraft. Each graph represents one weapon-system. Each set of MRSPs built to support X number of aircraft for 10, 15, 20, 25, and 30 days are compared next to each other on the graph. For example, the first five data points in figure 12 represent the cost of the MRSPs built to support 6 A-10 aircraft for 10, 15, 20, 25, and 30 days. Data points six through ten represent the cost of the MRSPs built to support 12 A-10 aircraft for 10, 15, 20, 25, and 30 days. This pattern continues through the MRSPs built to support 15, 18, 20, and 24 aircraft.

For each series of MRSPs supporting the A-10 aircraft, the cost to build any MRSP for 30 days of support is at least $100,000 more expensive than the cost to build any MRSP for 25 or fewer days. The costs to build any MRSP to support 12, 15, 18, or 20 aircraft for 25 or fewer days are approximately equal. The cost of a MRSP built to support 6 aircraft for any number of days is higher than average while the cost of a MRSP built to support 24 aircraft for less than 25 days is below average.

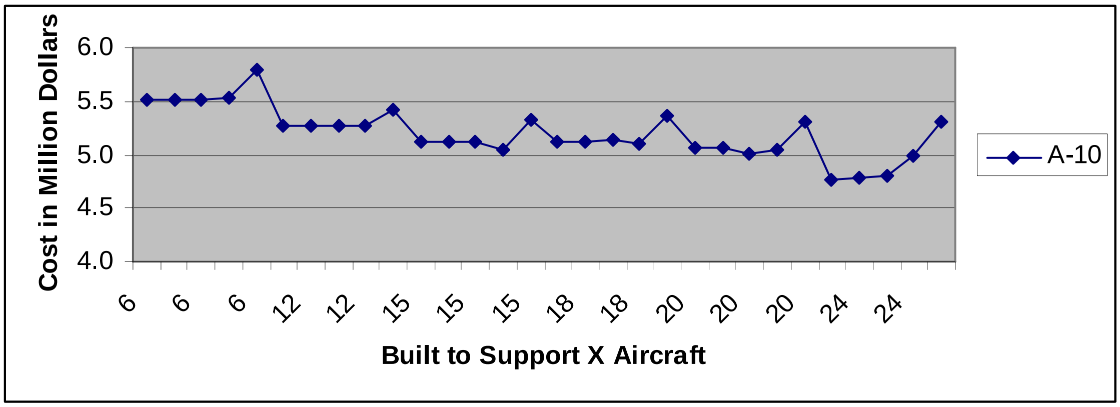


Figure 12. Cost Comparisons of A-10 MRSPs

The cost to build a MRSP to support six F-16C aircraft for any number of days is over one million dollars more expensive than the cost to build any of the other F-16C MRSPs analyzed in this research. The cost to build a MRSP expected to support 12, 15, and 18 aircraft for any number of days and 20, and 24 aircraft for 20 or fewer days, is approximately equal. It is more expensive to build MRSPs expected to support 20, and 24 aircraft for 25 or more days.

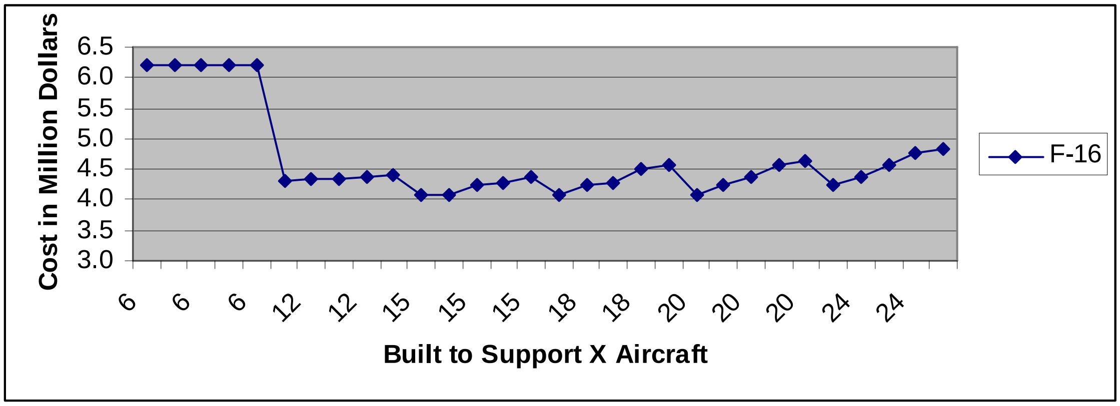


Figure 13. Cost Comparisons of F-16C MRSPs

The cost to build a MRSP to support six F-15E aircraft for any number of days is over four million dollars more expensive than the cost to build any of the other F-15E MRSPs analyzed in this research. The difference in cost between all other MRSPs for the F-15E is within one million dollars except for the MRSPs expected to support 24 aircraft for 25 days or more. These MRSPs are slightly more expensive.

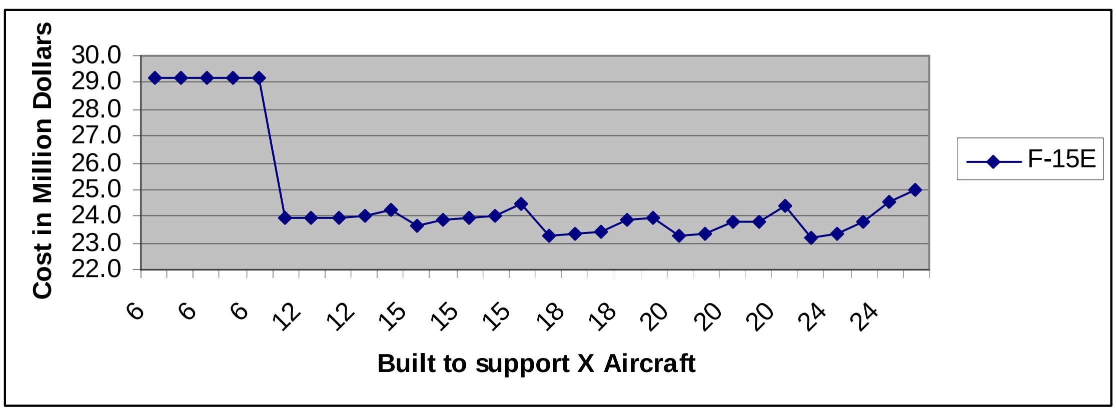


Figure 14. Cost Comparisons of F-15E MRSPs

How well does the least expensive MRSP that met aircraft availability goals for at least 20 days, across as many fleet sizes as possible, perform based on EBOs?

The analysis in the previous chapter showed the expected performance of the least expensive MRSP which meets aircraft availability goals across the three largest fleets of aircraft for each weapon-system. Although availability goals were met, EBOs were higher than would be expected if using a status quo 30 day MRSP. The least expensive MRSP that satisfies aircraft availability goals for multiple fleet sizes is not the best choice to reduce the overall logistics footprint.

Winchester's position is that a 20 day MRSP will provide the best support for any fighter aircraft (Winchester, 2007). This study analyzed six 20 day MRSPs for each of the three weapon-systems. The 20 day MRSPs supporting six aircraft will not be considered further because of their high cost. Table 9 shows the cost and expected number of days of support based on aircraft availability goals for the 20 day MRSPs built for each weapon-system studied. The highlighted MRSPs were expected to support any of the three largest fleets of aircraft for at least 20 days. Additionally, the three MRSPs highlighted in the lighter shade of gray generated the least EBOs.

Table 9. Comparison of Cost and Supportability for 20 day MRSPs

A-10 MRSP built to support:	Cost	Number of days MRSP Can Support X Aircraft				
		X =	**6**	**12**	**18**	**24**
20 days, 12 aircraft	$5,271,480.00		30*	25	20	15
20 days, 15 aircraft	$5,117,808.00		25*	25	20	15
20 days, 18 aircraft	$5,137,413.00		25*	25	20	20
20 days, 20 aircraft	$5,013,391.00		20*	30	25	20
20 days, 24 aircraft	$4,801,543.00		15*	25*	25	20
20 days, 6 aircraft	$5,512,946.00		20	15	15*	<10
F-16C MRSP built to support:	Cost	Number of days MRSP Can Support X Aircraft				
		X =	**6**	**12**	**18**	**24**
20 days, 12 aircraft	$4,331,003.00		15*	25	25	20
20 days, 15 aircraft	$4,232,778.00		<10	25*	25	20
20 days, 18 aircraft	$4,282,866.00		<10	25*	30	25
20 days, 20 aircraft	$4,372,417.00		<10	25*	30	25
20 days, 24 aircraft	$4,557,697.00		<10	30*	30	30
20 days, 6 aircraft**	$6,196,277.00		30	25	20	15
F-15E MRSP built to support:	Cost	Number of days MRSP Can Support X Aircraft				
		X =	**6**	**12**	**18**	**24**
20 days, 12 aircraft	$23,979,780.00		15*	30	30	30
20 days, 15 aircraft	$23,948,460.00		15*	30	30	30
20 days, 18 aircraft	$23,431,281.00		<10	25*	30	30
20 days, 20 aircraft	$23,803,971.00		<10	20*	25	30
20 days, 24 aircraft	$23,800,359.00		<10	20*	25	30
20 days, 6 aircraft**	$29,152,244.00		30	30	30	20

* MRSP fails to meet aircraft availability goals prior to day 10

Figures 15, 16, and 17 graphically illustrate how the number of EBOs compare between the 20 day MRSPs lightly highlighted in table 12, with the 30 day status quo MRSPs for each weapon-system. The 20 day MRSPs are referred to as 20 day MRSPs in the figures while the 30 day status quo MRSPs are referred to as Status Quo MRSPs. Day 20 is a key point in the graph because of the assumption that a re-supply pipeline can be established by then. For all three weapon-systems, the best performing 20 day MRSP outperformed the least expensive MRSP discussed in the previous chapter in terms of number of EBOs. In terms of aircraft availability goals, both sets of MRSPs performed relatively equally as they all support the three largest sized fleets of aircraft for a minimum of 20 days.

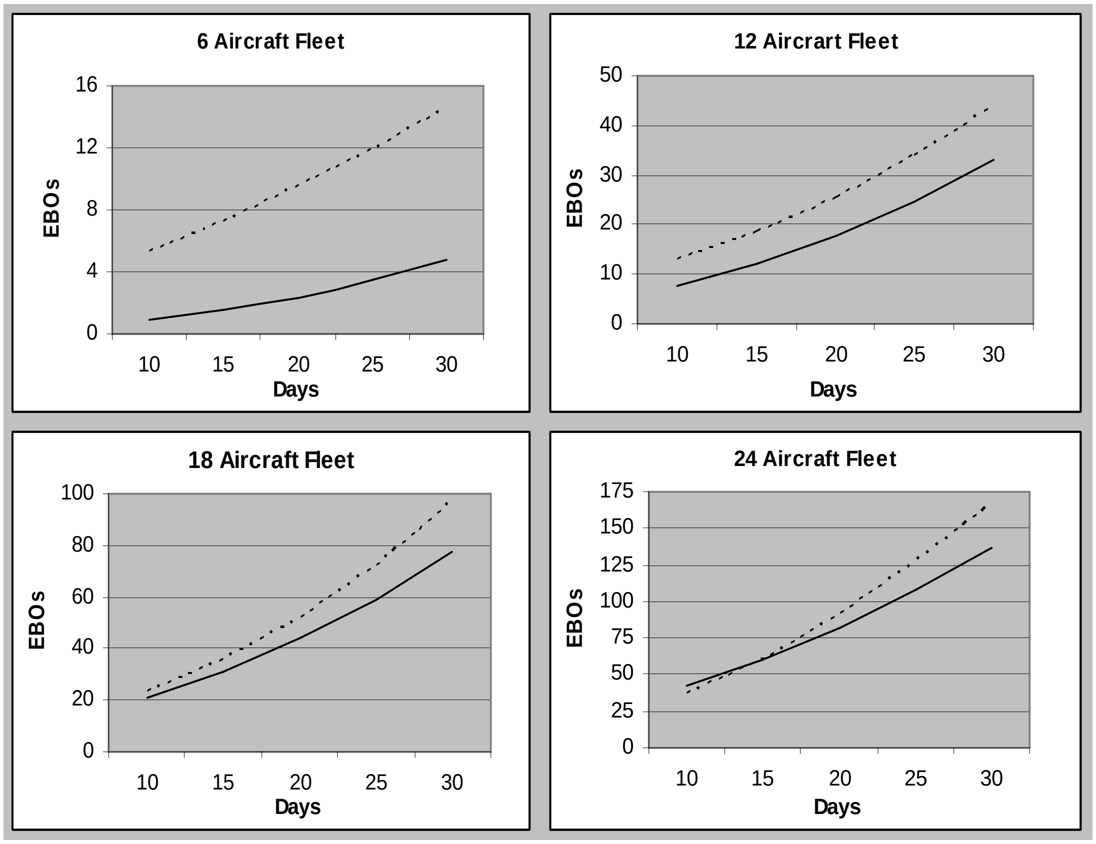


Figure 15. Comparison of Proposed 20 Day MRSP vs. 30 Day Status Quo MRSPs for A-10

The 20 day 18 aircraft MRSP best supported multiple fleet sizes of A-10 aircraft based on aircraft availability and EBOs. The 20 day 20 aircraft MRSP was identified in the previous chapter as being the least expensive MRSP able to support aircraft availability goals for the three largest aircraft fleet sizes. The two MRSPs are nearly identical in cost with only a 1.46% difference. EBOs are only slightly lower in the 20 day 18 aircraft MRSP. Note that when supporting a fleet of 24 aircraft, the 20 day 18 aircraft MRSP generates slightly fewer EBOs during the first 15 days of war than does the status quo 30 day MRSP. At day 20 there is little practical significance in the difference between the numbers of EBOs generated by the 20 day MRSP and the status quo MRSPs.

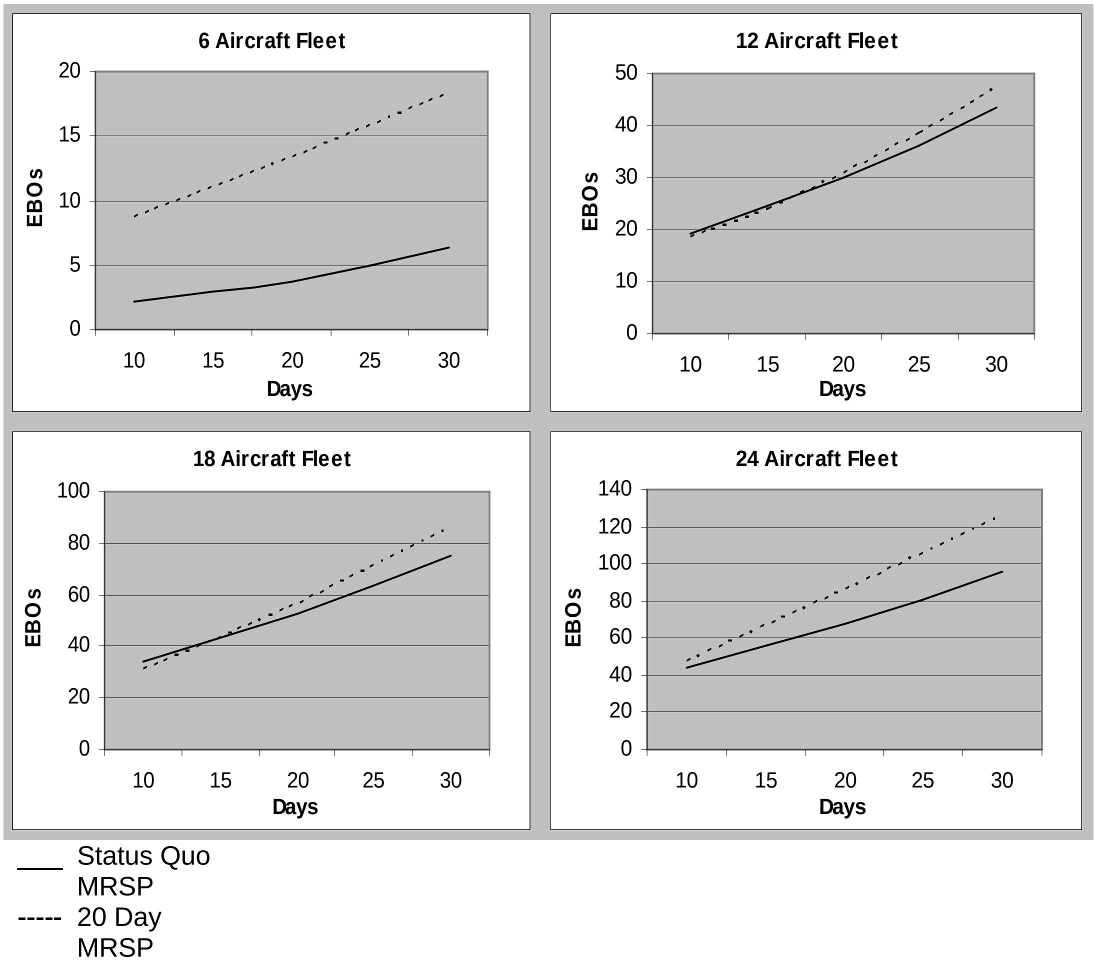
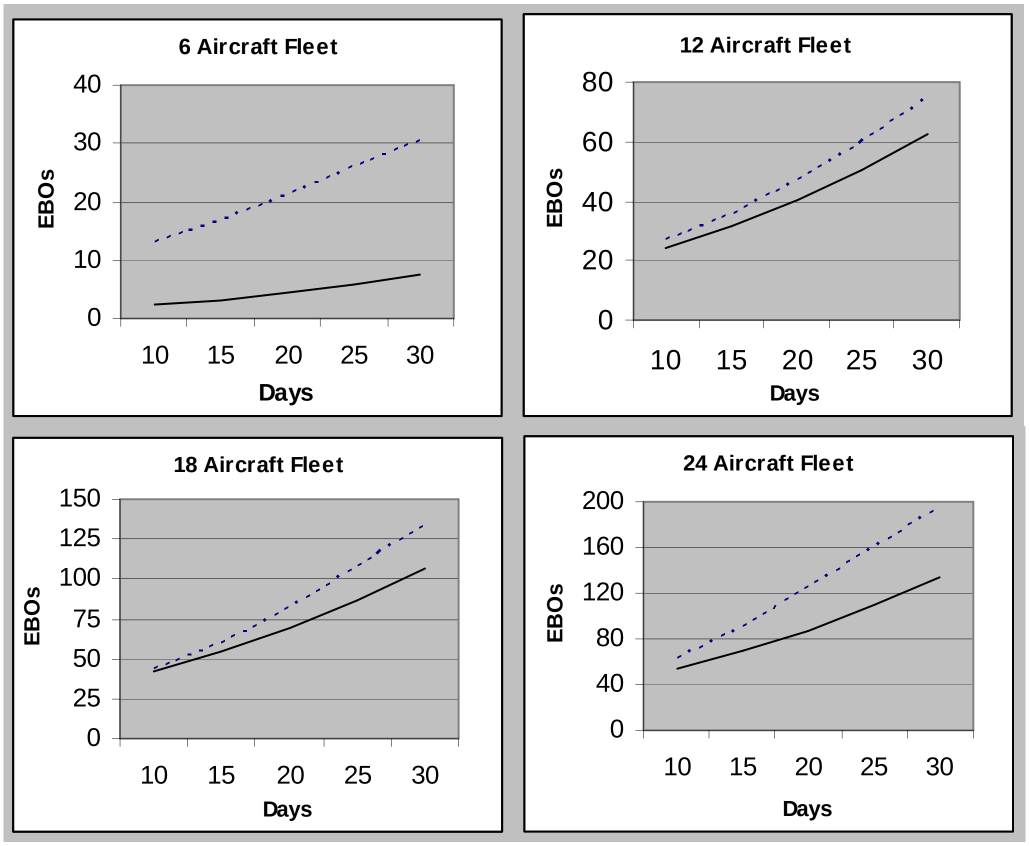


Figure 16. Comparison of Proposed 20 Day MRSP vs. 30 Day Status Quo MRSPs for F-16C

The 20 day 12 aircraft MRSP best supported multiple fleet sizes of F-16C aircraft based on aircraft availability and EBOs. The 10 day 12 aircraft MRSP was identified in the previous chapter as being the least expensive MRSP able to support aircraft availability goals for the three largest aircraft fleet sizes. The two MRSPs are nearly identical in cost with only a 0.06% difference. EBOs generated by the status quo and 20 day MRSPs match each other more closely than did EBOs generated by the status quo and least cost MRSP. Up to day 20 the lines representing EBOs are nearly the same for fleets of 12 and 18 aircraft. The 24 aircraft fleet is an example of where a FOS may be necessary to lower the amount of MICAP parts ordered to fill EBOs.



___ Status Quo MRSP
----- 20 Day MRSP

Figure 17. Comparison of Proposed 20 Day MRSP vs. 30 Day Status Quo MRSPs for F-15E

The 20 day 15 aircraft MRSP best supported multiple fleet sizes of F-15E aircraft based on aircraft availability and EBOs. The 10 day 15 aircraft MRSP was identified in the previous chapter as being the least expensive MRSP able to support aircraft availability goals for the three largest aircraft fleet sizes. The two MRSPs differ in cost by nearly three hundred thousand dollars, or 1.13%, with the 20 day MRSP being the more expensive. The F15E was the most difficult of the three weapon-systems to support as is evident by the higher costs in dollars and higher numbers of EBOs. The 20 day MRSP minimized EBOs better than the less expensive 10 day MRSP, though a FOS would likely be necessary when supporting fleets of 18 or 24 aircraft.

Realizing that the exact number of EBOs generated at each day is difficult to precisely decipher from the graphs, table 10 provides the data used to make all EBO graphs presented in this thesis. The data points are organized so that it is easy to compare the number of EBOs generated by the 30 day status quo MRSPs, least cost MRSP and best performing 20 day MRSP at any given time. In every instance the best performing 20 day MRSP generates less EBOs than the least expensive MRSP. The savings in transportation cost from moving slightly fewer parts may not appear significant, but it is savings that can be realized on every deployment indefinitely.

Table 10. Expected Backorder Data

		Expected Backorders by fleet size			
A-10 Fleet size		**6**	**12**	**18**	**24**
Status Quo MRSP	day 10	0.89	7.73	20.71	41.77
Least Cost MRSP	day 10	14.05	28.39	43.22	59.11
Best 20 day MRSP	day 10	5.24	12.79	23.07	36.99
Status Quo MRSP	day 15	1.52	12.23	31.32	60.53
Least Cost MRSP	day 15	18.12	36.82	57.06	81.6
Best 20 day MRSP	day 15	7.27	18.66	35.56	60.65
Status Quo MRSP	day 20	2.35	17.85	44.06	82.19
Least Cost MRSP	day 20	22.58	46.34	74.6	111.67
Best 20 day MRSP	day 20	9.49	25.58	51.81	91.35
Status Quo MRSP	day 25	3.42	24.78	59.3	107.47
Least Cost MRSP	day 25	27.11	56.6	95.8	145.59
Best 20 day MRSP	day 25	11.93	33.89	72.43	127.3
Status Quo MRSP	day 30	4.79	33.16	77.35	136.95
Least Cost MRSP	day 30	31.69	68.06	119.9	180.88
Best 20 day MRSP	day 30	14.61	43.9	96.8	166.43
F-16C Fleet size		**6**	**12**	**18**	**24**
Status Quo MRSP	day 10	2.11	19.23	34.36	43.85
Least Cost MRSP	day 10	9.1	19.97	35.04	52.95
Best 20 day MRSP	day 10	8.75	18.29	30.66	47.35
Status Quo MRSP	day 15	2.89	24.51	43.48	55.6
Least Cost MRSP	day 15	11.56	27.15	48.57	72.5
Best 20 day MRSP	day 15	11.08	24.03	43.12	66.64
Status Quo MRSP	day 20	3.79	30.04	52.81	67.51
Least Cost MRSP	day 20	14.12	35.14	62.62	92.09
Best 20 day MRSP	day 20	13.4	30.76	56.84	86.18
Status Quo MRSP	day 25	4.92	36.28	63.18	80.67
Least Cost MRSP	day 25	16.9	43.82	77.12	111.96
Best 20 day MRSP	day 25	15.79	38.62	71.24	106.02
Status Quo MRSP	day 30	6.34	43.47	75.22	96.2
Least Cost MRSP	day 30	19.96	52.95	91.84	132.02
Best 20 day MRSP	day 30	18.29	47.35	85.93	126.06
F-15E Fleet size		**6**	**12**	**18**	**24**
Status Quo MRSP	day 10	2.42	23.92	42.25	53.42
Least Cost MRSP	day 10	14.11	30.38	50.98	75.49
Best 20 day MRSP	day 10	12.92	27.02	42.82	61.86
Status Quo MRSP	day 15	3.16	31.39	54.87	69.3
Least Cost MRSP	day 15	18.62	42.41	73.78	108.44
Best 20 day MRSP	day 15	16.89	35.95	59.94	90.54
Status Quo MRSP	day 20	4.28	40.38	69.62	87.72
Least Cost MRSP	day 20	23.76	57.31	99.57	143.76
Best 20 day MRSP	day 20	21.3	46.88	82.25	124.55
Status Quo MRSP	day 25	3.16	50.7	86.51	108.71
Least Cost MRSP	day 25	29.37	73.72	126.03	179.42
Best 20 day MRSP	day 25	25.86	59.68	107.24	159.82
Status Quo MRSP	day 30	7.63	62.76	106.49	134.08
Least Cost MRSP	day 30	35.53	90.89	152.7	215.19
Best 20 day MRSP	day 30	30.59	74.33	133.33	195.41

Recommendations

The analysis shows that the least expensive MRSPs capable of supporting the three largest sizes of aircraft fleets, based on their ability to meet aircraft availability goals, do not support the three largest sizes of aircraft fleets as well as the best performing 20 day MRSPs after EBOs are taken into consideration. The best performing 20 day MRSPs are able to support a wide range of fleet sizes through day 20 nearly as well as the 30 day status quo MRSPs built for specific fleet sizes based on ability to meet aircraft availability goals and EBOs. Table 11 compares the cost and number of days of support based on aircraft availability rates between the least expensive MRSP expected to support the three largest fleets of aircraft for at least 20 days, and the best performing 20 day MRSP for each weapon-system. Cost in dollars and capability to support a fleet of aircraft for 20 or more days is very similar between the two MRSPs within a given weapon-system. The savings generated by shipping fewer parts to fill EBOs on every deployment, and the higher level of service provided to the war fighter on every deployment will likely make up for the slightly higher cost of the 20 day MRSPs.

Table 11. Comparison between least expensive MRSP and best performing 20 day MRSP

			Days of Support for Aircraft Fleet Size				
	MRSP		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft	Cost
A-10	Least Cost	20 Days, 20 Aircraft	20*	30	25	25	$5,062,535
	Best 20 Day	20 Days, 18 Aircraft	25*	25	20	20	$5,137,413
F-16C	Least Cost	15 Days, 12 Aircraft	15*	25	25	20	$4,328,256
	Best 20 Day	20 Days, 12 Aircraft	15*	25	25	20	$4,331,003
F-15E	Least Cost	10 Days, 15 Aircraft	10*	25	30	30	$23,680,884
	Best 20 Day	20 Days, 15 Aircraft	15*	30	30	30	$23,948,460

* MRSP fails to meet aircraft availability goals prior to day 10

In the future the Air Force is planning to maintain its MRSPs at a central storage location with one standard MRSP per weapon-system required to meet all deployment requirements. Out of the 90 MRSPs evaluated, the three best performing 20 day MRSPs are better for the overall spare parts support system than are the least expensive MRSPs capable of supporting the three largest aircraft fleet sizes for at least 20 days. This research supports Winchester's position that a 20 day MRSP is capable of supporting various aircraft fleet sizes through day 20 of a war. In cases where EBOs generated by a 20 day MRSP greatly exceed EBOs generated by the status quo 30 day MRSP prior to day 20 of the war, a FOS should be deployed to reduce MICAP parts moving through the re-supply pipeline. If a reliable re-supply pipeline can not be established by day 20, a FOS is necessary to prevent large numbers of MICAP parts and to maintain aircraft availability goals. The FOS should be custom built for the specific situation it would be sent to support.

It is important to note that all 20 day MRSPs are not equal in terms of performance. Referring to table 9, the reader may note how many days of support each of the 20 day MRSPs is expected to provide based on aircraft availability goals. Each weapon-system's best performing 20 day MRSP was built to support a different number of aircraft. The best A-10 20 day MRSP was built to support 18 aircraft. The best F-16C 20 day MRSP was built to support 12 aircraft. The best F-15E 20 day MRSP was built to support 15 aircraft. It would be a mistake to set a policy where all fighter aircraft would be supported by 20 day MRSPs built for X aircraft. A 20 day MRSP built to support 18 aircraft works well when supporting the A-10, but it falls short of the aircraft availability goal during the first ten days of war when supporting the F-16C or the F-15E aircraft.

Each weapon-system needs to be looked at separately when deciding how many aircraft the 20 day MRSP should be built to support.

Table 12 is a comparison of cost between MRSPs of interest. It compares the cost of the 30 day status quo MRSPs that would be built to support specific aircraft fleet sizes under current policy with the least expensive MRSP and the best performing MRSP, both of which are expected to meet aircraft availability goals for at least 20 days across as many fleet sizes as possible. The best performing MRSP for each weapon system is specifically listed in table 12 by the number of days (20) and aircraft fleet size it was built to support. It is recommended that the Air Force utilize the fleet size specific 20 day MRSPs listed in table 12 if it transitions to a single weapon-system specific MRSP to support multiple sizes of aircraft fleets.

Both the best performing 20 day MRSP and the least expensive MRSP are significantly less expensive in terms of dollars than any of the 30 day status quo MRSPs of the same weapon-system. The percentages by which the 30 day status quo MRSPs are more expensive than the least expensive MRSP (labeled LC) and the best performing 20 day MRSP (labeled 20D) are shown in the two columns furthest to the right. The percentage points by which the 30 day status quo MRSPs are more expensive than either the least expensive or best performing 20 day MRSP are not large. However, a small percentage of a seven or eight digit dollar value is in itself a large savings, especially when multiplied across the entire Air Force.

Table 12.

Comparison of Cost between 30 Day, Least Cost, and Best Performing 20 Day MRSPs

A-10 MRSPs	Cost	% > LC	% > 20D
30 days, 6 aircraft MRSP	$5,785,675.00	14.3%	12.6%
30 days, 12 aircraft MRSP	$5,413,421.00	6.9%	5.4%
30 days, 18 aircraft MRSP	$5,361,371.00	5.9%	4.4%
30 days, 24 aircraft MRSP	$5,304,050.00	4.8%	3.2%
Least Cost MRSP	$5,062,535.00		
20 day, 18 aircraft MRSP	$5,137,413.00		
F-16C MRSPs	Cost	% > LC	% > 20D
30 days, 6 aircraft MRSP	$6,203,831.00	43.3%	43.2%
30 days, 12 aircraft MRSP	$4,400,952.00	1.7%	1.6%
30 days, 18 aircraft MRSP	$4,557,697.00	5.3%	5.2%
30 days, 24 aircraft MRSP	$4,846,924.00	12.0%	11.9%
Least Cost MRSP	$4,328,256.00		
20 day, 12 aircraft MRSP	$4,331,003.00		
F-15E MRSPs	Cost	% > LC	% > 20D
30 days, 6 aircraft MRSP	$29,152,244.00	23.1%	21.7%
30 days, 12 aircraft MRSP	$24,243,036.00	2.4%	1.2%
30 days, 18 aircraft MRSP	$23,951,191.00	1.1%	0.01%
30 days, 24 aircraft MRSP	$24,971,138.00	5.4%	4.3%
Least Cost MRSP	$23,680,884.00		
20 day, 15 aircraft MRSP	$23,948,460.00		

Future Research

This research focused on sizing MRSPs for three fighter aircraft. Similar research could be done on other weapon-systems. Further lean initiatives could include cross weapon-system MRSP analysis to determine if logistics synergies can be developed by maintaining similar weapon-systems deployed to a single location out of the same MRSP. If all MRSPs are eventually managed at the enterprise level and stocked at a few locations, weapon-systems deploying to the same location could have a specially tailored single MRSP deployed for their support. If cross weapon-system synergies exist, one specially tailored MRSP may have a smaller logistics footprint than the sum total of each individual weapon-system's MRSP if they were to deploy separately.

The practicality of implementing leaner MRSPs rests on the premise that the re-supply pipeline can be established earlier, ideally between day 15 and 20. The Air Force should investigate the length of time truly required to establish a re-supply pipeline. The Air Force Supply System typically does not inspire confidence in the hearts and minds of the people who maintain weapon-systems. A quantitative study showing the number of days it has taken to establish re-supply at new locations in recent years would be useful in helping to change the mindset that it takes 30 days to establish a reliable re-supply pipeline. Such a study might also include looking at the amount of time it takes to establish a supply chain for other classes of supply such as food and water, POL, and ammunition (Winchester, 2006). The answer to this question will also help determine how much FOS support the US Air Force needs.

A contributing factor to the US Air Force having large MRSPs is the presence of non-optimized spare parts. Such parts are bought and stocked even though they were not calculated by ASM and their purchase does not provide the greatest quantifiable contribution to the MRSP. In some MRSPs, ASM calculated purchases account only for 40% of the stock. Future research could quantify the value added or lost by stocking non-optimized parts in MRSPs (Winchester, 2007). The higher aircraft availability goal during the first ten days of war has an impact on the number of parts stocked in an MRSP. Additional research could be done to determine whether or not such a higher aircraft availability goal is necessary and appropriate. It is possible that, when used as a parameter in ASM, an aircraft availability goal value set between the two actual aircraft availability goal values will suffice to calculate a leaner MRSP that is still capable of supporting the mission (Niklas, 2007).

Finally, a study could be done to determine if factors in addition to cost and individual part contribution should be considered when calculating MRSP requirements. For example, weight and cube could be factored into the ASM calculations. The parts data for a specific weapon-system could be exported from ASM into an Excel Spreadsheet. The price of each part would be changed to reflect a value equal to a percentage of the price plus a percentage of weight and cube for each individual part. When the Excel spreadsheet is imported back into ASM there will be a hybrid value for each part's price. MRSPs calculated with the hybrid value for price may be lighter while not significantly affecting cost or performance (Niklas, 2006).

Summary

The research question stated in chapter one was, "for how many days (less than 30) and what number of aircraft should a weapon-system specific MRSP be built to support, presuming it needs to be robust enough to achieve aircraft availability goals in aircraft fleets of various size?" The research question was answered with three investigative questions. This chapter began by discussing the answers to the investigative questions and the conclusions that can be drawn from those answers. Next it presented recommendations for which MRSP best met the objective of being smaller with the ability to support diverse numbers of aircraft. Any MRSP built to support 6 aircraft is significantly more expensive and larger than any MRSP built to support 12, 18, or 24 aircraft of the same weapon-system. Significant cost savings can be realized by using a standard 20 day MRSP across all fleet sizes of a specific weapon-system in terms of the amount of inventory stocked in the MRSP and transportation costs. Finally the chapter identified areas for future research in the subject.

Initiatives such as AFSO21 are underway to improve Air Force business practices. Research efforts like the one presented in this thesis lay the foundation to help decision makers change outdated business practices. The result is that the Air Force has a better capability to respond to an increasingly larger range of national security threats while at the same time being the best possible stewards of national resources.

Appendix: Data Collection Tables

Kit	A-10 30 Day 6 Aircraft				
Cost	$5,785,675.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	77.16%	70.42%	58.44%	49.60%
Day 30	NMCS	1.37	3.549	7.48	12.095
Day 30	NMCS Con	77.84%	49.89%	9.40%	0.64%
Day 30	EBO	4.79	29.27	81.52	148.31
Day 25	Availability	79.96%	76.95%	68.13%	60.18%
Day 25	NMCS	1.202	2.765	5.737	9.556
Day 25	NMCS Con	85.35%	72.77%	33.97%	7.78%
Day 25	EBO	3.42	19.59	57.74	110.9
Day 20	Availability	82.79%	82.25%	76.83%	70.41%
Day 20	NMCS	1.032	2.129	4.171	7.101
Day 20	NMCS Con	91.04%	88.26%	68.85%	36.84%
Day 20	EBO	2.35	12.31	37.18	76.27
Day 15	Availability	86.02%	86.40%	83.91%	79.78%
Day 15	NMCS	0.838	1.631	2.896	4.853
Day 15	NMCS Con	95.06%	95.90%	91.59%	77.47%
Day 15	EBO	1.52	7.23	21.16	46.03
Day 10	Availability	89.82%	89.52%	89.20%	87.47%
Day 10	NMCS	0.61	1.257	1.943	3.007
Day 10	NMCS Con	78.69%	82.19%	80.60%	63.11%
Day 10	EBO	0.89	3.84	10.34	22.53

Kit	A-10 25 Day 6 Aircraft				
Cost	$5,538,216.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	72.88%	60.44%	49.41%	42.45%
Day 30	NMCS	1.627	4.747	9.106	13.812
Day 30	NMCS Con	65.65%	20.20%	1.31%	0.04%
Day 30	EBO	6.21	39.37	97.28	166.11
Day 25	Availability	77.11%	68.97%	59.62%	53.12%
Day 25	NMCS	1.373	3.723	7.267	11.252
Day 25	NMCS Con	77.54%	44.30%	9.87%	1.19%
Day 25	EBO	4.29	27.11	71.93	127.93
Day 20	Availability	80.87%	76.52%	69.41%	63.66%
Day 20	NMCS	1.147	2.818	5.507	8.722
Day 20	NMCS Con	86.74%	70.51%	37.36%	12.99%
Day 20	EBO	2.83	17.12	48.84	91.83
Day 15	Availability	84.68%	82.90%	78.32%	73.78%
Day 15	NMCS	0.919	2.052	3.902	6.292
Day 15	NMCS Con	66.47%	45.21%	15.86%	3.27%
Day 15	EBO	1.77	9.76	29.18	58.98
Day 10	Availability	88.94%	87.89%	85.89%	83.11%
Day 10	NMCS	0.663	1.453	2.539	4.053
Day 10	NMCS Con	76.60%	72.66%	58.07%	33.12%
Day 10	EBO	1.01	4.87	14.3	30.95

Kit	A-10 20 Day 6 Aircraft				
Cost	$5,512,946.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	70.52%	54.03%	43.54%	37.67%
Day 30	NMCS	1.768	5.516	10.162	14.959
Day 30	NMCS Con	59.88%	10.02%	0.34%	0.01%
Day 30	EBO	6.84	43.26	101.94	170.88
Day 25	Availability	75.81%	63.74%	54.13%	48.43%
Day 25	NMCS	1.451	4.351	8.256	12.377
Day 25	NMCS Con	74.12%	29.04%	3.75%	0.29%
Day 25	EBO	0.046	30.4	76.51	132.78
Day 20	Availability	80.25%	72.79%	64.62%	59.25%
Day 20	NMCS	1.185	3.264	6.376	9.779
Day 20	NMCS Con	85.18%	57.40%	21.12%	5.27%
Day 20	EBO	2.96	19.46	53.08	96.57
Day 15	Availability	84.42%	80.75%	74.66%	69.92%
Day 15	NMCS	0.934	2.31	4.561	7.219
Day 15	NMCS Con	92.52%	82.53%	58.52%	32.92%
Day 15	EBO	1.81	11.01	32.62	63.42
Day 10	Availability	88.86%	87.08%	83.77%	80.27%
Day 10	NMCS	0.668	1.551	2.92	4.736
Day 10	NMCS Con	76.40%	68.37%	44.74%	19.68%
Day 10	EBO	1.02	5.28	16.27	34.5

* ASM calculated an MRSP identical to the one above for the
A-10 15 day and 10 day 6 aircraft MRSPs.

Kit	A-10 30 Day 12 Aircraft				
Cost	$5,413,421.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	76.69%	77.29%	72.22%	64.19%
Day 30	NMCS	1.398	2.725	5	8.595
Day 30	NMCS Con	76.47%	75.25%	49.50%	15.41%
Day 30	EBO	9.08	33.16	78.68	144.3
Day 25	Availability	78.78%	80.68%	78.31%	72.90%
Day 25	NMCS	1.273	2.318	3.904	6.504
Day 25	NMCS Con	83.63%	86.67%	76.62%	48.29%
Day 25	EBO	7.11	24.78	57.22	106.83
Day 20	Availability	80.52%	83.76%	83.09%	80.22%
Day 20	NMCS	1.169	1.948	3.043	4.747
Day 20	NMCS Con	89.45%	93.69%	92.07%	81.23%
Day 20	EBO	5.39	17.85	39.78	73.79
Day 15	Availability	82.03%	86.64%	86.73%	85.81%
Day 15	NMCS	1.07	1.603	2.388	3.405
Day 15	NMCS Con	93.84%	97.44%	98.00%	96.06%
Day 15	EBO	3.93	12.23	26.18	47.2
Day 10	Availability	83.72%	89.07%	89.85%	89.80%
Day 10	NMCS	0.977	1.312	1.826	2.447
Day 10	NMCS Con	66.15%	80.10%	87.30%	81.19%
Day 10	EBO	2.68	7.73	15.78	27.38

Kit	A-10 25 Day 12 Aircraft				
Cost	$5,272,257.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	76.25%	70.85%	59.14%	50.33%
Day 30	NMCS	1.424	3.497	7.355	11.922
Day 30	NMCS Con	75.14%	51.82%	10.43%	0.76%
Day 30	EBO	9.28	38.88	95.3	165.46
Day 25	Availability	78.61%	77.13%	68.67%	60.81%
Day 25	NMCS	1.283	2.744	5.64	9.405
Day 25	NMCS Con	83.07%	74.24%	36.07%	8.72%
Day 25	EBO	7.19	27.93	69.9	126.32
Day 20	Availability	80.46%	82.11%	77.20%	70.91%
Day 20	NMCS	1.172	2.146	4.104	6.982
Day 20	NMCS Con	89.27%	89.16%	70.52%	39.11%
Day 20	EBO	5.42	19.26	47.61	89.71
Day 15	Availability	82.01%	86.06%	84.07%	80.12%
Day 15	NMCS	1.079	1.673	2.868	4.772
Day 15	NMCS Con	93.80%	96.38%	92.10%	78.82%
Day 15	EBO	3.94	12.72	29.73	57.26
Day 10	Availability	83.71%	88.94%	89.05%	87.60%
Day 10	NMCS	0.977	1.326	1.97	2.975
Day 10	NMCS Con	66.14%	79.31%	81.99%	64.78%
Day 10	EBO	2.68	7.84	16.8	31.29

Kit	A-10 20 Day 12 Aircraft				
Cost	$5,271,480.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	76.24%	70.36%	58.27%	49.52%
Day 30	NMCS	1.425	3.556	7.51	12.115
Day 30	NMCS Con	75.12%	49.90%	8.92%	0.58%
Day 30	EBO	9.2	39.4	96.27	166.46
Day 25	Availability	78.61%	76.88%	67.98%	60.07%
Day 25	NMCS	1.283	2.774	5.763	9.583
Day 25	NMCS Con	83.07%	73.24%	33.19%	7.34%
Day 25	EBO	0.0719	28.22	70.79	127.31
Day 20	Availability	80.46%	82.02%	76.75%	70.28%
Day 20	NMCS	1.172	2.157	4.184	7.131
Day 20	NMCS Con	89.27%	88.90%	68.48%	36.01%
Day 20	EBO	5.43	19.37	48.28	90.67
Day 15	Availability	82.01%	86.04%	83.87%	79.69%
Day 15	NMCS	0.977	1.675	2.903	4.873
Day 15	NMCS Con	66.14%	96.35%	91.66%	77.13%
Day 15	EBO	2.68	12.74	30.07	58.05
Day 10	Availability	83.71%	88.94%	89.01%	87.44%
Day 10	NMCS	0.977	1.326	1.978	3.014
Day 10	NMCS Con	66.14%	79.30%	81.70%	63.43%
Day 10	EBO	2.68	7.85	16.87	31.66

* ASM calculated an MRSP identical to the one above for the
A-10 15 day and 10 day 12 aircraft MRSPs.

Kit	A-10 30 Day 15 Aircraft					
Cost	$5,336,325.00					
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	75.57%	77.97%	75.08%	68.31%
Day 30	NMCS	1.465	2.643	4.486	7.606
Day 30	NMCS Con	72.41%	78.37%	63.33%	29.82%
Day 30	EBO	12.1	37.51	80.18	142.79
Day 25	Availability	77.77%	80.78%	80.01%	76.04%
Day 25	NMCS	1.333	2.306	3.598	5.749
Day 25	NMCS Con	80.03%	87.92%	84.10%	64.16%
Day 25	EBO	9.71	29.13	60.34	106.57
Day 20	Availability	79.64%	83.44%	83.87%	82.17%
Day 20	NMCS	1.221	1.987	2.903	4.279
Day 20	NMCS Con	86.57%	93.99%	94.70%	88.48%
Day 20	EBO	7.56	21.9	43.92	75.66
Day 15	Availability	81.16%	86.09%	86.86%	86.68%
Day 15	NMCS	1.13	1.669	2.364	3.196
Day 15	NMCS Con	91.78%	97.41%	98.63%	97.74%
Day 15	EBO	5.63	15.73	30.55	50.97
Day 10	Availability	82.53%	88.54%	89.57%	89.94%
Day 10	NMCS	1.048	1.375	1.877	2.414
Day 10	NMCS Con	63.15%	76.35%	87.00%	82.92%
Day 10	EBO	3.91	10.48	19.68	31.77

Kit	A-10 25 Day 15 Aircraft				
Cost	$5,154,321.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	75.19%	75.08%	67.67%	59.13%
Day 30	NMCS	1.488	2.99	5.819	9.808
Day 30	NMCS Con	71.16%	67.07%	32.29%	6.64%
Day 30	EBO	12.87	42.32	94.41	164.17
Day 25	Availability	77.56%	79.21%	75.06%	68.57%
Day 25	NMCS	1.346	2.494	4.488	7.543
Day 25	NMCS Con	79.29%	82.43%	63.02%	30.74%
Day 25	EBO	10.3	32.24	70.41	124.84
Day 20	Availability	79.52%	82.64%	81.13%	77.01%
Day 20	NMCS	1.228	2.082	3.397	5.518
Day 20	NMCS Con	86.17%	92.00%	86.21%	67.70%
Day 20	EBO	7.99	23.81	50.17	89.03
Day 15	Availability	81.09%	85.73%	85.69%	83.91%
Day 15	NMCS	1.134	1.713	2.576	3.860
Day 15	NMCS Con	58.28%	56.82%	56.87%	36.95%
Day 15	EBO	5.95	16.86	33.94	58.86
Day 10	Availability	82.44%	88.41%	89.15%	88.97%
Day 10	NMCS	1.053	1.391	1.952	2.646
Day 10	NMCS Con	62.91%	75.42%	84.32%	75.37%
Day 10	EBO	4.13	11.12	21.27	35.39

Kit	F-15 20 Day 15 Aircraft				
Cost	$5,117,808.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	75.11%	73.15%	62.59%	53.36%
Day 30	NMCS	1.493	3.221	6.733	11.192
Day 30	NMCS Con	70.90%	59.84%	16.94%	1.69%
Day 30	EBO	13.08	44.55	101.38	172.4
Day 25	Availability	77.53%	78.30%	71.57%	63.69%
Day 25	NMCS	1.348	2.603	5.118	8.715
Day 25	NMCS Con	79.18%	79.14%	47.26%	14.41%
Day 25	EBO	10.45	33.44	75.72	132.75
Day 20	Availability	79.52%	82.29%	79.22%	73.43%
Day 20	NMCS	1.229	2.125	3.74	6.375
Day 20	NMCS Con	86.15%	91.01%	78.95%	50.26%
Day 20	EBO	8.11	24.4	53.32	95.71
Day 15	Availability	81.09%	85.61%	84.98%	81.96%
Day 15	NMCS	1.134	1.726	2.70.3	4.329
Day 15	NMCS Con	91.60%	96.72%	95.01%	85.69%
Day 15	EBO	6.03	11.29	35.29	63
Day 10	Availability	82.43%	88.39%	88.99%	88.38%
Day 10	NMCS	1.054	1.393	1.981	2.789
Day 10	NMCS Con	62.90%	75.26%	83.33%	70.79%
Day 10	EBO	4.19	11.29	21.74	36.88

* ASM calculated an MRSP identical to the one above for the A-10 15 day and 10 day 15 aircraft MRSPs.

Kit	A-10 30 Day 18 Aircraft				
Cost	$5,361,371.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	74.24%	77.82%	77.02%	72.61%
Day 30	NMCS	1.545	2.662	4.136	6.573
Day 30	NMCS Con	67.95%	77.75%	72.33%	47.48%
Day 30	EBO	13.16	37.99	77.35	134.8
Day 25	Availability	76.56%	80.36%	80.82%	78.76%
Day 25	NMCS	1.406	2.356	3.452	5.097
Day 25	NMCS Con	75.86%	86.68%	87.73%	76.98%
Day 25	EBO	10.74	29.94	59.3	101.26
Day 20	Availability	78.61%	82.85%	83.96%	83.42%
Day 20	NMCS	1.283	2.058	2.886	3.978
Day 20	NMCS Con	83.01%	92.82%	95.48%	93.07%
Day 20	EBO	8.54	22.9	44.06	73.26
Day 15	Availability	80.34%	85.41%	86.61%	86.95%
Day 15	NMCS	1.179	1.751	2.41	3.13
Day 15	NMCS Con	89.05%	96.62%	98.63%	98.54%
Day 15	EBO	6.53	16.8	31.32	50.65
Day 10	Availability	81.81%	87.91%	89.14%	89.77%
Day 10	NMCS	1.091	1.451	1.954	2.455
Day 10	NMCS Con	60.83%	71.86%	84.03%	81.31%
Day 10	EBO	4.69	11.52	20.71	32.49

Kit	A-10 25 Day 18 Aircraft				
Cost	$5,098,401.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	74.09%	76.06%	70.60%	62.48%
Day 30	NMCS	1.554	2.873	5.291	9.005
Day 30	NMCS Con	67.48%	70.77%	43.59%	12.59%
Day 30	EBO	13.86	41.2	89.1	156.27
Day 25	Availability	76.49%	79.50%	77.07%	71.41%
Day 25	NMCS	1.41	2.459	4.128	6.862
Day 25	NMCS Con	75.62%	83.59%	71.85%	42.62%
Day 25	EBO	11.33	32	66.83.	118.01
Day 20	Availability	78.59%	82.46%	82.17%	79.07%
Day 20	NMCS	1.284	2.105	32.09	5.023
Day 20	NMCS Con	82.92%	91.78%	89.96%	76.66%
Day 20	EBO	9.02	24.22	48.34	84.06
Day 15	Availability	80.33%	85.25%	85.95%	85.02%
Day 15	NMCS	1.18	1.77	2.528	3.596
Day 15	NMCS Con	89.03%	96.36%	97.46%	94.56%
Day 15	EBO	6.93	17.69	33.55	56.26
Day 10	Availability	81.76%	87.86%	88.95%	89.22%
Day 10	NMCS	1.094	1.456	1.989	2.587
Day 10	NMCS Con	60.75%	71.53%	82.77%	76.94%
Day 10	EBO	5	12.14	21.86	34.87

Kit	A-10 20 Day 18 Aircraft				
Cost	$5,137,413.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	74.85%	75.49%	66.84%	57.26%
Day 30	NMCS	1.509	2.941	5.968	10.257
Day 30	NMCS Con	69.88%	68.93%	29.84%	4.70%
Day 30	EBO	14.61	43.9	96.8	166.43
Day 25	Availability	77.20%	79.51%	74.92%	67.32%
Day 25	NMCS	1.368	2.459	4.513	7.842
Day 25	NMCS Con	77.98%	83.67%	62.13%	25.87%
Day 25	EBO	11.93	33.89	72.43	127.3
Day 20	Availability	79.20%	82.72%	81.37%	76.51%
Day 20	NMCS	1.248	2.073	3.353	5.638
Day 20	NMCS Con	85.03%	92.48%	86.70%	64.64%
Day 20	EBO	9.49	25.58	51.81	91.35
Day 15	Availability	80.80%	85.62%	85.91%	84.00%
Day 15	NMCS	1.151	1.725	2.537	3.839
Day 15	NMCS Con	90.72%	96.97%	96.93%	91.49%
Day 15	EBO	7.27	18.66	35.56	60.65
Day 10	Availability	82.07%	88.23%	89.16%	89.15%
Day 10	NMCS	1.075	1.412	1.951	2.604
Day 10	NMCS Con	61.90%	74.01%	84.77%	76.65%
Day 10	EBO	5.24	12.79	23.07	36.99

Kit	A-10 15 Day 18 Aircraft				
Cost	$5,114,680.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	74.70%	75.44.%	66.84%	57.26%
Day 30	NMCS	1.517	2.947	5.969	10.257
Day 30	NMCS Con	69.35%	68.77%	29.82%	4.70%
Day 30	EBO	14.87	44.49	97.6	167.33
Day 25	Availability	77.09%	79.44%	74.91%	67.32%
Day 25	NMCS	1.374	2.467	4.516	7.843
Day 25	NMCS Con	77.57%	83.55%	62.12%	25.87%
Day 25	EBO	12.15	34.4	73.16	128.15
Day 20	Availability	79.13%	82.64%	81.34%	76.50%
Day 20	NMCS	1.252	2.083	3.359	5.64
Day 20	NMCS Con	84.76%	92.42%	86.69%	64.64%
Day 20	EBO	9.66	26	52.45	92.14
Day 15	Availability	80.76%	85.53%	85.86%	83.99%
Day 15	NMCS	1.154	1.736	2.544	3.843
Day 15	NMCS Con	90.58%	96.95%	96.93%	91.49%
Day 15	EBO	7.39	18.99	36.09	61.33
Day 10	Availability	82.05%	88.17%	89.10%	89.12%
Day 10	NMCS	1.077	1.42	1.961	2.611
Day 10	NMCS Con	61.82%	73.54%	84.58%	76.48%
Day 10	EBO	5.31	13.02	23.46	37.53

* ASM calculated an MRSP identical to the one above for the A-10 10 day 18 aircraft MRSP.

Kit	A-10 30 Day 20 Aircraft				
Cost	$5,317,344.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	72.81%	77.43%	77.61%	74.82%
Day 30	NMCS	1.631	2.708	4.03	6.042
Day 30	NMCS Con	63.07%	76.32%	75.17%	57.33%
Day 30	EBO	14.51	39.49	77.7	132.4
Day 25	Availability	75.26%	79.85%	80.90%	79.87%
Day 25	NMCS	1.484	2.417	3.437	4.831
Day 25	NMCS Con	71.30%	85.28%	88.45%	82.17%
Day 25	EBO	11.97	31.53	60.31	100.49
Day 20	Availability	77.52%	82.22%	83.78%	93.77%
Day 20	NMCS	1.349	2.134	2.92	3.896
Day 20	NMCS Con	79.16%	91.74%	95.44%	94.45%
Day 20	EBO	9.62	24.48	45.45	73.77
Day 15	Availability	79.49%	84.68%	86.28%	86.89%
Day 15	NMCS	1.23	1.837	2.468	3.146
Day 15	NMCS Con	86.06%	95.93%	98.54%	98.69%
Day 15	EBO	7.44	18.27	32.9	51.9
Day 10	Availability	81.18%	87.23%	88.70%	89.53%
Day 10	NMCS	1.129	1.532	2.034	2.511
Day 10	NMCS Con	58.59%	66.50%	81.36%	79.63%
Day 10	EBO	5.42	12.79	22.26	34.06

Kit	A-10 25 Day 20 Aircraft				
Cost	$5,039,999.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	72.80%	76.62%	72.94%	65.61%
Day 30	NMCS	1.631	2.805	4.871	8.252
Day 30	NMCS Con	63.02%	73.08%	53.44%	20.56%
Day 30	EBO	15.3	42.82	88.91	154.29
Day 25	Availability	75.26%	79.55%	78.52%	73.86%
Day 25	NMCS	1.484	2.454	3.866	6.272
Day 25	NMCS Con	71.31%	84.24%	78.51%	53.82%
Day 25	EBO	12.62	33.76	67.62	116.74
Day 20	Availability	77.53%	82.12%	82.84%	80.68%
Day 20	NMCS	1.348	2.145	3.088	4.637
Day 20	NMCS Con	79.15%	91.56%	92.75%	83.45%
Day 20	EBO	10.14	25.97	49.80	84.09
Day 15	Availability	79.50%	84.66%	86.04%	85.77%
Day 15	NMCS	1.23	1.84	2.513	3.414
Day 15	NMCS Con	86.09%	95.95%	98.15%	96.63%
Day 15	EBO	7.85	19.29	35.29	57.46
Day 10	Availability	81.16%	87.23%	88.65%	89.32%
Day 10	NMCS	1.13	1.532	2.042	2.563
Day 10	NMCS Con	58.58%	66.48%	81.23%	77.59%
Day 10	EBO	5.72	13.48	23.57	36.6

Kit	A-10 20 Day 20 Aircraft				
Cost	$5,013,391.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	72.91%	76.17%	70.01%	60.75%
Day 30	NMCS	1.625	2.859	5.397	9.419
Day 30	NMCS Con	63.37%	71.36%	40.88%	9.02%
Day 30	EBO	15.44	43.9	94.36	163.11
Day 25	Availability	75.36%	79.42%	77.01%	70.36%
Day 25	NMCS	1.478	2.469	4.139	7.114
Day 25	NMCS Con	71.64%	83.76%	71.72%	37.33%
Day 25	EBO	12.72	34.37	70.88	124.27
Day 20	Availability	77.61%	82.12%	82.28%	78.73%
Day 20	NMCS	1.343	2.145	3.19	5.105
Day 20	NMCS Con	79.42%	91.55%	90.80%	75.08%
Day 20	EBO	10.2	26.33	51.36	89.07
Day 15	Availability	79.56%	84.71%	85.92%	85.08%
Day 15	NMCS	1.226	1.835	2.533	3.582
Day 15	NMCS Con	86.29%	96.01%	97.83%	94.92%
Day 15	EBO	7.89	19.5	35.97	59.7
Day 10	Availability	81.20%	87.28%	88.67%	89.21%
Day 10	NMCS	1.128	1.526	2.039	2.588
Day 10	NMCS Con	58.70%	66.84%	81.43%	76.8
Day 10	EBO	5.74	13.59	23.87	37.34

Kit	A-10 15 Day 20 Aircraft				
Cost	$5,062,535.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	73.49%	76.50%	70.10%	60.76%
Day 30	NMCS	1.59	2.82	5.382	9.417
Day 30	NMCS Con	65.12%	72.91%	41.41%	9.08%
Day 30	EBO	16.49	46.11	97.4	166.69
Day 25	Availability	75.92%	79.74%	77.15%	70.39%
Day 25	NMCS	1.445	2.43	4.112	7.107
Day 25	NMCS Con	73.42%	85.13%	72.31%	37.48%
Day 25	EBO	13.6	36.3	73.63	127.59
Day 20	Availability	78.11%	82.43%	82.48%	78.80%
Day 20	NMCS	1.313	2.109	3.153	5.088
Day 20	NMCS Con	81.11%	92.58%	91.19%	75.23%
Day 20	EBO	10.93	27.94	53.76	92.06
Day 15	Availability	79.96%	85.00%	86.14%	85.21%
Day 15	NMCS	1.202	1.799	2.494	3.549
Day 15	NMCS Con	87.72%	96.67%	98.02%	94.99%
Day 15	EBO	8.46	20.79	37.95	62.26
Day 10	Availability	81.47%	87.57%	88.87%	89.38%
Day 10	NMCS	1.111	1.492	2.003	2.549
Day 10	NMCS Con	59.72%	68.69%	83.62%	78.39%
Day 10	EBO	6.16	14.54	25.37	39.36

* ASM calculated an MRSP identical to the one above for the A-10 10 day 20 aircraft MRSP.

Kit	A-10 30 Day 24 Aircraft					
Cost	$5,304,050.00					
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	70.23%	76.80%	78.24%	77.25%
Day 30	NMCS	1.786	2.783	3.916	5.459
Day 30	NMCS Con	53.97%	74.33%	79.45%	70.79%
Day 30	EBO	19.41	47.61	85.97	136.95
Day 25	Availability	72.86%	79.05%	80.94%	81.08%
Day 25	NMCS	1.628	2.514	3.43	4.54
Day 25	NMCS Con	62.72%	83.43%	90.11%	88.20%
Day 25	EBO	16.29	39.01	68.99	107.47
Day 20	Availability	75.50%	81.18%	83.45%	84.13%
Day 20	NMCS	1.47	2.258	2.978	3.808
Day 20	NMCS Con	71.81%	90.36%	95.93%	96.19%
Day 20	EBO	13.32	31.12	53.89	82.19
Day 15	Availability	77.98%	83.42%	85.77%	86.75%
Day 15	NMCS	1.321	1.989	2.561	3.18
Day 15	NMCS Con	80.57%	95.10%	98.63%	99.03%
Day 15	EBO	10.51	23.92	40.51	60.53
Day 10	Availability	80.16%	85.99%	87.95%	89.16%
Day 10	NMCS	1.19	1.681	2.169	2.6
Day 10	NMCS Con	54.76%	57.05%	77.23%	0.7715
Day 10	EBO	7.81	17.3	28.58	41.77

Kit	A-10 25 Day 24 Aircraft				
Cost	$4,985,522.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	69.97%	76.25%	75.49%	70.39%
Day 30	NMCS	1.801	2.85	4.411	7.106
Day 30	NMCS Con	53.12%	71.92%	65.46%	37.34%
Day 30	EBO	20.04	49.73	93.79	155.62
Day 25	Availability	72.63%	78.75%	79.61%	77.15%
Day 25	NMCS	1.642	2.549	3.669	5.484
Day 25	NMCS Con	61.91%	82.28%	84.46%	69.62%
Day 25	EBO	16.82	40.49	73.77	119.85
Day 20	Availability	75.30%	81.01%	82.89%	82.34%
Day 20	NMCS	1.482	2.279	3.08	4.237
Day 20	NMCS Con	71.09%	89.86%	94.37%	90.44%
Day 20	EBO	13.77	32.19	56.63	89.28
Day 15	Availability	77.82%	83.28%	85.55%	86.11%
Day 15	NMCS	1.33	2.006	2.6	3.332
Day 15	NMCS Con	79.99%	94.90%	98.33%	98.07%
Day 15	EBO	10.87	24.71	42.08	64.07
Day 10	Availability	80.05%	85.87%	87.84%	88.98%
Day 10	NMCS	1.197	1.695	2.188	2.644
Day 10	NMCS Con	54.34%	56.17%	76.35%	75.55%
Day 10	EBO	8.09	17.87	29.54	43.43

Kit	A-10 20 Day 24 Aircraft				
Cost	$4,801,543.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	69.91%	75.87%	72.86%	64.80%
Day 30	NMCS	1.805	2.895	4.884	8.448
Day 30	NMCS Con	52.88%	70.43%	53.62%	18.41%
Day 30	EBO	20.9	52.48	102.1	171.16
Day 25	Availability	72.57%	78.61%	78.39%	73.57%
Day 25	NMCS	1.645	2.566	3.89	6.343
Day 25	NMCS Con	61.70%	81.75%	79.08%	52.49%
Day 25	EBO	0.1753	42.52	79.17	131.83
Day 20	Availability	75.26%	80.95%	82.44%	80.63%
Day 20	NMCS	1.484	2.286	3.16	4.648
Day 20	NMCS Con	70.94%	89.73%	92.88%	83.67%
Day 20	EBO	14.34	33.69	60.01	96.91
Day 15	Availability	77.80%	83.24%	85.44%	85.57%
Day 15	NMCS	1.332	2.01	2.621	3.464
Day 15	NMCS Con	79.90%	94.88%	98.10%	96.77%
Day 15	EBO	11.31	25.8	44.23	68.25
Day 10	Availability	80.03%	85.84%	87.81%	88.88%
Day 10	NMCS	1.198	1.699	2.194	2.668
Day 10	NMCS Con	54.29%	55.93%	76.16%	74.74
Day 10	EBO	8.41	18.63	30.89	45.68

Kit	A-10 15 Day 24 Aircraft				
Cost	$4,785,147.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	69.93%	75.87%	72.86%	64.80%
Day 30	NMCS	1.804	2.895	4.885	8.448
Day 30	NMCS Con	52.96%	70.45%	53.62%	18.41%
Day 30	EBO	21.26	53.42	103.48	172.78
Day 25	Availability	72.61%	78.61%	78.38%	73.57%
Day 25	NMCS	1.643	2.566	3.89	6.343
Day 25	NMCS Con	61.83%	81.77%	79.08%	52.49%
Day 25	EBO	17.82	43.31	80.40	133.35
Day 20	Availability	75.30%	80.95%	82.44%	80.63%
Day 20	NMCS	1.482	2.286	3.16	4.648
Day 20	NMCS Con	71.10%	89.76%	92.88%	83.67%
Day 20	EBO	14.55	34.32	61.05	98.26
Day 15	Availability	77.84%	83.25%	85.44%	85.57%
Day 15	NMCS	1.329	2.01	2.621	3.464
Day 15	NMCS Con	80.06%	94.90%	98.10%	96.77%
Day 15	EBO	11.47	26.27	45.05	69.38
Day 10	Availability	80.07%	85.86%	87.81%	88.88%
Day 10	NMCS	1.195	1.679	2.193	2.668
Day 10	NMCS Con	54.43%	56.05%	76.24%	74.76%
Day 10	EBO	8.52	18.94	31.46	46.52

Kit	A-10 10 Day 24 Aircraft				
Cost	$4,762,055.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	69.77%	76.03%	73.85%	66.34%
Day 30	NMCS	1.814	2.876	4.706	8.078
Day 30	NMCS Con	31.28%	38.87%	23.66%	4.26%
Day 30	EBO	22.64	55.81	106.01	175.17
Day 25	Availability	72.45%	78.65%	78.91%	74.72%
Day 25	NMCS	1.653	2.562	3.796	6.068
Day 25	NMCS Con	43.21%	56.90%	51.58%	25.36%
Day 25	EBO	19.01	45.51	82.95	135.81
Day 20	Availability	75.17%	80.92%	82.64%	81.30%
Day 20	NMCS	1.489	2.289	3.125	4.488
Day 20	NMCS Con	56.40%	73.14%	76.33%	63.82%
Day 20	EBO	15.56	36.25	63.53	100.8
Day 15	Availability	77.75%	83.18%	85.47%	85.81%
Day 15	NMCS	1.334	2.018	2.615	3.405
Day 15	NMCS Con	69.62%	85.37%	90.55%	89.49%
Day 15	EBO	0.1229	27.88	47.28	71.9
Day 10	Availability	80.02%	85.78%	87.78%	88.92%
Day 10	NMCS	1.198	1.707	2.199	2.66
Day 10	NMCS Con	54.24%	55.96%	76.43%	75.07%
Day 10	EBO	9.14	20.19	33.29	48.79

Kit	F-15E 30 Day 6 Aircraft				
Cost	$29,152,244.00				
Eval at X		6 ship	12 ship	18 Ship	24 ship
Day 30	Availability	75.71%	79.27%	80.40%	80.80%
Day 30	NMCS	1.457	2.487	3.528	4.609
Day 30	NMCS Con	77.45%	88.73%	88.75%	90.75%
Day 30	EBO	7.63	36.52	80.55	130.07
Day 25	Availability	77.74%	81.55%	82.70%	83.13%
Day 25	NMCS	1.019	2.214	3.114	4.049
Day 25	NMCS Con	89.74%	93.40%	93.80%	95.38%
Day 25	EBO	5.73	25.92	60.79	101.34
Day 20	Availability	79.63%	83.89%	84.96%	85.45%
Day 20	NMCS	1.222	1.933	2.707	3.493
Day 20	NMCS Con	88.15%	96.53%	96.99%	98.01%
Day 20	EBO	4.28	17	42.35	73.94
Day 15	Availability	81.49%	86.12%	87.11%	87.59%
Day 15	NMCS	1.11	1.666	2.32	2.979
Day 15	NMCS Con	92.19%	98.32%	98.63%	99.17%
Day 15	EBO	3.16	10.39	26.16	48.56
Day 10	Availability	83.01%	87.52%	88.53%	88.86%
Day 10	NMCS	1.019	1.497	2.063	2.672
Day 10	NMCS Con	89.74%	93.35%	94.30%	94.44%
Day 10	EBO	2.42	6.65	14.69	27.84

* ASM calculated an MRSP identical to the one above for all other F-15E 6 aircraft MRSPs.

Kit	F-15E 30 Day 12 Aircraft				
Cost	$24,243,036.00		501		
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	67.31%	75.38%	78.08%	79.39%
Day 30	NMCS	1.961	2.953	3.945	4.946
Day 30	NMCS Con	53.01%	78.86%	83.56%	88.62%
Day 30	EBO	26.64	62.76	116.42	176.6
Day 25	Availability	69.98%	77.49%	80.17%	81.49%
Day 25	NMCS	1.801	2.701	3.569	4.442
Day 25	NMCS Con	60.58%	86.23%	90.04%	93.87%
Day 25	EBO	22.58	50.7	91.94	141.96
Day 20	Availability	72.83%	79.56%	82.28%	83.56%
Day 20	NMCS	1.63	2.452	3.19	3.946
Day 20	NMCS Con	68.83%	91.75%	94.48%	97.00%
Day 20	EBO	18.63	40.38	69.69	108.18
Day 15	Availability	75.64%	81.63%	84.23%	85.45%
Day 15	NMCS	1.461	2.205	2.838	3.491
Day 15	NMCS Con	77.10%	95.25%	96.94%	98.46%
Day 15	EBO	14.81	31.39	51.18	77.1
Day 10	Availability	77.68%	83.20%	85.30%	86.35%
Day 10	NMCS	1.339	2.015	2.646	3.275
Day 10	NMCS Con	70.27%	81.99%	86.36%	0.8823
Day 10	EBO	11.43	23.92	37.61	53.39

Kit	F-15E 25 Day 12 Aircraft				
Cost	$23,985,441.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	65.87%	74.21%	77.02%	78.39%
Day 30	NMCS	2.047	3.095	4.136	5.085
Day 30	NMCS Con	49.01%	73.83%	79.45%	85.51%
Day 30	EBO	28.7	72.41	130.77	191.91
Day 25	Availability	68.65%	76.50%	79.25%	80.63%
Day 25	NMCS	1.881	2.82	3.735	4.648
Day 25	NMCS Con	56.77%	82.96%	87.61%	92.29%
Day 25	EBO	24.16	57.7	105.07	156.84
Day 20	Availability	71.67%	78.76%	81.51%	82.85%
Day 20	NMCS	1.699	2.548	3.328	4.115
Day 20	NMCS Con	65.46%	89.91%	93.28%	96.35%
Day 20	EBO	19.84	44.79	80.32	122.14
Day 15	Availability	74.75%	80.97%	83.65%	84.91%
Day 15	NMCS	1.515	2.283	2.942	3.621
Day 15	NMCS Con	74.47%	94.40%	96.48%	98.25%
Day 15	EBO	15.71	33.93	57.95	88.56
Day 10	Availability	77.17%	82.76%	84.97%	86.07%
Day 10	NMCS	1.37	2.069	2.704	3.343
Day 10	NMCS Con	67.61%	80.27%	85.42%	87.68%
Day 10	EBO	12.02	25.35	40.74	59.86

Kit	F-15E 20 Day 12 Aircraft				
Cost	$23,979,780.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	65.87%	74.21%	77.02%	78.39%
Day 30	NMCS	2.047	3.095	4.136	5.185
Day 30	NMCS Con	49.01%	73.83%	79.45%	85.51%
Day 30	EBO	29.51	78.14	137.68	198.9
Day 25	Availability	68.65%	76.50%	79.25%	80.63%
Day 25	NMCS	1.881	2.82	3.735	4.648
Day 25	NMCS Con	56.77%	82.96%	87.61%	92.29%
Day 25	EBO	24.55	62.25	111.79	163.82
Day 20	Availability	71.67%	78.76%	81.51%	82.85%
Day 20	NMCS	1.699	2.548	3.328	4.115
Day 20	NMCS Con	65.46%	89.91%	93.28%	96.35%
Day 20	EBO	20	47.73	86.39	129.01
Day 15	Availability	74.75%	80.97%	83.65%	84.91%
Day 15	NMCS	1.515	2.283	2.942	3.621
Day 15	NMCS Con	74.47%	94.40%	96.48%	98.25%
Day 15	EBO	15.76	35.27	62.41	94.9
Day 10	Availability	77.17%	82.76%	84.97%	86.07%
Day 10	NMCS	1.37	2.069	2.704	3.343
Day 10	NMCS Con	67.61%	80.27%	85.42%	0.8768
Day 10	EBO	12.04	25.7	42.73	64.23

Kit	F-15E 15 Day 12 Aircraft				
Cost	$23,950,362.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	65.83%	74.05%	76.84%	78.21%
Day 30	NMCS	2.05	3.113	4.168	5.23
Day 30	NMCS Con	48.88%	73.19%	78.76%	85.06%
Day 30	EBO	33.1	87.58	147.81	209.06
Day 25	Availability	68.65%	76.39%	79.11%	80.58%
Day 25	NMCS	1.881	2.832	3.76	4.684
Day 25	NMCS Con	56.75%	82.70%	87.32%	92.15%
Day 25	EBO	27	70.84	121.80	173.97
Day 20	Availability	71.70%	78.70%	81.41%	82.74%
Day 20	NMCS	1.697	2.555	3.347	4.142
Day 20	NMCS Con	65.55%	89.87%	93.20%	96.33%
Day 20	EBO	21.55	54.73	96.05	139.11
Day 15	Availability	74.81%	80.95%	83.60%	84.84%
Day 15	NMCS	1.511	2.286	2.952	3.638
Day 15	NMCS Con	74.66%	94.43%	96.48%	98.25%
Day 15	EBO	16.68	39.95	70.92	104.71
Day 10	Availability	77.24%	82.76%	84.96%	86.04%
Day 10	NMCS	1.365	2.069	2.707	3.349
Day 10	NMCS Con	67.98%	80.37%	85.31%	87.58%
Day 10	EBO	12.57	28.03	48.48	72.65

Kit	F-15E 10 Day12 Aircraft				
Cost	$23,954,713.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	65.85%	74.06%	76.84%	78.21%
Day 30	NMCS	2.048	3.113	4.168	5.23
Day 30	NMCS Con	48.93%	73.20%	78.77%	85.06%
Day 30	EBO	32.24	85.56	145.55	206.7
Day 25	Availability	68.67%	76.40%	79.11%	80.48%
Day 25	NMCS	1.88	2.832	3.76	4.684
Day 25	NMCS Con	56.81%	82.71%	87.32%	92.15%
Day 25	EBO	26.39	69.01	119.61	171.67
Day 20	Availability	71.72%	78.71%	81.41%	82.74%
Day 20	NMCS	1.696	2.555	3.346	4.142
Day 20	NMCS Con	65.61%	89.87%	93.20%	96.33%
Day 20	EBO	21.16	53.21	93.98	136.87
Day 15	Availability	74.83%	80.95%	83.60%	84.84%
Day 15	NMCS	1.51	2.285	2.952	3.638
Day 15	NMCS Con	74.71%	94.43%	96.48%	98.25%
Day 15	EBO	0.1647	38.86	69.11	102.59
Day 10	Availability	77.25%	82.77%	84.96%	86.04%
Day 10	NMCS	1.364	2.068	2.707	3.349
Day 10	NMCS Con	68.05%	80.37%	85.43%	87.67%
Day 10	EBO	12.47	27.44	47.19	70.86

Kit	F-15E 30 Day 15 Aircraft				
Cost	$24,473,727.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	65.78%	74.53%	77.50%	78.93%
Day 30	NMCS	23.053	3.056	4.049	5.056
Day 30	NMCS Con	48.65%	75.54%	81.59%	87.34%
Day 30	EBO	27.87	61.61	110.88	170.69
Day 25	Availability	68.46%	76.70%	79.60%	81.05%
Day 25	NMCS	1.892	2.795	3.671	4.548
Day 25	NMCS Con	56.17%	83.97%	88.80%	93.14%
Day 25	EBO	23.7	50.96	87.73	135.97
Day 20	Availability	71.41%	78.86%	81.74%	83.15%
Day 20	NMCS	1.715	2.536	3.286	4.044
Day 20	NMCS Con	64.66%	90.42%	93.82%	96.66%
Day 20	EBO	19.61	41.41	67.78	102.98
Day 15	Availability	74.47%	80.98%	83.77%	85.09%
Day 15	NMCS	1.532	2.282	2.920	3.578
Day 15	NMCS Con	73.62%	94.60%	96.67%	98.33%
Day 15	EBO	15.61	32.6	51.45	74.41
Day 10	Availability	76.94%	82.69%	85.00%	86.14%
Day 10	NMCS	1.383	2.077	2.699	3.327
Day 10	NMCS Con	65.99%	80.08%	85.34%	87.57%
Day 10	EBO	12.02	24.93	38.68	53.61

Kit	F-15E 25 Day 15 Aircraft				
Cost	$24,026,889.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	65.42%	74.09%	77.03%	78.45%
Day 30	NMCS	2.074	3.109	4.134	5.171
Day 30	NMCS Con	47.68%	73.52%	79.58%	85.69%
Day 30	EBO	29.1	66.8	121.51	182.83
Day 25	Availability	68.16%	76.36%	79.22%	80.66%
Day 25	NMCS	1.91	2.836	3.74	4.641
Day 25	NMCS Con	55.31%	82.70%	87.63%	92.33%
Day 25	EBO	24.69	54.41	96.52	147.52
Day 20	Availability	71.17%	78.61%	81.45%	82.85%
Day 20	NMCS	1.729	2.566	3.339	4.116
Day 20	NMCS Con	63.97%	89.74%	93.27%	96.36%
Day 20	EBO	20.39	43.64	73.82	113.04
Day 15	Availability	74.30%	80.80%	83.58%	84.88%
Day 15	NMCS	1.541	2.304	2.956	3.628
Day 15	NMCS Con	73.13%	94.31%	96.47%	98.25%
Day 15	EBO	16.2	34.07	54.81	81.3
Day 10	Availability	76.85%	82.58%	84.90%	86.03%
Day 10	NMCS	1.389	2.091	2.718	3.352
Day 10	NMCS Con	65.54%	79.62%	84.97%	87.31%
Day 10	EBO	12.43	25.89	40.44	56.87

Kit	F-15E 20 Day 15 Aircraft				
Cost	$23,948,460.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	65.30%	74.05%	77.00%	78.44%
Day 30	NMCS	2.082	3.114	4.139	5.175
Day 30	NMCS Con	47.33%	73.45%	79.55%	85.69%
Day 30	EBO	30.59	74.33	133.33	195.41
Day 25	Availability	68.04%	76.32%	79.19%	80.64%
Day 25	NMCS	1.917	2.841	3.745	4.646
Day 25	NMCS Con	54.95%	82.67%	87.62%	92.33%
Day 25	EBO	25.86	59.68	107.24	159.82
Day 20	Availability	71.07%	78.57%	81.42%	82.83%
Day 20	NMCS	1.736	2.571	3.344	4.12
Day 20	NMCS Con	63.65%	89.73%	93.26%	96.36%
Day 20	EBO	21.3	46.88	82.25	124.55
Day 15	Availability	74.23%	80.75%	83.55%	84.86%
Day 15	NMCS	1.546	2.309	2.96	3.632
Day 15	NMCS Con	72.91%	94.31%	96.47%	98.25%
Day 15	EBO	16.89	35.95	59.94	90.54
Day 10	Availability	76.81%	82.53%	84.88%	86.02%
Day 10	NMCS	1.391	2.095	2.72	3.354
Day 10	NMCS Con	65.31%	79.60%	84.97%	87.31%
Day 10	EBO	12.92	27.02	42.82	61.86

Kit	F-15E 15 Day 15 Aircraft				
Cost	$23,900,742.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	65.18%	73.92%	76.87%	78.30%
Day 30	NMCS	2.089	3.129	4.163	5.207
Day 30	NMCS Con	46.98%	73.01%	79.14%	85.45%
Day 30	EBO	32.16	82.88	143.94	206.27
Day 25	Availability	67.93%	76.23%	79.09%	80.53%
Day 25	NMCS	1.924	2.852	3.764	4.672
Day 25	NMCS Con	54.63%	82.47%	87.45%	92.27%
Day 25	EBO	26.84	66.46	117.44	170.58
Day 20	Availability	70.98%	78.51%	81.34%	82.75%
Day 20	NMCS	1.741	2.579	3.359	4.14
Day 20	NMCS Con	63.39%	89.66%	93.22%	96.35%
Day 20	EBO	21.92	51.33	91.36	135.05
Day 15	Availability	74.17%	80.70%	83.50%	84.81%
Day 15	NMCS	1.549	2.315	2.969	3.646
Day 15	NMCS Con	72.73%	94.30%	96.46%	98.25%
Day 15	EBO	17.29	38.22	66.58	100.08
Day 10	Availability	76.78%	82.50%	84.86%	86.00%
Day 10	NMCS	1.393	2.1	2.725	3.36
Day 10	NMCS Con	65.15%	79.54%	84.94%	0.873
Day 10	EBO	13.18	27.95	45.97	68.36

Kit	F-15E 10 Day 15 Aircraft				
Cost	$23,680,884.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.74%	72.66%	75.79%	77.36%
Day 30	NMCS	2.175	3.28	4.358	5.434
Day 30	NMCS Con	63.03%	81.22%	89.69%	93.51%
Day 30	EBO	35.53	90.89	152.7	215.19
Day 25	Availability	66.60%	75.14%	78.14%	79.70%
Day 25	NMCS	2.004	2.983	3.934	4.873
Day 25	NMCS Con	70.46%	88.04%	94.44%	96.93%
Day 25	EBO	29.37	73.72	126.03	179.42
Day 20	Availability	69.79%	77.61%	80.53%	82.04%
Day 20	NMCS	1.812	2.686	3.505	4.311
Day 20	NMCS Con	77.63%	93.12%	97.35%	98.74%
Day 20	EBO	23.76	57.31	99.57	143.76
Day 15	Availability	73.19%	80.00%	82.85%	84.24%
Day 15	NMCS	1.608	2.4	3.086	3.782
Day 15	NMCS Con	84.22%	96.37%	98.80%	99.49%
Day 15	EBO	18.62	42.41	73.78	108.44
Day 10	Availability	76.12%	81.98%	84.45%	85.64%
Day 10	NMCS	1.433	2.163	2.798	3.446
Day 10	NMCS Con	61.87%	76.93%	83.22%	86.20%
Day 10	EBO	14.11	30.38	50.98	75.49

Kit	F-15E 30 Day 18 Aircraft				
Cost	$23,951,191.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	62.63%	71.94%	75.25%	76.92%
Day 30	NMCS	2.242	3.367	4.454	5.539
Day 30	NMCS Con	40.61%	63.12%	70.99%	78.26%
Day 30	EBO	30.89	64.05	106.49	163.1
Day 25	Availability	65.35%	74.28%	77.47%	79.12%
Day 25	NMCS	2.078	3.086	4.055	5.01
Day 25	NMCS Con	47.79%	73.84%	80.56%	86.79%
Day 25	EBO	26.46	54.29	86.51	129.56
Day 20	Availability	68.37%	76.65%	79.72%	81.32%
Day 20	NMCS	1.897	2.802	3.65	4.482
Day 20	NMCS Con	56.15%	82.84%	88.04%	92.70%
Day 20	EBO	22.06	44.95	69.62	99.71
Day 15	Availability	71.54%	78.85%	81.82%	83.30%
Day 15	NMCS	1.707	2.537	3.272	4.006
Day 15	NMCS Con	65.25%	89.05%	92.67%	95.86%
Day 15	EBO	17.73	35.93	54.87	75.49
Day 10	Availability	73.90%	80.20%	82.83%	84.13%
Day 10	NMCS	1.566	2.375	3.089	3.808
Day 10	NMCS Con	53.29%	67.32%	73.79%	77.22%
Day 10	EBO	13.8	27.85	42.25	57.11

Kit	F-15E 25 Day 18 Aircraft				
Cost	$23,849,166.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	62.50%	71.85%	75.19%	76.87%
Day 30	NMCS	2.25	3.377	4.465	5.551
Day 30	NMCS Con	40.23%	62.77%	70.79%	78.19%
Day 30	EBO	31.31	66.39	114.99	175.04
Day 25	Availability	65.22%	74.21%	77.42%	79.08%
Day 25	NMCS	2.087	3.094	4.064	5.021
Day 25	NMCS Con	47.39%	73.61%	80.46%	86.76%
Day 25	EBO	26.79	55.66	92.14	140.07
Day 20	Availability	68.24%	76.59%	79.67%	81.29%
Day 20	NMCS	1.905	2.809	3.658	4.491
Day 20	NMCS Con	55.75%	82.71%	87.99%	92.70%
Day 20	EBO	22.32	45.77	72.55	107.18
Day 15	Availability	71.42%	78.80%	81.78%	83.28%
Day 15	NMCS	1.715	2.381	3.279	4.014
Day 15	NMCS Con	64.88%	67.13%	92.65%	95.86%
Day 15	EBO	17.92	28.17	56.19	79.11
Day 10	Availability	73.81%	80.16%	82.81%	84.11%
Day 10	NMCS	1.571	2.381	3.094	3.812
Day 10	NMCS Con	52.41%	67.13%	73.72%	77.20%
Day 10	EBO	13.94	28.17	42.88	58.39

Kit	F-15E 20 Day 18 Aircraft				
Cost	$23,431,281.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	62.98%	72.11%	75.31%	76.90%
Day 30	NMCS	2.221	3.347	4.444	5.544
Day 30	NMCS Con	41.43%	64.18%	71.45%	78.43%
Day 30	EBO	31.74	71.31	127.42	189.44
Day 25	Availability	65.69%	74.47%	77.56%	79.14%
Day 25	NMCS	2.058	3.063	4.04	5.006
Day 25	NMCS Con	48.65%	74.86%	81.07%	86.99%
Day 25	EBO	0.2707	58.38	101.96	153.78
Day 20	Availability	68.70%	76.83%	79.82%	81.37%
Day 20	NMCS	1.878	2.779	3.632	4.471
Day 20	NMCS Con	57.04%	83.64%	88.43%	92.84%
Day 20	EBO	22.48	47.09	78.59	118.81
Day 15	Availability	71.84%	79.01%	81.93%	83.37%
Day 15	NMCS	1.689	2.518	3.253	3.991
Day 15	NMCS Con	66.1%	89.54%	92.88%	95.92%
Day 15	EBO	18	37.05	58.8	86.31
Day 10	Availability	74.12%	80.33%	82.92%	84.19%
Day 10	NMCS	1.552	2.36	3.074	3.794
Day 10	NMCS Con	53.93%	68.14%	74.27%	77.48%
Day 10	EBO	13.95	28.43	43.73	60.88

Kit	F-15E 15 Day 18 Aircraft				
Cost	$23,311,711.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	62.82%	71.99%	75.19%	76.79%
Day 30	NMCS	2.23	3.361	4.465	5.57
Day 30	NMCS Con	40.97%	63.73%	71.07%	78.20%
Day 30	EBO	33.99	81.23	142	204.89
Day 25	Availability	65.53%	74.37%	77.46%	79.05%
Day 25	NMCS	2.068	3.075	4.056	5.028
Day 25	NMCS Con	17.34%	74.65%	80.90%	86.92%
Day 25	EBO	28.83	65.65	115.36	168.88
Day 20	Availability	68.55%	76.76%	79.75%	81.30%
Day 20	NMCS	1.886	2.788	3.645	4.487
Day 20	NMCS Con	56.61%	83.57%	88.38%	92.83%
Day 20	EBO	23.85	51.77	89.52	133.05
Day 15	Availability	71.73%	78.96%	81.88%	83.32%
Day 15	NMCS	1.696	2.525	3.262	4.002
Day 15	NMCS Con	65.78%	89.52%	92.87%	95.92%
Day 15	EBO	19.04	39.85	65.89	98.13
Day 10	Availability	74.07%	80.28%	82.90%	84.17%
Day 10	NMCS	1.556	2.366	3.078	3.799
Day 10	NMCS Con	53.61%	68.07%	74.25%	77.47%
Day 10	EBO	14.69	30.14	47.25	67.8

Kit	F-15E 10 Day 18 Aircraft				
Cost	$23,300,355.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	62.82%	71.99%	75.19%	76.79%
Day 30	NMCS	2.23	3.361	4.465	5.57
Day 30	NMCS Con	99.64%	63.73%	71.07%	78.20%
Day 30	EBO	36.52	92.36	154.84	217.87
Day 25	Availability	65.53%	74.37%	77.46%	79.05%
Day 25	NMCS	2.068	3.075	4.056	5.028
Day 25	NMCS Con	99.79%	74.65%	80.90%	86.92%
Day 25	EBO	30.33	75.01	127.91	181.81
Day 20	Availability	68.55%	76.76%	79.75%	81.30%
Day 20	NMCS	1.886	2.788	3.645	4.487
Day 20	NMCS Con	99.88%	83.57%	88.38%	92.83%
Day 20	EBO	24.67	58.47	101.15	145.82
Day 15	Availability	71.73%	78.96%	81.88%	83.32%
Day 15	NMCS	1.696	2.525	3.262	4.002
Day 15	NMCS Con	99.93%	89.52%	92.87%	95.92%
Day 15	EBO	0.1945	43.52	75.11	110.13
Day 10	Availability	74.07%	80.28%	82.90%	84.17%
Day 10	NMCS	1.556	2.366	3.078	3.799
Day 10	NMCS Con	53.61%	68.07%	74.25%	77.47%
Day 10	EBO	14.89	31.53	52.21	76.87

Kit	F-15E 30 Day 20 Aircraft				
Cost	$24,391,726.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	62.09%	71.55%	75.00%	76.76%
Day 30	NMCS	2.274	3.414	4.5	5.577
Day 30	NMCS Con	39.35%	61.19%	69.75%	77.52%
Day 30	EBO	30.24	62.23	100.11	151.99
Day 25	Availability	64.84%	73.89%	77.19%	78.93%
Day 25	NMCS	2.109	3.133	4.105	5.057
Day 25	NMCS Con	46.49%	72.07%	79.39%	86.08%
Day 25	EBO	25.92	52.96	82.67	120.74
Day 20	Availability	67.89%	76.28%	79.42%	81.10%
Day 20	NMCS	1.962	2.846	3.703	4.536
Day 20	NMCS Con	54.85%	81.39%	87.06%	92.11%
Day 20	EBO	21.62	43.94	67.47	94.33
Day 15	Availability	71.11%	78.52%	81.52%	83.06%
Day 15	NMCS	1.733	2.577	3.326	4.066
Day 15	NMCS Con	64.04%	88.01%	91.94%	95.41%
Day 15	EBO	17.37	35.16	53.54	72.95
Day 10	Availability	73.59%	79.94%	82.59%	83.90%
Day 10	NMCS	1.584	2.406	3.134	3.863
Day 10	NMCS Con	51.60%	65.56%	72.23%	75.86%
Day 10	EBO	13.51	27.26	41.32	55.75

Kit	F-15E 25 Day 20 Aircraft				
Cost	$23,814,710.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	61.55%	70.86%	72.24%	75.96%
Day 30	NMCS	2.306	3.496	4.636	5.796
Day 30	NMCS Con	38.15%	58.11%	66.09%	73.31%
Day 30	EBO	31.6	65.83	110.89	169.28
Day 25	Availability	64.38%	73.33%	76.56%	78.25%
Day 25	NMCS	2.137	3.2	4.219	5.22
Day 25	NMCS Con	45.37%	69.57%	76.51%	82.99%
Day 25	EBO	27.06	55.63	89.64	134.93
Day 20	Availability	67.52%	75.85%	78.92%	80.55%
Day 20	NMCS	1.949	2.898	3.794	4.667
Day 20	NMCS Con	53.87%	79.65%	85.09%	90.17%
Day 20	EBO	22.56	45.97	71.62	103.62
Day 15	Availability	70.84%	78.23%	81.16%	82.66%
Day 15	NMCS	1.749	2.613	3.39	4.162
Day 15	NMCS Con	63.29%	87.03%	90.83%	94.39%
Day 15	EBO	18.11	36.69	56.14	77.75
Day 10	Availability	73.45%	79.82%	82.45%	83.73%
Day 10	NMCS	1.592	2.422	3.159	3.904
Day 10	NMCS Con	50.98%	64.96%	71.46%	0.7487
Day 10	EBO	14.05	28.34	43.01	58.24

Kit	F-15E 20 Day 20 Aircraft				
Cost	$23,803,971.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	61.55%	70.86%	74.24%	75.96%
Day 30	NMCS	2.306	3.496	4.636	5.769
Day 30	NMCS Con	38.15%	58.11%	66.09%	73.31%
Day 30	EBO	31.69	68.06	119.9	180.88
Day 25	Availability	64.38%	73.33%	76.56%	78.25%
Day 25	NMCS	2.137	3.2	4.219	5.22
Day 25	NMCS Con	45.37%	69.57%	76.51%	82.99%
Day 25	EBO	27.11	56.6	95.8	145.59
Day 20	Availability	67.52%	75.85%	78.92%	80.55%
Day 20	NMCS	1.949	2.898	3.794	4.667
Day 20	NMCS Con	53.87%	79.65%	85.09%	90.17%
Day 20	EBO	22.58	46.34	74.6	111.67
Day 15	Availability	70.84%	78.23%	81.16%	82.66%
Day 15	NMCS	1.749	2.613	3.39	4.162
Day 15	NMCS Con	63.29%	87.03%	90.83%	94.39%
Day 15	EBO	18.12	36.82	57.06	81.6
Day 10	Availability	73.45%	79.82%	82.45%	83.73%
Day 10	NMCS	1.592	2.422	3.159	3.904
Day 10	NMCS Con	50.98%	64.96%	71.46%	74.87%
Day 10	EBO	14.05	28.39	43.22	59.11

Kit	F-15E 15 Day 20 Aircraft				
Cost	$23,324,754.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	61.67%	71.13%	74.59%	76.36%
Day 30	NMCS	2.299	3.464	4.573	5.673
Day 30	NMCS Con	38.20%	59.16%	67.88%	75.98%
Day 30	EBO	33.55	77.04	136	198.64
Day 25	Availability	64.45%	73.56%	76.87%	78.60%
Day 25	NMCS	2.133	3.173	4.164	5.135
Day 25	NMCS Con	45.38%	70.72%	78.26%	85.31%
Day 25	EBO	28.57	62.71	109.75	162.73
Day 20	Availability	67.53%	76.02%	79.17%	80.85%
Day 20	NMCS	1.948	2.877	3.749	4.596
Day 20	NMCS Con	53.82%	80.64%	86.50%	91.81%
Day 20	EBO	23.69	50.14	84.88	127.15
Day 15	Availability	70.83%	78.33%	81.34%	82.88%
Day 15	NMCS	1.75	2.6	3.359	4.107
Day 15	NMCS Con	63.21%	87.68%	91.73%	95.33%
Day 15	EBO	18.94	39.15	63.02	93.1
Day 10	Availability	73.41%	79.81%	82.49%	83.82%
Day 10	NMCS	1.595	2.422	3.151	3.883
Day 10	NMCS Con	50.68%	64.98%	71.85%	0.7561
Day 10	EBO	14.61	29.83	46.15	64.96

Kit	F-15E 10 Day 20 Aircraft				
Cost	$23,242,781.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	61.58%	71.05%	74.51%	76.27%
Day 30	NMCS	2.305	3.473	4.588	5.694
Day 30	NMCS Con	28.50%	44.70%	55.65%	61.21%
Day 30	EBO	35.62	88.19	150.34	213.39
Day 25	Availability	64.36%	73.49%	76.80%	78.54%
Day 25	NMCS	2.138	3.18	4.176	5.151
Day 25	NMCS Con	35.36%	56.08%	69.15%	74.25%
Day 25	EBO	29.95	71.35	123.44	177.32
Day 20	Availability	67.45%	75.98%	79.12%	80.80%
Day 20	NMCS	1.953	2.882	3.759	4.608
Day 20	NMCS Con	44.24%	67.51%	80.39%	84.46%
Day 20	EBO	24.64	55.73	96.86	141.32
Day 15	Availability	70.76%	78.30%	81.30%	82.85%
Day 15	NMCS	1.754	2.604	3.365	4.115
Day 15	NMCS Con	54.92%	77.33%	87.84%	90.67%
Day 15	EBO	19.6	42.06	71.47	105.75
Day 10	Availability	73.38%	79.79%	82.48%	83.80%
Day 10	NMCS	1.597	2.425	3.153	3.887
Day 10	NMCS Con	50.48%	64.93%	71.83%	75.60%
Day 10	EBO	15.08	31.15	50.12	73.23

Kit	F-15E 30 Day 24 Aircraft				
Cost	$24,971,138.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	61.39%	70.69%	74.15%	75.94%
Day 30	NMCS	2.316	3.517	4.653	5.775
Day 30	NMCS Con	38.21%	57.44%	65.46%	72.68%
Day 30	EBO	29.1	59.32	912.2	134.08
Day 25	Availability	64.27%	73.13%	76.42%	78.18%
Day 25	NMCS	2.143	3.224	4.244	5.239
Day 25	NMCS Con	45.45%	68.43%	75.47%	82.06%
Day 25	EBO	24.97	50.67	77.77	108.71
Day 20	Availability	67.46%	75.64%	78.75%	80.42%
Day 20	NMCS	1.952	2.923	3.824	4.699
Day 20	NMCS Con	53.97%	78.32%	83.93%	89.23%
Day 20	EBO	20.85	42.15	64.22	87.72
Day 15	Availability	70.81%	78.03%	80.96%	82.48%
Day 15	NMCS	1.751	2.636	3.426	4.205
Day 15	NMCS Con	63.38%	85.82%	89.78%	93.60%
Day 15	EBO	16.77	33.81	51.26	69.3
Day 10	Availability	73.48%	79.71%	82.27%	83.54%
Day 10	NMCS	1.591	2.434	3.191	3.95
Day 10	NMCS Con	51.65%	64.26%	70.19%	73.56%
Day 10	EBO	13.05	26.27	39.71	53.42

Kit	F-15E 25 Day 24 Aircraft				
Cost	$24,539,425.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	59.33%	69.01%	72.66%	74.57%
Day 30	NMCS	2.44	3.719	4.92	6.103
Day 30	NMCS Con	34.34%	50.70%	58.65%	65.48%
Day 30	EBO	30.56	62.37	99.32	149.91
Day 25	Availability	62.36%	71.59%	75.07%	76.92%
Day 25	NMCS	2.258	3.409	4.488	5.539
Day 25	NMCS Con	41.40%	61.95%	69.29%	75.98%
Day 25	EBO	26.24	53.19	82.41	119.32
Day 20	Availability	65.73%	74.26%	77.53%	79.30%
Day 20	NMCS	2.056	3.089	4.044	4.968
Day 20	NMCS Con	49.89%	72.64%	78.82%	84.68%
Day 20	EBO	21.91	44.22	67.52	93.73
Day 15	Availability	69.35%	76.85%	79.89%	81.49%
Day 15	NMCS	1.838	2.778	3.619	4.441
Day 15	NMCS Con	59.65%	81.40%	85.98%	90.52%
Day 15	EBO	17.61	35.44	53.72	72.88
Day 10	Availability	72.60%	78.91%	81.50%	82.80%
Day 10	NMCS	1.644	2.531	3.33	4.127
Day 10	NMCS Con	48.57%	60.40%	65.92%	69.14%
Day 10	EBO	13.63	27.43	41.46	55.79

Kit	F-15E 20 Day 24 Aircraft				
Cost	$23,800,359.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	61.00%	70.44%	73.94%	75.74%
Day 30	NMCS	2.34	3.546	4.69	5.823
Day 30	NMCS Con	37.09%	56.30%	64.62%	72.06%
Day 30	EBO	31.7	65.95	111	169.38
Day 25	Availability	63.87%	72.92%	76.25%	78.01%
Day 25	NMCS	2.167	3.25	4.275	5.278
Day 25	NMCS Con	44.27%	67.70%	75.01%	81.79%
Day 25	EBO	27.15	55.74	89.75	135.04
Day 20	Availability	67.05%	75.45%	78.60%	80.29%
Day 20	NMCS	1.976	2.945	3.851	4.729
Day 20	NMCS Con	52.77%	77.92%	83.72%	89.14%
Day 20	EBO	22.64	46.08	71.74	103.73
Day 15	Availability	70.45%	77.87%	80.85%	82.38%
Day 15	NMCS	1.773	2.655	3.447	4.228
Day 15	NMCS Con	62.30%	85.65%	89.71%	93.58%
Day 15	EBO	18.17	36.79	56.25	77.86
Day 10	Availability	73.22%	79.58%	82.20%	83.49%
Day 10	NMCS	1.606	2.45	3.204	3.963
Day 10	NMCS Con	50.25%	63.73%	69.99%	73.48%
Day 10	EBO	14.08	28.4	43.09	58.34

Kit	F-15E 15 Day 24 Aircraft				
Cost	$23,347,087.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	60.77%	70.16%	73.64%	75.44%
Day 30	NMCS	2.354	3.58	4.744	5.894
Day 30	NMCS Con	36.51%	54.80%	63.10%	70.70%
Day 30	EBO	32.72	71.62	126.45	188.4
Day 25	Availability	63.68%	72.69%	76.01%	77.77%
Day 25	NMCS	2.179	3.277	4.318	5.335
Day 25	NMCS Con	43.75%	66.67%	74.06%	81.08%
Day 25	EBO	27.95	59.17	101.33	152.71
Day 20	Availability	66.90%	75.29%	78.42%	80.11%
Day 20	NMCS	1.986	2.965	3.884	4.773
Day 20	NMCS Con	52.33%	77.34%	83.24%	88.86%
Day 20	EBO	23.24	48.13	78.64	117.9
Day 15	Availability	70.34%	77.76%	80.72%	82.26%
Day 15	NMCS	1.779	2.668	3.47	4.258
Day 15	NMCS Con	61.96%	85.39%	89.52%	93.50%
Day 15	EBO	18.6	38.05	59.57	86.1
Day 10	Availability	73.16%	79.51%	82.13%	83.42%
Day 10	NMCS	1.61	2.458	3.216	3.978
Day 10	NMCS Con	49.93%	63.37%	69.69%	73.26%
Day 10	EBO	14.37	29.17	44.65	61.55

Kit	F-15E 10 Day 24 Aircraft				
Cost	$23,224,362.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	60.65%	70.07%	73.55%	75.36%
Day 30	NMCS	2.361	3.592	4.76	5.914
Day 30	NMCS Con	13.75%	21.77%	27.88%	32.05%
Day 30	EBO	35.07	83.52	144.79	207.83
Day 25	Availability	63.55%	72.62%	75.94%	77.70%
Day 25	NMCS	2.186	3.286	4.33	5.351
Day 25	NMCS Con	19.91%	32.09%	41.01%	47.10%
Day 25	EBO	29.75	67.62	118	171.74
Day 20	Availability	66.78%	75.23%	78.37%	80.06%
Day 20	NMCS	1.993	2.972	3.893	4.785
Day 20	NMCS Con	29.18%	45.27%	55.82%	62.61%
Day 20	EBO	24.62	53.36	91.89	135.77
Day 15	Availability	70.24%	77.72%	80.68%	82.22%
Day 15	NMCS	1.785	2.674	3.477	4.266
Day 15	NMCS Con	41.66%	59.37%	69.20%	75.00%
Day 15	EBO	0.1964	41.04	67.8	100.56
Day 10	Availability	73.11%	79.47%	82.11%	83.41%
Day 10	NMCS	1.613	2.463	3.219	3.982
Day 10	NMCS Con	49.64%	63.31%	69.67%	073.25%
Day 10	EBO	15.11	30.91	48.47	69.55

Kit	F-16C 30 Day 6 Aircraft				
Cost	$6,203,831.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	75.19%	72.00%	64.78%	59.50%
Day 30	NMCS	1.488	3.36	6.339	9.721
Day 30	NMCS Con	75.90%	61.43%	29.36%	10.56%
Day 30	EBO	6.34	29.02	59.81	93.24
Day 25	Availability	77.43%	76.95%	71.39%	66.58%
Day 25	NMCS	1.354	2.766	5.149	8.02
Day 25	NMCS Con	82.01%	78.22%	51.24%	27.92%
Day 25	EBO	4.92	22.08	47.95	76.36
Day 20	Availability	79.44%	81.21%	77.54%	73.50%
Day 20	NMCS	1.233	2.254	4.043	6.36
Day 20	NMCS Con	87.10%	90.27%	74.42%	55.67%
Day 20	EBO	3.79	15.74	36.52	60.01
Day 15	Availability	81.41%	84.76%	82.95%	80.05%
Day 15	NMCS	1.115	1.829	3.068	4.788
Day 15	NMCS Con	91.25%	96.65%	91.10%	82.98%
Day 15	EBO	2.89	10.39	25.67	44.28
Day 10	Availability	83.62%	87.59%	87.51%	86.00%
Day 10	NMCS	0.983	1.488	2.248	3.36
Day 10	NMCS Con	89.88%	93.36%	90.38%	81.51%
Day 10	EBO	2.11	6.34	15.67	29.02

Kit	F-16C 25 Day 6 Aircraft				
Cost	$6,196,277.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	74.44%	69.46%	62.26%	57.45%
Day 30	NMCS	1.533	3.665	6.792	10.212
Day 30	NMCS Con	73.87%	52.46%	22.41%	7.27%
Day 30	EBO	6.61	29.96	60.81	94.24
Day 25	Availability	77.01%	74.94%	69.07%	64.59%
Day 25	NMCS	1.379	3.007	5.566	8.499
Day 25	NMCS Con	80.87%	71.03%	42.50%	21.31%
Day 25	EBO	5.08	22.94	48.95	77.36
Day 20	Availability	79.24%	79.79%	75.54%	71.61%
Day 20	NMCS	1.245	2.425	4.403	6.813
Day 20	NMCS Con	86.59%	86.06%	66.70%	47.06%
Day 20	EBO	3.88	16.46	37.49	61.01
Day 15	Availability	81.33%	83.90%	81.42%	78.38%
Day 15	NMCS	1.12	1.932	3.344	5.189
Day 15	NMCS Con	91.08%	95.04%	86.86%	76.76%
Day 15	EBO	2.92	10.91	26.57	45.27
Day 10	Availability	83.59%	87.22%	86.56%	84.73%
Day 10	NMCS	0.984	1.533	2.418	3.665
Day 10	NMCS Con	89.82%	92.05%	86.21%	74.60%
Day 10	EBO	2.12	6.61	16.39	29.96

* ASM calculated an MRSP identical to the one above for all other F-16C 6 aircraft MRSPs.

Kit	F-16C 30 Day 12 Aircraft				
Cost	$4,400,952.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	66.71%	75.08%	74.85%	70.48%
Day 30	NMCS	1.997	2.99	4.526	7.083
Day 30	NMCS Con	51.28%	77.49%	68.32%	45.03%
Day 30	EBO	19.22	43.47	80.1	120.75
Day 25	Availability	69.06%	77.26%	78.67%	76.26%
Day 25	NMCS	1.856	2.729	3.838	5.698
Day 25	NMCS Con	57.88%	85.82%	84.37%	71.39%
Day 25	EBO	16.72	36.28	65.52	100.4
Day 20	Availability	71.58%	79.24%	81.69%	81.09%
Day 20	NMCS	1.705	2.491	3.295	4.539
Day 20	NMCS Con	65.13%	91.61%	93.65%	90.44%
Day 20	EBO	14.24	30.04	51.86	80.34
Day 15	Availability	74.22%	81.19%	84.10%	84.78%
Day 15	NMCS	1.546	2.257	2.862	3.652
Day 15	NMCS Con	72.86%	95.49%	97.66%	98.19%
Day 15	EBO	11.8	24.51	39.93	61.06
Day 10	Availability	76.94%	83.36%	86.18%	87.54%
Day 10	NMCS	1.383	1.997	2.488	2.99
Day 10	NMCS Con	64.35%	83.53%	91.67%	0.9467
Day 10	EBO	9.33	19.23	29.97	43.47

Kit	F-16C 25 Day 12 Aircraft				
Cost	$4,375,542.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	66.68%	73.60%	70.54%	65.27%
Day 30	NMCS	1.999	3.168	5.303	8.336
Day 30	NMCS Con	51.19%	70.59%	49.43%	24.84%
Day 30	EBO	19.3	47.06	85.93	126.75
Day 25	Availability	69.05%	76.52%	75.71%	71.85%
Day 25	NMCS	1.857	2.817	4.372	6.756
Day 25	NMCS Con	57.85%	82.72%	71.18%	50.12%
Day 25	EBO	16.74	38.63	70.99	106.37
Day 20	Availability	71.58%	78.95%	80.00%	77.83%
Day 20	NMCS	1.705	2.525	3.6	5.319
Day 20	NMCS Con	65.12%	90.69%	87.73%	77.23%
Day 20	EBO	14.25	31.22	56.47	86.18
Day 15	Availability	74.22%	81.11%	83.37%	82.87%
Day 15	NMCS	1.546	2.267	2.993	4.11
Day 15	NMCS Con	72.86%	95.33%	96.20%	94.14%
Day 15	EBO	11.8	24.91	42.95	66.33
Day 10	Availability	76.94%	83.34%	85.99%	86.80%
Day 10	NMCS	1.383	1.999	2.522	3.168
Day 10	NMCS Con	64.35%	83.46%	90.76%	91.09%
Day 10	EBO	9.33	19.3	31.14	47.06

Kit	F-16C 20 Day 12 Aircraft				
Cost	$4,331,003.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	66.75%	72.52%	68.59%	63.35%
Day 30	NMCS	1.994	3.297	5.653	8.796
Day 30	NMCS Con	51.51%	65.37%	41.67%	19.02%
Day 30	EBO	18.29	47.35	85.93	126.06
Day 25	Availability	69.19%	75.87%	74.17%	70.10%
Day 25	NMCS	1.848	2.896	4.648	7.176
Day 25	NMCS Con	58.33%	79.52%	64.25%	42.16%
Day 25	EBO	0.1579	38.62	71.24	106.02
Day 20	Availability	71.75%	78.63%	78.95%	76.37%
Day 20	NMCS	1.695	2.564	3.789	5.671
Day 20	NMCS Con	65.67%	89.20%	83.61%	70.64%
Day 20	EBO	13.4	30.76	56.84	86.18
Day 15	Availability	74.39%	81.01%	82.79%	81.84%
Day 15	NMCS	1.536	2.278	3.097	4.359
Day 15	NMCS Con	73.39%	94.78%	94.74%	91.35%
Day 15	EBO	11.08	24.03	43.12	66.64
Day 10	Availability	77.08%	83.38%	85.78%	86.26%
Day 10	NMCS	1.375	1.994	2.56	3.297
Day 10	NMCS Con	65.30%	82.96%	89.29%	88.03%
Day 10	EBO	8.75	18.29	30.66	47.35

Kit	F-16C 15 Day 12 Aircraft				
Cost	$4,328,256.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	66.75%	72.52%	68.59%	63.35%
Day 30	NMCS	1.994	3.297	5.653	8.796
Day 30	NMCS Con	51.51%	65.37%	41.67%	19.02%
Day 30	EBO	18.71	50.18	88.93	129.06
Day 25	Availability	69.19%	75.87%	74.17%	70.10%
Day 25	NMCS	1.848	2.896	4.648	7.176
Day 25	NMCS Con	58.33%	79.52%	64.25%	42.16%
Day 25	EBO	15.98	41.15	74.24	109.02
Day 20	Availability	71.75%	78.63%	78.95%	76.37%
Day 20	NMCS	1.695	2.564	3.789	5.671
Day 20	NMCS Con	65.67%	89.20%	83.61%	70.64%
Day 20	EBO	13.47	32.72	59.79	89.18
Day 15	Availability	74.39%	81.01%	82.79%	81.84%
Day 15	NMCS	1.536	2.278	3.097	4.359
Day 15	NMCS Con	73.39%	94.78%	94.74%	91.35%
Day 15	EBO	11.1	25.2	45.83	69.63
Day 10	Availability	77.08%	83.38%	85.78%	86.26%
Day 10	NMCS	1.375	1.994	2.56	3.297
Day 10	NMCS Con	65.30%	82.96%	89.29%	88.03%
Day 10	EBO	8.75	18.71	32.62	50.18

Kit	F-16C 10 Day 12 Aircraft					
Cost	$4,304,802.00					
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	66.73%	72.51%	68.59%	63.35%
Day 30	NMCS	1.996	3.298	5.653	8.796
Day 30	NMCS Con	51.43%	65.37%	41.67%	19.02%
Day 30	EBO	19.96	52.95	91.84	132.02
Day 25	Availability	69.16%	75.86%	74.17%	70.10%
Day 25	NMCS	1.85	2.896	4.649	7.177
Day 25	NMCS Con	58.25%	79.52%	64.25%	42.16%
Day 25	EBO	16.9	43.82	77.12	111.96
Day 20	Availability	71.73%	78.62%	78.95%	76.37%
Day 20	NMCS	1.696	2.565	3.789	5.671
Day 20	NMCS Con	65.61%	89.20%	83.61%	70.64%
Day 20	EBO	14.12	35.14	62.62	92.09
Day 15	Availability	74.38%	81.00%	82.79%	81.84%
Day 15	NMCS	1.537	2.28	3.098	4.359
Day 15	NMCS Con	73.34%	94.78%	94.74%	91.35%
Day 15	EBO	11.56	27.15	48.57	72.5
Day 10	Availability	77.07%	83.36%	85.77%	86.26%
Day 10	NMCS	1.375	1.996	2.561	3.298
Day 10	NMCS Con	65.26%	82.95%	89.29%	88.03%
Day 10	EBO	9.1	19.97	35.04	52.95

Kit	F-16C 30 Day 15 Aircraft				
Cost	$4,372,417.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.99%	73.74%	75.72%	73.06%
Day 30	NMCS	2.16	3.15	4.371	6.466
Day 30	NMCS Con	43.56%	72.26%	73.46%	57.74%
Day 30	EBO	23.31	48.08	82.09	123.79
Day 25	Availability	66.32%	75.80%	78.65%	77.93%
Day 25	NMCS	2.02	2.903	3.843	5.297
Day 25	NMCS Con	49.94%	81.42%	86.26%	81.07%
Day 25	EBO	20.37	41.52	67.93	102.75
Day 20	Availability	68.90%	77.82%	81.03%	81.75%
Day 20	NMCS	1.866	2.661	3.414	4.38
Day 20	NMCS Con	57.24%	88.54%	93.54%	94.46%
Day 20	EBO	17.45	35.35	55.49	82.34
Day 15	Availability	71.75%	79.83%	83.15%	84.59%
Day 15	NMCS	1.695	2.42	3.032	3.699
Day 15	NMCS Con	65.52%	93.71%	97.17%	98.88%
Day 15	EBO	14.53	29.37	44.9	63.78
Day 10	Availability	74.89%	81.99%	85.23%	86.87%
Day 10	NMCS	1.506	2.16	2.658	3.15
Day 10	NMCS Con	53.29%	77.15%	88.62%	93.76%
Day 10	EBO	11.56	23.31	35.28	48.08

Kit	F-16C 25 Day 15 Aircraft				
Cost	$4,281,950.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.98%	73.48%	74.09%	70.25%
Day 30	NMCS	2.161	3.182	4.663	7.14
Day 30	NMCS Con	43.55%	70.89%	65.43%	44.23%
Day 30	EBO	23.86	50.66	88.86	131.42
Day 25	Availability	66.32%	75.70%	77.75%	75.87%
Day 25	NMCS	2.021	2.915	4.005	5.791
Day 25	NMCS Con	49.93%	80.97%	82.12%	70.75%
Day 25	EBO	20.85	43.13	73.56	110.17
Day 20	Availability	68.90%	77.80%	80.65%	80.52%
Day 20	NMCS	1.866	2.664	3.483	4.676
Day 20	NMCS Con	57.24%	88.45%	92.25%	90.09%
Day 20	EBO	17.85	36.38	59.34	89.12
Day 15	Availability	71.75%	79.83%	83.04%	84.05%
Day 15	NMCS	1.695	2.42	3.053	3.827
Day 15	NMCS Con	65.52%	93.70%	96.97%	98.05%
Day 15	EBO	14.87	30.1	46.97	68.9
Day 10	Availability	74.89%	81.99%	85.21%	86.74%
Day 10	NMCS	1.506	2.161	2.661	3.182
Day 10	NMCS Con	53.29%	77.14%	88.53%	93.15%
Day 10	EBO	11.82	23.86	36.3	50.66

Kit	F-16C 20 Day 15 Aircraft				
Cost	$4,232,778.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.96%	72.80%	71.64%	66.96%
Day 30	NMCS	2.162	3.263	5.105	7.93
Day 30	NMCS Con	43.47%	67.49%	54.10%	30.63%
Day 30	EBO	24.25	53.72	94.42	137.26
Day 25	Availability	66.29%	75.39%	76.17%	73.20%
Day 25	NMCS	2.022	2.953	4.289	6.432
Day 25	NMCS Con	49.86%	79.53%	74.62%	57.22%
Day 25	EBO	21.19	45.1	78.66	115.94
Day 20	Availability	68.87%	77.68%	79.82%	78.67%
Day 20	NMCS	1.867	2.678	3.631	5.12
Day 20	NMCS Con	57.17%	88.06%	89.14%	82.34%
Day 20	EBO	18.14	37.48	63.44	94.68
Day 15	Availability	71.73%	79.80%	82.72%	83.06%
Day 15	NMCS	1.696	2.424	3.111	4.064
Day 15	NMCS Con	65.46%	93.64%	96.27%	95.92%
Day 15	EBO	15.12	30.7	49.51	73.75
Day 10	Availability	74.87%	81.98%	85.14%	86.40%
Day 10	NMCS	1.507	2.162	2.674	3.263
Day 10	NMCS Con	53.20%	77.11%	88.14%	91.38%
Day 10	EBO	12.02	24.25	37.39	53.72

Kit	F-16C 15 Day 15 Aircraft				
Cost	$4,076,302.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.39%	69.96%	66.23%	61.35%
Day 30	NMCS	2.196	3.605	6.078	9.275
Day 30	NMCS Con	41.97%	54.09%	32.94%	13.89%
Day 30	EBO	24.97	59.7	102.19	145.16
Day 25	Availability	65.81%	73.62%	72.02%	68.18%
Day 25	NMCS	2.051	3.165	5.036	7.636
Day 25	NMCS Con	48.51%	71.11%	55.39%	34.20%
Day 25	EBO	21.7	49.72	86.2	123.8
Day 20	Availability	68.43%	76.70%	77.05%	74.60%
Day 20	NMCS	1.894	2.795	4.13	6.097
Day 20	NMCS Con	55.91%	84.21%	77.44%	62.98%
Day 20	EBO	18.54	40.48	70.33	102.45
Day 15	Availability	71.33%	79.30%	81.18%	80.28%
Day 15	NMCS	1.72	2.484	3.387	4.732
Day 15	NMCS Con	64.29%	92.36%	92.07%	87.47%
Day 15	EBO	15.43	32.28	54.89	81.16
Day 10	Availability	74.53%	81.69%	84.49%	84.98%
Day 10	NMCS	1.528	2.196	2.791	3.605
Day 10	NMCS Con	51.49%	75.27%	84.34%	82.76%
Day 10	EBO	12.28	24.97	40.37	59.7

Kit	F-16C 10 Day 15 Aircraft				
Cost	$4,068,744.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.62%	68.67%	64.13%	59.39%
Day 30	NMCS	2.182	3.76	6.457	9.746
Day 30	NMCS Con	42.63%	49.00%	26.51%	10.02%
Day 30	EBO	25.13	62.74	105.37	148.27
Day 25	Availability	66.12%	72.84%	70.30%	66.35%
Day 25	NMCS	2.033	3.259	5.345	8.075
Day 25	NMCS Con	49.38%	67.40%	47.96%	27.15%
Day 25	EBO	21.6	52.41	89.42	126.94
Day 20	Availability	68.78%	76.36%	75.82%	73.01%
Day 20	NMCS	1.873	2.836	4.352	6.476
Day 20	NMCS Con	56.90%	82.44%	71.60%	54.96%
Day 20	EBO	18.31	42.48	73.52	105.64
Day 15	Availability	71.67%	79.25%	80.49%	79.10%
Day 15	NMCS	1.699	2.489	3.512	5.016
Day 15	NMCS Con	65.30%	91.97%	89.35%	82.58%
Day 15	EBO	15.17	33.33	57.8	84.37
Day 10	Availability	74.84%	81.81%	84.27%	84.33%
Day 10	NMCS	1.509	2.182	2.832	3.76
Day 10	NMCS Con	53.02%	75.99%	82.59%	78.01%
Day 10	EBO	12.04	25.14	42.36	62.74

Kit	F-16C 30 Day 18 Aircraft					
Cost	$4,557,697.00					
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	64.35%	74.08%	77.13%	76.27%
Day 30	NMCS	2.138	3.11	4.116	5.695
Day 30	NMCS Con	44.59%	73.80%	80.34%	74.39%
Day 30	EBO	22.67	46.37	75.22	114.4
Day 25	Availability	66.69%	76.05%	79.37%	80.00%
Day 25	NMCS	1.998	2.873	3.713	4.799
Day 25	NMCS Con	51.01%	82.25%	89.03%	90.34%
Day 25	EBO	19.8	40.34	63.18	94.05
Day 20	Availability	69.27%	78.03%	81.38%	82.82%
Day 20	NMCS	1.843	2.636	3.351	4.123
Day 20	NMCS Con	58.34%	89.01%	94.26%	97.20%
Day 20	EBO	16.95	34.43	52.81	75.43
Day 15	Availability	72.10%	80.02%	83.34%	85.02%
Day 15	NMCS	1.673	2.397	2.998	3.596
Day 15	NMCS Con	66.58%	93.96%	97.31%	99.24%
Day 15	EBO	14.11	28.6	43.48	59.74
Day 10	Availability	75.19%	82.18%	85.37%	87.04%
Day 10	NMCS	1.488	2.139	2.633	3.11
Day 10	NMCS Con	54.93%	78.13%	89.09%	94.16%
Day 10	EBO	11.21	22.67	34.36	46.37

Kit	F-16C 25 Day 18 Aircraft				
Cost	$4,499,498.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	64.17%	73.92%	76.34%	74.28%
Day 30	NMCS	2.149	3.13	4.259	6.173
Day 30	NMCS Con	44.07%	73.05%	76.47%	63.95%
Day 30	EBO	22.99	47.27	79.83	121.03
Day 25	Availability	66.50%	75.93%	78.99%	78.76%
Day 25	NMCS	2.009	2.888	3.782	5.096
Day 25	NMCS Con	50.47%	81.85%	87.59%	84.95%
Day 25	EBO	20.09	40.93	66.18	100.12
Day 20	Availability	69.08%	77.93%	81.21%	82.21%
Day 20	NMCS	1.855	2.648	3.383	4.268
Day 20	NMCS Con	57.79%	88.78%	93.92%	95.75%
Day 20	EBO	17.2	34.89	54.34	80.07
Day 15	Availability	71.93%	79.93%	83.25%	84.79%
Day 15	NMCS	1.684	2.408	3.015	3.65
Day 15	NMCS Con	66.05%	93.84%	97.24%	99.07%
Day 15	EBO	14.32	28.98	44.21	62.22
Day 10	Availability	75.04%	82.08%	85.30%	86.96%
Day 10	NMCS	1.497	2.15	2.645	3.13
Day 10	NMCS Con	54.11%	77.64%	88.86%	93.97%
Day 10	EBO	11.39	22.99	34.82	47.17

Kit	F-16C 20 Day 18 Aircraft				
Cost	$4,282,866.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.98%	73.48%	74.09%	70.25%
Day 30	NMCS	2.161	3.182	4.663	7.14
Day 30	NMCS Con	43.55%	70.89%	65.43%	44.23%
Day 30	EBO	23.86	50.33	87.91	130.42
Day 25	Availability	66.32%	75.70%	77.75%	75.87%
Day 25	NMCS	2.021	2.915	4.005	5.791
Day 25	NMCS Con	49.93%	80.97%	82.12%	70.75%
Day 25	EBO	0.2085	42.98	72.73	109.17
Day 20	Availability	68.90%	77.80%	80.65%	80.52%
Day 20	NMCS	1.866	2.664	3.483	4.676
Day 20	NMCS Con	57.24%	88.45%	92.25%	90.09%
Day 20	EBO	17.85	36.34	58.78	88.17
Day 15	Availability	71.75%	79.83%	83.04%	84.05%
Day 15	NMCS	1.695	2.42	3.053	3.827
Day 15	NMCS Con	65.52%	93.70%	96.97%	98.05%
Day 15	EBO	14.87	30.09	46.73	68.15
Day 10	Availability	74.89%	81.99%	85.21%	86.74%
Day 10	NMCS	1.506	2.161	2.661	3.182
Day 10	NMCS Con	53.29%	77.14%	88.53%	93.15%
Day 10	EBO	11.82	23.86	36.26	50.33

Kit	F-16C 15 Day 18 Aircraft				
Cost	$4,232,778.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.96%	72.80%	71.64%	66.96%
Day 30	NMCS	2.162	3.263	5.105	7.93
Day 30	NMCS Con	43.47%	67.49%	54.10%	30.63%
Day 30	EBO	24.25	53.72	94.42	137.26
Day 25	Availability	66.29%	75.39%	76.17%	73.20%
Day 25	NMCS	2.022	2.953	4.289	6.432
Day 25	NMCS Con	49.86%	79.53%	74.62%	57.22%
Day 25	EBO	21.19	45.1	78.66	115.94
Day 20	Availability	68.87%	77.68%	79.82%	78.67%
Day 20	NMCS	1.867	2.678	3.631	5.12
Day 20	NMCS Con	57.17%	88.06%	89.14%	82.34%
Day 20	EBO	18.14	37.48	63.44	94.68
Day 15	Availability	71.73%	79.80%	82.72%	83.06%
Day 15	NMCS	1.696	2.424	3.111	4.064
Day 15	NMCS Con	65.46%	93.64%	96.27%	95.92%
Day 15	EBO	15.12	30.7	49.51	73.75
Day 10	Availability	74.87%	81.98%	85.14%	86.40%
Day 10	NMCS	1.507	2.162	2.674	3.263
Day 10	NMCS Con	53.20%	77.11%	88.14%	91.38%
Day 10	EBO	12.02	24.25	37.39	53.72

Kit	F-16C 10 Day 18 Aircraft				
Cost	$4,076,302.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.39%	69.96%	66.23%	61.35%
Day 30	NMCS	2.196	3.605	6.078	9.275
Day 30	NMCS Con	41.97%	54.09%	32.94%	13.89%
Day 30	EBO	24.97	59.7	102.19	145.16
Day 25	Availability	65.81%	73.62%	72.02%	68.18%
Day 25	NMCS	2.051	3.165	5.036	7.636
Day 25	NMCS Con	48.51%	71.11%	55.39%	34.20%
Day 25	EBO	21.7	49.72	86.2	123.8
Day 20	Availability	68.43%	76.70%	77.05%	74.60%
Day 20	NMCS	1.894	2.795	4.13	6.097
Day 20	NMCS Con	55.91%	84.21%	77.44%	62.98%
Day 20	EBO	18.54	40.48	70.33	102.45
Day 15	Availability	71.33%	79.30%	81.18%	80.28%
Day 15	NMCS	1.72	2.484	3.387	4.732
Day 15	NMCS Con	64.29%	92.36%	92.07%	87.47%
Day 15	EBO	0.1543	32.28	54.89	81.16
Day 10	Availability	74.53%	81.69%	84.49%	84.98%
Day 10	NMCS	1.528	2.196	2.791	3.605
Day 10	NMCS Con	51.49%	75.27%	84.34%	82.76%
Day 10	EBO	12.28	24.97	40.37	59.7

Kit	F-16C 30 Day 20 Aircraft				
Cost	$4,629,070.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	64.61%	74.24%	77.70%	78.25%
Day 30	NMCS	2.123	3.09	4.014	5.218
Day 30	NMCS Con	45.34%	74.43%	82.88%	84.56%
Day 30	EBO	22.12	45.3	71.12	106.6
Day 25	Availability	66.96%	76.20%	79.63%	81.05%
Day 25	NMCS	1.982	2.856	3.666	4.548
Day 25	NMCS Con	51.81%	82.66%	89.79%	94.17%
Day 25	EBO	19.31	39.45	60.74	87.64
Day 20	Availability	69.55%	78.16%	81.52%	83.25%
Day 20	NMCS	1.827	2.62	3.327	4.02
Day 20	NMCS Con	59.15%	89.26%	94.43%	97.93%
Day 20	EBO	16.52	33.66	51.4	71.3
Day 15	Availability	72.37%	80.14%	83.45%	85.17%
Day 15	NMCS	1.658	2.382	2.979	3.559
Day 15	NMCS Con	67.36%	94.10%	97.35%	99.30%
Day 15	EBO	13.74	27.93	42.51	57.71
Day 10	Availability	75.42%	82.31%	85.46%	87.12%
Day 10	NMCS	1.475	2.123	2.617	3.09
Day 10	NMCS Con	56.15%	78.76%	89.33%	94.27%
Day 10	EBO	10.92	22.12	33.59	45.3

Kit	F-16C 25 Day 20 Aircraft					
Cost	$4,556,781.00					
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	64.35%	74.08%	77.13%	76.27%
Day 30	NMCS	2.138	3.11	4.116	5.695
Day 30	NMCS Con	44.59%	73.80%	80.34%	74.39%
Day 30	EBO	22.67	46.39	75.77	115.37
Day 25	Availability	66.69%	76.05%	79.37%	80.00%
Day 25	NMCS	1.998	2.873	3.713	4.799
Day 25	NMCS Con	51.01%	82.25%	89.03%	90.34%
Day 25	EBO	19.8	40.34	63.46	94.91
Day 20	Availability	69.27%	78.03%	81.38%	82.82%
Day 20	NMCS	1.843	2.636	3.351	4.123
Day 20	NMCS Con	58.34%	89.01%	94.26%	97.20%
Day 20	EBO	16.95	34.43	52.89	75.99
Day 15	Availability	72.10%	80.02%	83.34%	85.02%
Day 15	NMCS	1.673	2.397	2.998	3.596
Day 15	NMCS Con	66.58%	93.96%	97.31%	99.24%
Day 15	EBO	14.11	28.6	43.49	59.94
Day 10	Availability	75.19%	82.18%	85.37%	87.04%
Day 10	NMCS	1.488	2.139	2.633	3.11
Day 10	NMCS Con	54.93%	78.13%	89.09%	94.16%
Day 10	EBO	11.21	22.67	34.36	46.39

Kit	F-16C 20 Day 20 Aircraft				
Cost	$4,372,417.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.99%	73.74%	75.72%	73.06%
Day 30	NMCS	2.16	3.15	4.371	6.466
Day 30	NMCS Con	43.56%	72.26%	73.46%	57.74%
Day 30	EBO	23.31	48.08	82.09	123.79
Day 25	Availability	66.32%	75.80%	78.65%	77.93%
Day 25	NMCS	2.02	2.903	3.843	5.297
Day 25	NMCS Con	49.94%	81.42%	86.26%	81.07%
Day 25	EBO	20.37	41.52	67.93	102.75
Day 20	Availability	68.90%	77.82%	81.03%	81.75%
Day 20	NMCS	1.866	2.661	3.414	4.38
Day 20	NMCS Con	57.24%	88.54%	93.54%	94.46%
Day 20	EBO	17.45	35.35	55.49	82.34
Day 15	Availability	71.75%	79.83%	83.15%	84.59%
Day 15	NMCS	1.695	2.42	3.032	3.699
Day 15	NMCS Con	65.52%	93.71%	97.17%	98.88%
Day 15	EBO	14.53	29.37	44.9	63.78
Day 10	Availability	74.89%	81.99%	85.23%	86.87%
Day 10	NMCS	1.506	2.16	2.658	3.15
Day 10	NMCS Con	53.29%	77.15%	88.62%	93.76%
Day 10	EBO	11.56	23.31	35.28	48.08

Kit	F-16C 15 Day 20 Aircraft					
Cost	$4,242,164.00					
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.96%	73.21%	72.97%	68.66%
Day 30	NMCS	2.162	3.215	4.864	7.522
Day 30	NMCS Con	43.49%	69.53%	60.15%	37.32%
Day 30	EBO	24.23	52.1	91.5	134.26
Day 25	Availability	66.30%	75.58%	77.06%	74.61%
Day 25	NMCS	2.022	2.83	4.129	6.094
Day 25	NMCS Con	49.87%	80.44%	78.86%	64.32%
Day 25	EBO	21.18	44.14	75.94	112.95
Day 20	Availability	68.87%	77.75%	80.30%	79.67%
Day 20	NMCS	1.867	2.669	3.545	4.878
Day 20	NMCS Con	57.17%	88.32%	91.01%	86.70%
Day 20	EBO	18.14	37.06	61.23	91.76
Day 15	Availability	71.73%	79.81%	82.91%	83.63%
Day 15	NMCS	1.696	2.422	3.075	3.929
Day 15	NMCS Con	65.46%	93.68%	96.72%	97.21%
Day 15	EBO	15.12	30.58	48.2	71.16
Day 10	Availability	74.87%	81.98%	85.19%	86.60%
Day 10	NMCS	1.507	2.162	2.666	3.215
Day 10	NMCS Con	53.20%	77.13%	88.40%	92.48%
Day 10	EBO	12.02	24.23	36.97	52.1

Kit	F-16C 10 Day 20 Aircraft				
Cost	$4,085,688.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.46%	71.08%	68.19%	63.27%
Day 30	NMCS	2.192	3.47	5.725	8.814
Day 30	NMCS Con	42.15%	59.10%	39.90%	18.67%
Day 30	EBO	24.8	57.19	99.2	142.16
Day 25	Availability	65.84%	74.31%	73.58%	69.94%
Day 25	NMCS	2.049	3.082	4.755	7.214
Day 25	NMCS Con	48.60%	74.47%	62.50%	41.77%
Day 25	EBO	21.63	47.72	83.25	120.8
Day 20	Availability	68.45%	77.06%	78.13%	76.07%
Day 20	NMCS	1.893	2.753	3.936	5.742
Day 20	NMCS Con	55.94%	85.75%	82.30%	70.35%
Day 20	EBO	18.51	39.17	67.54	99.46
Day 15	Availability	71.33%	79.43%	81.79%	81.34%
Day 15	NMCS	1.72	2.467	3.278	4.478
Day 15	NMCS Con	64.30%	92.79%	94.02%	91.21%
Day 15	EBO	15.43	31.66	52.6	78.24
Day 10	Availability	74.53%	81.73%	84.73%	85.54%
Day 10	NMCS	1.528	2.192	2.749	3.47
Day 10	NMCS Con	51.49%	75.52%	85.86%	86.50%
Day 10	EBO	12.28	24.8	39.07	57.19

Kit	F-16C 30 Day 24 Aircraft				
Cost	$4,846,924.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	64.91%	74.45%	78.02%	79.57%
Day 30	NMCS	2.105	3.065	3.956	4.903
Day 30	NMCS Con	46.20%	75.25%	84.08%	90.39%
Day 30	EBO	21.46	43.85	67.36	96.2
Day 25	Availability	67.26%	76.39%	79.83%	81.64%
Day 25	NMCS	1.964	2.833	3.631	4.406
Day 25	NMCS Con	52.68%	83.21%	90.21%	95.65%
Day 25	EBO	18.74	38.21	58.37	80.67
Day 20	Availability	69.84%	78.33%	81.67%	83.49%
Day 20	NMCS	1.809	2.6	3.299	3.962
Day 20	NMCS Con	60.02%	89.59%	94.60%	98.14%
Day 20	EBO	16.04	32.61	49.69	67.51
Day 15	Availability	72.63%	80.30%	83.58%	85.30%
Day 15	NMCS	1.642	2.364	2.955	3.527
Day 15	NMCS Con	68.15%	94.27%	97.42%	99.32%
Day 15	EBO	13.35	27.08	41.16	55.6
Day 10	Availability	75.64%	82.46%	85.57%	87.23%
Day 10	NMCS	1.461	2.105	2.597	3.065
Day 10	NMCS Con	57.35%	79.45%	89.66%	94.43%
Day 10	EBO	10.61	21.46	32.54	43.85

Kit	F-16C 25 Day 24 Aircraft				
Cost	$4,773,796.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	64.80%	74.40%	77.90%	78.77%
Day 30	NMCS	2.111	3.072	3.978	5.094
Day 30	NMCS Con	45.88%	75.07%	83.62%	86.84%
Day 30	EBO	21.75	44.52	69.5	103.59
Day 25	Availability	67.15%	76.33%	79.77%	81.33%
Day 25	NMCS	1.971	2.84	3.641	4.48
Day 25	NMCS Con	52.35%	83.08%	90.11%	94.86%
Day 25	EBO	19	38.77	59.57	85.25
Day 20	Availability	69.72%	78.28%	81.63%	83.40%
Day 20	NMCS	1.816	2.606	3.306	3.984
Day 20	NMCS Con	59.68%	89.51%	94.57%	98.05%
Day 20	EBO	16.25	33.09	50.5	69.67
Day 15	Availability	72.53%	80.25%	83.54%	85.27%
Day 15	NMCS	1.648	2.37	2.962	3.535
Day 15	NMCS Con	67.83%	94.23%	97.41%	99.31%
Day 15	EBO	13.52	27.46	41.78	56.63
Day 10	Availability	75.54%	82.40%	85.54%	87.20%
Day 10	NMCS	1.467	2.111	2.603	3.072
Day 10	NMCS Con	56.85%	79.22%	89.58%	94.41%
Day 10	EBO	10.75	21.76	33.02	44.52

Kit	F-16C 20 Day 24 Aircraft				
Cost	$4,557,697.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	64.35%	74.08%	77.13%	76.27%
Day 30	NMCS	2.138	3.11	4.116	5.695
Day 30	NMCS Con	44.59%	73.80%	80.34%	74.39%
Day 30	EBO	22.67	46.37	75.22	114.4
Day 25	Availability	66.69%	76.05%	79.37%	80.00%
Day 25	NMCS	1.998	2.873	3.713	4.799
Day 25	NMCS Con	51.01%	82.25%	89.03%	90.34%
Day 25	EBO	0.198	40.34	63.18	94.05
Day 20	Availability	69.27%	78.03%	81.38%	82.82%
Day 20	NMCS	1.843	2.636	3.351	4.123
Day 20	NMCS Con	58.34%	89.01%	94.26%	97.20%
Day 20	EBO	16.95	34.43	52.81	75.43
Day 15	Availability	72.10%	80.02%	83.34%	85.02%
Day 15	NMCS	1.673	2.397	2.998	3.596
Day 15	NMCS Con	66.58%	93.96%	97.31%	99.24%
Day 15	EBO	14.11	28.6	43.48	59.74
Day 10	Availability	75.19%	82.18%	85.37%	87.04%
Day 10	NMCS	1.488	2.139	2.633	3.11
Day 10	NMCS Con	54.93%	78.13%	89.09%	94.16%
Day 10	EBO	11.21	22.67	34.36	46.37

Kit	F-16C 15 Day 24 Aircraft				
Cost	$4,372,417.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.99%	73.74%	75.75%	73.06%
Day 30	NMCS	2.16	3.15	4.371	6.466
Day 30	NMCS Con	43.56%	72.26%	73.46%	57.74%
Day 30	EBO	23.31	48.08	82.09	123.79
Day 25	Availability	66.32%	75.80%	78.65%	77.93%
Day 25	NMCS	2.02	2.903	3.843	5.297
Day 25	NMCS Con	49.94%	81.42%	86.26%	81.07%
Day 25	EBO	20.37	41.52	67.93	102.75
Day 20	Availability	68.90%	77.82%	81.03%	81.75%
Day 20	NMCS	1.866	2.661	3.414	4.38
Day 20	NMCS Con	57.24%	88.54%	93.54%	94.46%
Day 20	EBO	17.45	35.35	55.49	82.34
Day 15	Availability	71.75%	79.83%	83.15%	84.59%
Day 15	NMCS	1.695	2.42	3.032	3.699
Day 15	NMCS Con	65.52%	93.71%	97.17%	98.88%
Day 15	EBO	14.53	29.37	44.9	63.78
Day 10	Availability	74.89%	81.99%	85.23%	86.87%
Day 10	NMCS	1.506	2.16	2.658	3.15
Day 10	NMCS Con	53.29%	77.15%	88.62%	93.76%
Day 10	EBO	11.56	23.31	35.28	48.08

Kit	F-16C 10 Day 24 Aircraft				
Cost	$4,233,694.00				
Eval at X		6 Aircraft	12 Aircraft	18 Aircraft	24 Aircraft
Day 30	Availability	63.96%	72.80%	71.64%	66.96%
Day 30	NMCS	2.162	3.263	5.105	7.93
Day 30	NMCS Con	43.47%	67.49%	54.10%	30.63%
Day 30	EBO	24.25	53.13	93.43	136.26
Day 25	Availability	66.29%	75.39%	76.17%	73.20%
Day 25	NMCS	2.022	2.953	4.289	6.432
Day 25	NMCS Con	49.86%	79.53%	74.62%	57.22%
Day 25	EBO	21.19	44.75	77.72	114.94
Day 20	Availability	68.87%	77.68%	79.82%	78.67%
Day 20	NMCS	1.867	2.678	3.631	5.12
Day 20	NMCS Con	57.17%	88.06%	89.14%	82.34%
Day 20	EBO	18.14	37.33	62.65	93.7
Day 15	Availability	71.73%	79.80%	82.72%	83.06%
Day 15	NMCS	1.696	2.424	3.111	4.064
Day 15	NMCS Con	65.46%	93.64%	96.27%	95.92%
Day 15	EBO	0.1512	30.66	49.03	72.85
Day 10	Availability	74.87%	81.98%	85.14%	86.40%
Day 10	NMCS	1.507	2.162	2.674	3.263
Day 10	NMCS Con	53.20%	77.11%	88.14%	91.38%
Day 10	EBO	12.02	24.25	37.25	53.13

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Vita

Captain Christopher M. Beckley graduated from North High School in Sheboygan, Wisconsin. He entered undergraduate studies at the University of Wisconsin in Madison, Wisconsin where he graduated with a Bachelor of Arts degree in History in May 2000. He was commissioned through the Detachment 925 AFROTC at the University of Wisconsin and began active duty in July 2000.

Captain Beckley's first assignment was at Whiteman AFB, MO. He served as the Officer in Charge of Support Agreements and later as the Officer in Charge of Deployments in the 509th Logistics Support Squadron, functions which later merged into the 509th Logistics Readiness Squadron. While stationed at Whiteman he earned a Master of Arts degree in Management from Webster University.

Captain Beckley was reassigned to Spangdahlem Air Base, Germany in September 2002. He served as the Mission Support Flight Commander for the 606th Air Control Squadron. Later he served in the 52nd Logistics Readiness Squadron, first as Assistant Materiel Management Flight Commander and then as Vehicle Management Flight Commander. While stationed at Spangdahlem Captain Beckley deployed to Kandahar Army Airfield, Afghanistan where he served as Chief of Supply for the 451st Air Expeditionary Group.

In August 2005, Captain Beckley entered the Graduate School of Engineering and Management, Air Force Institute of Technology. Upon graduation, he will be assigned to the Air Force Institute of Technology.

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14. ABSTRACT
As the Air Force transforms from a garrisoned force into a light expeditionary force, one area for restructuring is the manner in which mobility readiness spares packages (MRSPs) are managed and stocked. For a war tasking, thirty days supply is typically deployed in a MRSP as it is assumed that there will be no re-supply for thirty days. Studies of combat operations from the past decade suggest that thirty days without re-supply is an outdated assumption. The objective of this thesis is to economically build a robust MRSP that is flexible enough to provide adequate support for a variety of squadron sizes at least through day 20 of a war. Faster establishment of a reliable re-supply pipeline is the key to successfully implementing such a MRSP. This research focused on three different weapon-systems; the A-10, F-15E, and F-16C. Through use of the Aircraft Sustainability Model, smaller MRSPs are constructed which have the ability to adequately support squadron sizes of 12, 18, and 24 aircraft based on their ability to maintain aircraft availability goals without generating excessive amounts of expected backorders.

15. SUBJECT TERMS
Aircraft Sustainability Model (ASM), Aircraft Availability, Logistics Planning, Mobility Readiness Sapres Packages (MRSP), Operational Readiness, Spare Aircraft Parts

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