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Feasibility Study and Process Recommendation for United States Air Force Currency Transportation Mission: "Jingle Runs"

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December 2005

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The purpose of this MBA Project was to study the current U.S. Air Force currency transportation process, particularly currency transportation from the United States to Japan and Korea. The goal of this study was to explore ways that might reduce the U.S. Air Force's cost burden for currency transportation. These tasks are called "Jingle Runs", which are performed to meet requirements of all Military Banking Facilities in Japan and Korea. Using modeling and forecasting, this study analyzes the current process against two viable currency transportation alternatives and recommends the most cost efficient alternative.

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The purpose of this MBA Project was to study the current U.S. Air Force currency transportation process, particularly currency transportation from the United States to Japan and Korea. The goal of this study was to explore ways that might reduce the U.S. Air Force's cost burden for currency transportation. These tasks are called "Jingle Runs", which are performed to meet requirements of all Military Banking Facilities in Japan and Korea. Using modeling and forecasting, this study analyzes the current process against two viable currency transportation alternatives and recommends the most cost efficient alternative.

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LIST OF ABBREVIATIONS, ACRONYMS, TERMS

ABA	American Banking Association
AF	Air Force
AFB	Air Force Base
AMC	Air Mobility Command
APS	Aerial Port Squadron
BMMP	Business Management Modernization Program
CONEX	A shipping container used by Air Mobility Command
CPTS	Comptroller Squadron
CTR	Currency Transaction Registrar
DDO	Deputy Disbursing Officer
DoD	Department of Defense
EFT	Electronic Funds Transfer
FY	Fiscal Year
MBA	Master's of Business Administration
MBF	Military Banking Facility
OSD	Office of the Secretary of Defense
PACAF	Pacific Air Forces
PACOM	Pacific Command
SON	Statement of Needs

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I. INTRODUCTION

A. BACKGROUND/PROJECT PREMISE

United States Air Force, Pacific Forces have been performing cash distribution missions called "Jingle Runs" for over 30 years. These missions are performed for the United States Pacific Forces Command (PACOM) and facilitated with the help of the United States Air Force, Air Mobility Command. These missions support the United States currency requirements of all Military Banking Facilities (MBF), who in turn support the currency requirements of the various military installations located in Japan and Korea. "Jingle Runs" refer to the direct transportation of United States currency from the U.S. Federal Reserve in San Francisco, CA to the MBFs located at various military installations throughout the orient and eventually provide cash support for the end user military installations. Recently these Jingle Runs have become very costly to the United States Air Force and the Pacific Funding Unit providing co-ordination located at Yokota AFB, Japan, which previous co-ordination. This MBA project will evaluate the current process of Jingle Runs from a total cost standpoint and evaluate this current process against possible alternatives. A feasibility study will be performed to evaluate if other more cost efficient options will satisfy the Air Force's cash needs and ultimately save Air Force resources. Two alternative options will be compared against the status quo for performing Jingle Runs. Monte Carlo simulation will then be used to predict the cost savings that each option could provide the Air Force.

The basic premise of our project is to recommend the most cost efficient process to meet the currency requirements of our military installations in the Orient. With all the banking technology available to customers in 2005, our hypothesis is that the current process of currency transportation may not be the most economically efficient option available to the United States Air Force. Our goal is to offer decision makers a more cost efficient process of distributing United States currency, if available.

B. OVERVIEW OF USER REQUIREMENTS

A brief look at user requirements reveals that the Jingle Run missions are a result of the cash requirements at each installation serviced. MBFs service the cash requirements of their installation and must provide certain types of cash and coins to meet the installation's mission. Some examples of these requirements are providing local servicemen and women with cash. In addition to individual cash usage, base facilities such as the bowling alley and restaurants have operational cash requirements that are met through Jingle Runs.

Chapter two provides a complete and thorough look at user needs, mirroring the Department of Defense's formal acquisition process, which develops a Statement of Needs (SON).

C. OVERVIEW OF CURRENT JINGLE RUN MISSION

To meet current MBF needs, Pacific Air Forces (PACAF) combined with Air Mobility Command (AMC) co-ordinate currency transportation on a quarterly basis. This generally equates to three to four Jingle Run missions per year. The agreement between PACOM and the Military Banking Facility, to provide Jingle Run missions, is spelled out in a PACOM operating instruction signed by the PACOM Commander. This agreement specifies that responsibility for co-coordinating Jingle Runs is placed upon Yokota AFB, as representative of the Pacific Funding Unit.

Yokota AFB must commit manpower to co-ordinate a shipment of U.S. currency from the San Francisco, CA Federal Reserve Bank to Travis AFB. Yokota AFB also commits personnel to co-ordinate the boxing and shipping operations with the Travis Aerial Port Squadron. When funds arrive at Yokota, Japan, again the Yokota Comptroller Squadron must commit personnel to co-ordinate final shipment of funds to the sub-funding unit in Korea (Interview with MSgt Harvey, 360th CPTS). In addition to man-hours spent co-coordinating the funds shipment of funds, the Yokota AFB Comptroller Squadron must provide two personnel per shipment to escort and secure the funds from Travis AFB to all final destinations.

This manpower commitment is a drain on Yokota Comptroller Squadron personnel and affects this unit's ability to support other mission requirements. These committed personnel represent actual costs to the United States Department of Defense that might be reduced or eliminated with another alternative. A complete look at the entire Jingle Run process including all costs to the DoD is outlined in Chapter III.

D. OVERVIEW OF U.S. MAIL SHIPMENT (ALTERNATIVE #1)

Alternative #1 to the status quo is to ship all currency requirements through the U.S. postal service. This would still require co-ordination from the MBF's to the U.S. Treasury in San Francisco, but would relieve the Air Force of all manpower costs of packing and shipping. This process would require a shipping cost as well as an insurance cost charged by the U.S. Postal Service. All the details and a full cost breakdown of the contracted alternative are included in Chapter IV.

E. OVERVIEW OF COMMERCIAL BANKING (ALTERNATIVE #2)

An analysis will be performed to estimate the cost of a commercial banking alternative. With technology advancement in banking resource management available, commercial banking processes may provide a more cost-efficient method of meeting user needs than either the status quo or contracted alternative. The commercial alternative basically involves using a foreign bank account with U.S. currency deposits that MBFs can access within the country of operation. This commercial banking alternative and all economic costs associated with this alternative are discussed in Chapter V.

F. OVERVIEW OF COMPARISON

After analyzing the total cost for the status quo Jingle Run missions and, for each of the two viable options, a comprehensive comparison between all options will be performed and incorporate the cost probabilities distributions associated with each alternative. Price models will be constructed in EXCEL using all appropriate costs and outlining an accurate cost probability for each alternative. These probabilities will act as a forecast cost range for each alternative and then Monte Carlo simulation will be applied to the status quo price model. This simulation will provide an accurate prediction of

costs for the status quo alternative and essentially provide Air Force decision makers with analysis to accurately choose the method to provide cash to the MBFs in PACAF. The complete comparative analysis is outlined in Chapter VI.

G. OVERVIEW OF RECOMMENDATION/CONCLUSION

After performing the comparative analysis, a recommendation will be made to continue the status quo Jingle Run currency missions or to adapt one of the alternatives outlined above. Recommendations will view the analysis from a quantitative standpoint, mainly from the comparative analysis performed in Chapter VI. In addition to the quantitative analysis, a qualitative analysis was performed and weighed into the ultimate decision that is recommended. A detailed explanation of conclusions and recommendations is included in Chapter VI of this MBA project.

II. USER NEEDS

A. WHY DO WE NEED THIS MONEY?

The purpose of this chapter is threefold: to explain why the DoD considers its users in determining the need for a product or service; to define, in greater detail, the users of the Jingle Run program; and to provide the reason these consumers rely on U.S currency. A Jingle Run simply supplies U.S. currency to various MBFs, which are used by military servicemen, foreign nationals, etc.

The DoD acquisition process has taken many forms throughout history. Acquiring commercial goods or services to perform or fulfill DoD requirements is still a fairly new concept and constantly being revised and improved. Before commercial acquisition, the DoD used strictly military resources to perform all mandated missions. Early commercial acquisition by the DoD was very costly and millions of dollars were spent to acquire products and services to meet their needs. One of the problems the DoD frequently encountered was that the products and services they acquired lacked essential needs identified by the user. This was especially significant during the 1970s and 1980s when many new systems relied on technology driven programs, were performance focused, and where costs of these systems were overshadowed by end results (MN3331, Dr. Rene G. Rendon, NPS).

Recently, the DoD has changed their acquisition process to concentrate on affordability with focus on total ownership costs (MN3331, Dr. Rene G. Rendon, NPS). This style of acquisition forces Program Managers and government officials to look at specific user needs for each product and service provided. This transformation is best described as an approach that focuses on "best value" rather than "bigger is better." This transformation established affordable solutions to needed military capabilities and a guideline to use in acquiring products and services to meet those needs.

This new approach to spending is why the DoD is focusing on the users of the Jingle Run process and why our project includes this chapter outlining user needs. To accurately study a current military process and explore privatization alternatives, we must

first understand the need for Jingle Runs. The users are the men and women of the different branches of the United States military. Additional users include United States civilians living abroad. The third type of user of the Jingle Run is the foreign nationals who work as civilian employees on our foreign bases. The final type of user who relies heavily on the Jingle Run process is foreign civilian contractors. Most of the users listed above rely on the local banks to supply U.S. currency to support the needs of their customers.

The next issue to be explored is the use of this U.S. currency because using this currency is driving the requirement for a current Jingle Run process. There are many different reasons for providing U.S. currency abroad. One reason is that the local banks are required to provide the U.S. service member with a method of acquiring U.S. currency if he or she wishes to have access to U.S. currency. A service member may wish to access U.S. currency to shop at local base retailers or to take U.S. currency into the host country to purchase goods and/or services. The second reason for U.S. currency on many overseas bases is for the Morale and Welfare clubs, some examples of these facilities are the Enlisted Club and the Officer Clubs. Each of these facilities requires U.S. currency to operate. Many of the overseas bases have restaurants, bars, and even casinos that only handle U.S. currency. An additional reason the United States provides foreign bases with U.S. currency is that many of the foreign nationals and local contractors, who work on or near U.S. bases, are required to use U.S. currency in and around these locations. Therefore, there is a significant need for U.S. currency to be provided by the U. S. Government to these various locations and organizations.

III. STATUS QUO COST

A. OVERVIEW OF STATUS QUO

Capturing the current costs of all activities associated with the Pacific Air Force Jingle Runs involves analyzing the entire operation, which includes multiple costs at multiple destinations. By outlining the current process from start to finish, cost estimation can incorporate all identifiable costs to the Air Force. Comparative analysis of the current costs with a contracted or commercial alternative is only accurate if all costs are accurately complied and analyzed. For the purpose of standard analysis, fiscal year (FY) 2005 costs will be gathered and the annual cost of current operations will be compiled. This chapter will analyze the entire Jingle Run operation from start to finish and capture the appropriate costs to include operations, manpower, and other costs at each stage of the operation so current costs can be compared against other alternatives.

Compiling cost estimates involves a number of DoD cost data gathering techniques (OA4702, Lt Col Mislick, NPS). To gather the costs associated with PACAF's current process of Jingle Runs, expert opinion and extrapolated cost estimates were used. Extrapolation of historical data is used whenever possible, because this is the most accurate cost gathering technique. Extrapolation provides a cost estimate that is proven to be true from past operations; extrapolating these figures allows a good baseline for analysis for the continued cost of identical operations (the status quo). Cost extrapolation draws on financial transaction databases, utilized by the Financial Management and Logistical operations of the Air Force. Expert opinion was used when extrapolation was not feasible.

Expert opinion cost estimates were provided through a series of interviews, and on site visits, when possible. Asking specific process involvement questions provided an accurate cost estimate of many manpower costs at various locations. While these experts are very knowledgeable in their specific area of Jingle Run operations, expert opinion is not an exact science. When considering cost figures where expert opinion was used, it is important to realize that these cost estimates are based on an expert's opinion and knowledge gathered from past historical experiences regarding Jingle Runs.

All costs gathered and analyzed are described in Chapter three and depicted in tables throughout the chapter. During fiscal year 2005, only two Jingle Runs were completed, one in January 2005 and another in June 2005 (interview, Corliss Smith, Travis AFB APS). Given this information, all tables estimate the actual costs associated with the two trips for FY 2005.

B. PROCESS OF CURRENT OPERATION

A graphical representation of the current Jingle Run process is explained below in Figure #1. The entire Jingle Run process averages six days (interview, MSgt Ed Harvey, Yokota CPTS).

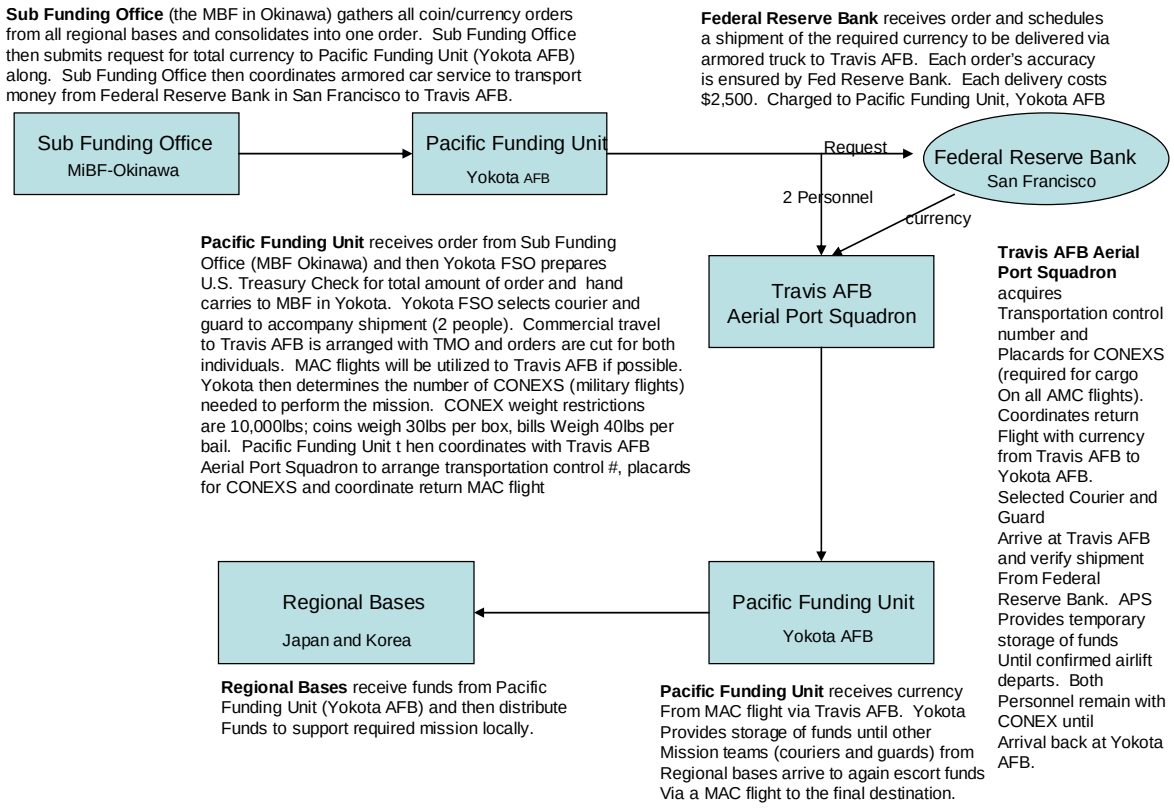

Figure 1. Current Jingle Run Process

C. MILITARY BANKING FACILITY SUB-FUNDING OFFICE REQUEST FOR CASH (OKINAWA, JAPAN)

The current Jingle Run process originates with the regional MBF for PACAF at Okinawa AFB, Japan. As outlined in Chapter II, MBFs provide cash for operations at bases located throughout PACAF. The MBF at Okinawa will collect the cash requirements for the bases that are serviced with Jingle Runs (Yokota, Okinawa, and Korea), and then send a request to Yokota AFB, which represents the Pacific-funding office (interview, MSgt Ed Harvey, Yokota CPTS). The Yokota AFB Comptroller Squadron co-ordinates the Jingle Run mission until delivery of currency. The only resources used at Okinawa MBF are manpower to coordinate efforts to gather the total amount that is needed by the other regional MBFs. For analysis purposes, we assume that this function is done regardless of alternative; therefore it is a fixed cost incurred during this function and would not be saved with another alternative. As outlined in Chapter II, these MBFs require this cash regardless of the source or operation used, so the cost of this request for cash will always be incurred.

D. YOKOTA AFB COMPTROLLER SQUADRON (PACIFIC FUNDING OFFICE)

The Yokota AFB Comptroller Squadron is responsible for the majority of co-ordination to complete the entire Jingle Run process. This co-ordination is a manpower intensive undertaking and involves a number of individuals. Heading up the co-ordination at Yokota AFB throughout the Jingle Run is the Deputy Disbursing Officer (DDO). The DDO handles the disbursements and payments for Yokota AFB. This individual is currently a Technical Sergeant and spends an average of two hours a day on Jingle Run co-ordination until the mission is complete (2 hours/day x 6 days=12 hours). Because military compensation is considered a fixed cost and would not vary with production, the Air Force would incur this manpower cost regardless of the task assigned to this particular non-commissioned officer (GB 4510, Prof Shank, NPS instructor). Even though this physical cost would not be completely saved with an outsourced mission (this TSgt would not be separated from the Air Force), there must be consideration for the opportunity cost of using manpower to perform this task. For

example, this individual could be using his or her time on other mission related tasks in lieu of Jingle Run co-ordination every time a request is received (interview, MSgt Ed Harvey, Yokota CPTS). For our analysis we will consider the manpower costs of all military and civilian labor to be a real savings because if we outsourced these functions this manpower could be devoted to other more mission critical tasks. According to the Office of the Secretary of Defense (OSD) military compensation website, the average annual cost to the Air Force for a TSgt is $51,946.68 (http://www.dod.mil/militarypay/pay/calc). Using 2,080 manpower hours in a year, this hourly rate is $24.97 multiplied by 12 hours each Jingle Run, for a per operation cost of $299.69.

Once the deputy dispersing officer receives the requested currency from the sub-funding office in Okinawa, an order is placed for currency at the U.S. Federal Reserve Bank in San Francisco, CA. Each order is delivered via armored vehicle on the desired date from San Francisco to Travis AFB, CA for transportation back to the Pacific Funding unit at Yokota AFB. Each request costs the Air Force $2,500, which is paid to the U.S. Federal Reserve for transporting the currency. Table #1 displays all costs associated with the U.S. Federal Reserve.

2) Federal Reserve Bank (San Francisco, CA)	***Cost/Trip***	***# of Trips***	**Avg Cost**
Contracted Delivery Cost	2500	2	**$5,000.00**

Table 1. Cost Associated with U.S. Federal Reserve

The other manpower costs incurred by the Pacific Funding office include one courier and one armed guard who travel and co-ordinate logistical operations while transporting the currency. According to DoD Financial Management Regulation Vol 5, Chap 3, funds in transit must be secured at all times (http://www.dod.mil/comptroller/fmr/05/05_03.pdf). One courier and one armed guard

are responsible for meeting the currency upon arrival at Travis AFB and escorting the currency to its final destination. These two individuals usually fly on contracted commercial airlines from Yokota AFB, Japan to Travis AFB, CA. The round trip cost of these airline tickets, and the per diem expense for the six-day process average $700 each or $1400 for each Jingle Run mission completed. Once each mission reaches Yokota AFB, currency is unloaded for Yokota AFB and the remaining currency continues on to Osan AFB Korea to deliver currency to the Korean bases. This creates another one-way commercial ticket for each individual accompanying the currency for a total cost of $235. In addition to the travel expenses, we calculated the opportunity cost of these individuals because the manpower devoted to this mission is not available for other Air Force mission related tasks. The individuals who usually fulfill the guard and courier requirements are either a Staff Sergeant (E-5) or Technical Sergeant (E-6). Using the OSD military compensation website we average the annual salary of these two ranks for a cost of $48,506.76 or $23.32/hour (http://www.dod.mil/militarypay/pay/calc). Considering that each individual devotes 48 hours (8 hours x 6 days) to a single Jingle Run mission, the per mission cost for both individuals is $2,238.77. A complete list of all administrative costs that are performed by the courier and guard is summerized in Table #2 below.

1) Pacific Funding Unit	***Per diem + Air Fare***	***Rank of Employee***	***# of Hours***	***# of Trips***	***Description***	**Avg Cost**
(Yokota) Flight Costs Yokota - Travis ($700/each person)	$1,400.00			2	Per diem	**$2,800.00**
Manpower Costs	***Rank of Employee***	***Rate per hour*** ***Hourly (2080/yr)***	***# of Hours (4-8 days, 6 days avg)***	***# of Trips***	***Annual Pay Avg***	
Deputy Dispersing Officer (2hr/day)	TSgt (E-6)	$24.97	12	2	$51,946.68	**$599.38**
Courier (8hr/day)	TSgt (E-6) or SSgt (E-5)	$23.32	48	2	$48,506.76	**$2,238.77**
Guard (8hr/day)	TSgt (E-6) or SSgt (E-5)	$23.32	48	2	$48,506.76	**$2,238.77**

Table 2. Costs associated with Pacific Funding Unit

E. TRAVIS AFB AERIAL PORT SQUADRON

Travis AFB in Fairfield, CA serves as the transportation hub for Jingle Runs to depart the U.S. for PACAF and represents the next set of costs incurred by the Air Force. Travis AFB is not responsible for the major administrative co-ordination of the mission, but represents the logistical hub where currency is received from the Federal Reserve Bank in San Francisco and repackaged and shipped to operational bases in PACAF. Manpower costs are incurred as currency is packaged and loaded onto aircraft; this is in addition to the shipping costs incurred by the AF via the commercial contracted carrier used for U.S. Transportation Command Operations.

Manpower costs for Travis AFB begin when the armored vehicle sent by the U.S. Federal Reserve Bank arrives at Travis AFB from San Francisco, CA. This armored vehicle is escorted by Travis AFB Security Forces personnel along with the representative courier and guard from the gate at Travis AFB to the special cargo

packaging terminal at Travis AFB. The security personnel usually involve four Non-commissioned officer personnel (E-4's & E-5's) for a total of two hours. This total cost using the OSD military compensation table equates to $186.56 for each Jingle Run or $373.13 for our two FY 2005 trips (http://www.dod.mil/militarypay/pay/calc). Upon arrival at the special cargo packaging terminal, the currency is unloaded from the armored vehicle and special packaged in metal lock-boxes called conexs. These boxes are loaded by two loaders using forklifts and then locked and stored (under guard by the courier or guard) in the special cargo warehouse until the scheduled flight departs from Travis AFB to Yokota AFB (interview, Ms Corliss Smith, 60th APS). The total time spent loading and packaging the currency is about two hours and is performed by two wage-grade 8 loaders at an hourly rate of $25.81; this represents a total per trip cost of $103.24 and a FY 2005 cost of $206.48 (http://www.cpms.osd.mil/wage/scheds/af/survey-sch/018/018F-10Jan2005.html).

Transportation Costs for all currency shipped are calculated using the U.S. Transportation Command rates, which the Air Force pays to the Air Mobility Command or Transportation Command, depending on who funded the commercial airlift aircraft. These contracted commercial aircraft have other cargo on-board in addition to the currency being transported to the desired PACAF bases. While contracted aircraft would ship cargo with or without the Jingle Run currency on-board, this cargo space cost represents the opportunity cost of shipping other cargo in place of the currency. Contracted shipping rates are based upon the type and amount of cargo shipped; a complete break-down of all shipping rates from Travis AFB to Yokota AFB can be found in Attachment #4. All Jingle Runs are done in bulk and qualify for the lowest shipping rate available, which is $1.36/lb (over 3600 lbs). The January 2005 Jingle Run shipment consisted of one conex (box) of currency weighing 8,515 lbs (AMC logistical database). The total currency shipment cost from Travis AFB to Yokota AFB for the January 05' shipment was $11,614 (8,515 lbs * $1.36/lb). The other FY 2005 currency shipment took place in June and included 2 conexs each weighing 6,435 lbs, for a total of $17,553.12

(6,435 lbs * $1.36 * 2). This brings the total FY 2005 cost to ship currency from Travis AFB to Yokota AFB to $29,166.55. Table #3 outlines all costs associated with Travis AFB.

3) Travis AFB Aerial Port Sq		***Actual Weight (8000lbs to14,000lbs)***	***Weight per lb***	***# of Trips***	***Description***	***Avg Cost***
Flight Costs Travis - Yokota (Jan)		8515	1.363879	1	P/U Funds	**$11,613.43**
Flight Costs Travis - Yokota (June)		6435	1.363879	1	P/U Funds	**$ 8,776.56**
Flight Costs Travis - Yokota (June)		6435	1.363879	1	P/U Funds	**$ 8,776.56**
Manpower Costs	***Rank of Employee***	***Rate per Hour***	***# of Hrs (SF 6-10 tot hrs) (Loaders 4 tot hrs)***	***# of Trips***	***Annual Pay Avg***	***Avg Cost***
Security Forces (4 officers for 2 hours)	TSgt or SSgt	$23.32	8	2	$48,506.76	**$ 373.13**
Loaders (2 loaders for 2 hours)	WG-8	$25.81	4	2	*Hourly Rate Only	**$ 206.48**
Admin Procedures (packing labels)	N/A	N/A	N/A	N/A	N/A	N/A

Table 3. Costs associated with Travis AFB APS

F. PACIFIC FUNDING UNIT YOKOTA AFB, JAPAN (ARRIVAL OF CURRENCY)

The next area of costs incurred for the Jingle Run process is when the U.S. currency reaches Yokota AFB, Japan. Yokota represents the Pacific Funding Unit that receives all currency shipped from Travis AFB, CA and apportions out the currency requested by the various bases in Japan and Korea. This process involves opening the existing conexs, sorting out the currency to remain at Yokota, re-packaging the rest of the

currency in new conexes, and shipping the currency to its final destination. This requires packers and loaders at Yokota AFB; usually one NCO rank supervisor (E-5 or E-6) and four lower ranking airmen (E-1 to E-4). The average labor required is six hours. This computes to six total hours for one supervisor and 24 hours for technician manpower. This manpower was utilized twice in FY 2005 and resulted in a $996.26 manpower cost for loaders and packers at Yokota for FY 2005 (MSgt Ed Harvey, Yokota CPTS).

These new shipments of money must also be accompanied by a courier and guard, just as the previous leg of the Jingle Run. Flight and per diem costs are estimated at $117.50 each for the courier and guard; two trips were made from Yokota AFB to Korea in FY 2005 for a total travel per diem cost of $470 ($117.50*two individuals *two trips) (MSgt Ed Harvey, Yokota CPTS). The labor cost for this two-day trip is included above in the six-day labor cost for the entire trip from start to finish.

The final cost associated with the Pacific funding unit at Yokota AFB, Japan is the return shipment of the empty conexs. The conexs used to bring currency from Travis AFB to Yokota AFB are returned to Travis AFB for the next Jingle Run (Ed Harvey, Yokota CPTS). The empty conexs weigh 1435 and are shipped back to Travis AFB on a contracted commercial carrier at the same rate as the full conexs ($1.36/lb, shipping rates found in Attachment #4). One empty conex was shipped back in January of 2005 and two empty conexs were shipped back in June of 2005 for a total cost of $5,871.50 (3 conexs * 1,435 lbs * $1.36/lb) (AMC logistics database). Table #4 contains all costs associated with the return trip to the Pacific Funding Unit.

4) Pacific Funding Unit (Yokota)	***Avg Per diem+Air Fare***	***Actual Weight (3000lbs-6000lbs) (Rtn Conex 1435 lbs)***	***Weight per lb***	***# of Trips***	***Description***	**Avg Cost**
Flight Costs Yokota - Korea (Jan)		4500	1.363879	1	P/U Funds	**$6,137.46**
Flight Costs Yokota - Korea (June)		4500	1.363879	1	P/U Funds	**$6,137.46**
Flight Costs Yokota - Travis (Jan)		1435	1.363879	1	Return CONEX	**$1,957.17**
Flight Costs Yokota - Travis (June)		1435	1.363879	2	Return CONEX	**$3,914.33**
Flight Costs Yokota - Kadena ($117.50/person)	$235.00			2	Per diem	**$ 470.00**

Manpower Costs	***Rank of Employee***	***Rate per Hour (2080/yr)***	***# of Hours (4 to 8 tot hrs Sup, 6 avg, 12- 32 ldr/pckr, 24 avg)***	***# of Trips***	***Annual Pay Avg***	
Loaders and Packers (1 Supervisor)	TSgt (E-6) or SSgt (E-5)	$23.32	6	2	$48,506.76	**$ 279.85**
Loaders and Packers (3-4 loaders/packers)	E-1 to E-4	$14.93	24	2	$31,044.72	**$ 716.42**

Table 4. Costs associated with arrival of currency

G. REGIONAL BASES IN JAPAN AND KOREA

Once currency arrives at the regional bases in Korea it is unpacked and unloaded. This involves two airmen (E-1 to E-4) for an average of three hours (Ed Harvey, Yokota CPTS), for a total manpower cost of $89.55 for the two shipments in FY 2005.

Each conex that arrives at the regional bases must also be shipped back to Travis AFB, similar to the empty conexs shipped from Yokota AFB. Less currency is required at the regional bases so only one conex is used to ship currency each trip. In FY 2005, two trips were completed (June and Jan) for a total of two empty conexs weighing 1435lbs each (Ed Harvey, Yokota CPTS and interview, Corliss Smith, Travis AFB APS). The total FY 2005 costs for shipping empty conexs was $3914.33 (1435lbs * 2 conexs * $1.36/lb). Table #5 contains all costs associated with the regional bases in Japan and Korea.

5) Regional Bases (Final Destination)	***Avg Per diem cost***	***Actual Weight***	***Weight per lb***	***# of Trips***	***Description***	
Flight Costs Korea - Travis (Jan)		1435	1.363879	1	Return CONEX	**$1,957.17**
Flight Costs Kadena - Travis (June)		1435	1.363879	1	Return CONEX	**$1,957.17**
Manpower Costs	***Rank of Employee***	***Rate per Hour (2080/yr)***	***# of Hours (2 to 4 tot hrs, 3 avg)***	***# of Trips***	***Annual Pay Avg***	
Unloading and Unpacking (2)	E-1 to E-4	$14.93	3	2	$31,044.72	**$ 89.55**

Table 5. Costs associated with Regional Bases

H. SUMMARY OF FY 2005 COSTS

Upon final examination of the actual FY 2005 costs for Jingle Run currency shipment at each cost location, the total cost for FY 2005 was determined to be $66,239.65 for the two trips completed (January and June). Historically, Jingle Runs have been performed more frequently, with up to 4 shipments per year. The average shipment cost can be made to estimate the Jingle Run cost in FY 2005 if two or more shipments were performed; the FY 2005 costs estimate is $99,359.48 if three shipments

were made and $132,479.30 if four shipments were made. The final summary of all costs for the status quo process is in Table #6 below.

Cost Description	Probabilities (based on historical # of trips per year)	Avg Cost
Actual Total Costs per FY 05' (2 Trips) (25% probability)	25%	$ 66,239.65
Avg Total Costs per FY05' (3 Trips) (50% probability)	50%	$ 99,359.48
Avg Total Cost per FY05' (4 Trips) (25% probability)	25%	$ 132,479.30

Table 6. Total summary of status quo costs

IV. UNITED STATES POSTAL SERVICE (ALTERNATIVE #1)

A. OVERVIEW OF ALTERNATIVE #1

This chapter examines the United States Postal Service as an alternative for the entire Jingle Run operation. The analysis will capture the total costs from start to finish including operations, manpower, and other costs at each stage of the process. Initial analysis has revealed this process is quicker, but comes at a higher cost. Multiple techniques were used to estimate costs for this alternative, which will be explained further below (OA4702, Lt Col Mislick, NPS). Alternative #1 will be outlined in table format throughout Chapter IV as well. For the purpose of standard analysis, fiscal year 2005 costs will be gathered and the annual cost of current operations will be compiled.

To gather the costs for this alternative, we used three techniques. The first technique is the "Expert Opinion Technique" (OA4702, Lt Col Mislick, NPS). This technique involves consultation with experts, who use their system experience and understanding to estimate costs. The second technique is "Extrapolation of Actuals" (OA4702, Lt Col Mislick, NPS). This technique involves using costs that are estimated through historical data. The third cost data gathering technique used is the "Analogy Technique" (OA4702, Lt Col Mislick, NPS). This technique is most useful when the new process uses a combination of existing subsystems for which recent historical cost data is available, as in this case.

All costs gathered and analyzed in this project are described in Chapter 4. During fiscal year 2005 only two Jingle Runs were completed, one in January 2005 and another in June 2005. Therefore, we will only use two currency shipments in our analysis. Given this information, Attachment #5 estimate the actual costs associated with the two trips for FY 2005.

B. PROCESS USING UNITED STATES POSTAL SERVICE

A flowchart representing the alternative process is provided below in Figure #2. This entire Jingle Run "alternative" process takes an average of 7 - 10 days (interview, United States Postal Service worker), as opposed to six days for Jingle Runs.

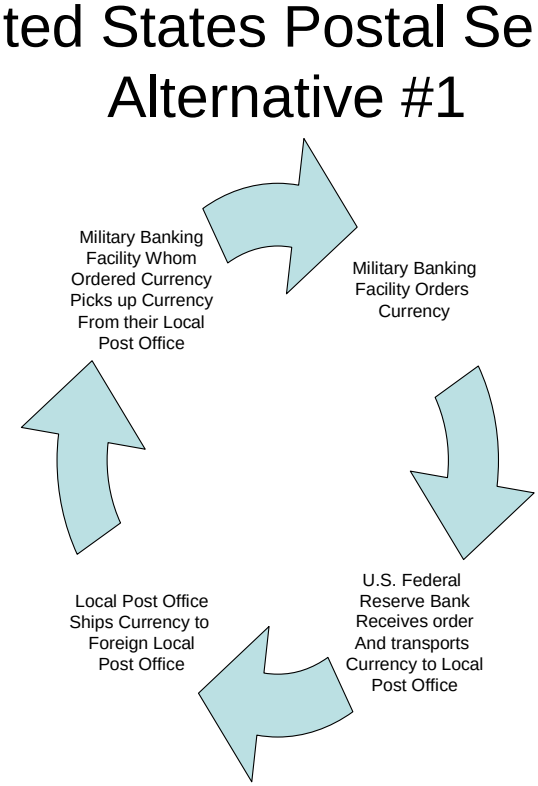

Figure 2. U.S. Postal Service Process

C. ALTERNATIVE #1 AND MBF REQUEST FOR CASH

For this alternative process, each MBF coordinates their cash requirements with the U.S. Federal Reserve Bank in San Francisco, CA, through the Yokota AFB Comptroller office representing the Pacific Funding unit. Our recommendation for this alternative is that the MBF directly co-ordinate with the U.S. Federal Reserve bank, taking the Pacific Funding office out of the process, because Pacific Funding office manpower requirements are not required with this alternative. Once the MBF places an order for currency at the U.S. Federal Reserve Bank in San Francisco, CA, currency is delivered, via armored vehicle, on the desired date from the Federal Reserve Bank to the local Post Office. Currency is then shipped via the United States Postal Service to the MBF that ordered the currency. Each request costs the DoD $2,500, which is paid to the U.S. Federal Reserve for transporting the currency from the U.S. Federal Reserve Bank in San Francisco to the local Post Office.

D. ALTERNATIVE #1 TRANSPORTATION OF CASH

The United States Postal Service is responsible for transporting currency from a San Francisco Post Office to the local Post Office of the appropriate MBF. The costs of this transaction are two fold. The first cost associated with this delivery method is the actual shipping cost. These costs are determined by weight, based on a standard rate of $7.70 per 70 pound (lbs) box. This equates to $0.11 per pound. Our feasibility study using this alternative will use a range of weight shipped of 8,000 to 12,000 lbs. These weights are based on the actual currency shipped in FY2005 for our status quo analysis. Shipping this weight via the U.S. Postal Service would cost between $880 to $1320 at $0.11 per lb. The second cost associated with this delivery method is the cost of insurance on each shipment. These costs are determined by the dollar amount to be shipped. The insurance cost is $1 for every $100 shipped. Expert analysis revealed that an average Jingle Run shipment can be valued at $15,000,000 to $20,000,000 and would cost the DoD $150,000 to $200,000 in insurance (interview MSgt Harvey, Yokota Comptroller Squadron) (U.S. Postal Service insurance Policy) .

E. ALTERNATIVE #1 ARRIVAL OF CASH

The next area where costs are incurred in the Alternative #1 process is when the U.S. currency reaches the country whose MBF placed the order. The local Post Offices in these countries have inadequate manpower to transport the currency to each individual MBF; it will be the MBFs responsibility to arrange for transport and to incur transportation costs. These charges are similar to the costs associated with transporting the currency from the U.S. Federal Reserve Bank in San Francisco to their local Post Office, approximately $2,500 per shipment.

F. ALTERNATIVE #1 TOTAL SUMMARY OF FY 2005 COSTS

The total summary of the actual FY 2005 costs per Jingle Run alternative #1 currency shipment was determined to be $205,880.00 and $411,760.00 for the two trips completed (January and June). As mentioned in Chapter III, Jingle Runs have historically been performed more frequently, with up to four shipments per year. If this

is the case next year, the costs would increase by $205,880.00 to $411,760.00 per shipment (depending on the amount and weight of currency shipped). All costs associated with alternative #1 are summarized in Table #7 below.

Federal Reserve Bank (San Francisco, CA) contracted delivery to the post office			**Cost/trip** $2,500		**Avg Cost** $2,500.00
Insurance		**Amount Shipped (Range)**		**Cost of Insurance**	
$1 per $100 shipped		$15,000,000.00	$20,000,000.00	$200,000	$175,000.00
Shipping Boxes $7.70 per 70lb. Box		**Weight/lbs** 8000	12000	**Cost per pound** $0.11	$1,100.00
Overseas Local Post Office From the overseas local Post Office to the MBF			**Cost/trip** $2,500		$2,500.00
Total Cost per trip					$181,100.00
Number of Trips				**Probability**	
	2			**25%**	$362,200.00
	3			**50%**	$543,300.00
	4			**25%**	$724,400.00

Table 7. All costs associated with U.S. Postal Service

V. COMMERCIAL BANKING (ALTERNATIVE #2)

A. ALTERNATIVE #2 OVERVIEW

Commercial Banking has made technological leaps and bounds in last 5-10 years and the Air Force could benefit from these technological advances. In researching multi-national air transporters, it was difficult to find one that would ship U.S. Currency, which suggested Commercial Banking. The research led us to think outside normal DoD processes and to seriously consider what we are really trying to accomplish. The requirement is to supply the overseas MBF with currency to run operations in the different areas of operation. Far too often the government and DoD replicate or automate antiquated processes, straps on the buzz word transformation, and pats themselves on the back about accomplishing something, when in fact the DoD essentially re-established the same process and is probably over-paying a contractor to accomplish an identical task. The result could be true transformation, creating efficiency and effectiveness throughout this process, and ultimately saving the DoD money. With this in mind, we shifted our approach for the final alternative for Jingle Runs.

On the Department of Defense's website http://www.dod.mil/bmmp/facts_overview.html Transformation is defined by the Business Management Modernization Program (BMMP) with the following objectives in mind:

> As our nation's security challenges are becoming more complex, our military is transforming into an increasingly agile joint force that is dominant across the full spectrum of military operations in peace and war. The highly flexible, yet precise, Armed Forces of the 21st Century require an equally flexible and responsive business and financial support infrastructure that is capable of adapting to ever-changing conditions.

B. ALTERNATIVE #2 TRANSFORMATION OBJECTIVES

> Business transformation in the Department of Defense (DoD) is being driven by a series of strategic objectives, each of which illustrates a different aspect of the overall challenge:

> ***Support the Joint Warfighting Capability of the DoD*** *— Joint military requirements are driving the need for greater commonality and integration of business and financial operations. The Department's business infrastructure must rapidly respond to the warfighting community and be compatible with the global, networked military it supports.*
>
> ***Enable Rapid Access to Information for Strategic Decisions*** *— Actionable information will accelerate leaders' ability to make better decisions that impact human resource capabilities; the condition, status, and location of assets; and how funds are invested for the warfighting mission.*
>
> ***Reduce the Cost of Defense Business Operations*** *— Streamlined business operations will enable decision makers to deal with growing pressures on resources and ensure every defense dollar is optimally applied for long-term mission effectiveness.*
>
> ***Improve Financial Stewardship to the American People*** *— Improving the effectiveness and efficiency of business processes will enable the Department to better comply with federal accountability laws and regulations. Integrated processes will allow accounting transactions to be traced to their source, yielding consistent financial transparency. (http://www.dod.mil/bmmp/facts_overview.html)*

The third objective, "Reduce the Cost of Defense Business Operations," is exactly what we need to do in regards to the Jingle Run process. Over the last decade, the term Globalization has been popularized and now is being realized. With internet, email, and electronic transfers, the days of sending paper back and forth are quickly coming to a halt. With this in mind, it does not make sense to load up an airplane full of money and fly it to another country, even if that is the way we have always done it. The correct perspective is how can we do it better and what are our options?

The intuitive answer is Electronic Funds Transfers (EFT), and the AF has utilized this method for military and vendor pay for years. So, how can we apply these everyday occurrences to our Jingle Runs? This led us on a search of financial institutions that could facilitate our needs. Our first contact was with the American Banking Association (ABA), where we talked with Mr. Michael Holland (Senior Economist) whose first reaction was to suggest a bank would be the correct facilitator and pointed us to the Union Bank of California in San Francisco, CA.

C. ALTERNATIVE #2 COSTS

Union Bank of California is a subsidiary of the Bank of Tokyo, Mitsubishi Group. This institution has close access to the Federal Reserve Bank in San Francisco that is used in the current process and has ties to Japan where the bulk of the funds are required. We spoke with Mr. Fushito, a manager in the Foreign Currency Department of the bank, and the possibilities exist for a relatively low cost solution to our problem. The following are some of the requirements to maintain a business checking account with the Union Bank of California.

- $100 Fee to establish a new business account
- $ 40 - $ 50 outgoing fee to transfer the funds
- $10 - $ 20 incoming fee to receive the funds in Japan
- $11/month if less than $3,000 daily balance or $6,000 avg. monthly balance
- If you write over 100 checks out of the account ($.35 per check)
- $3/month if you want hard copies of checks written out of the account
- Transportation fee (will use $2,500 established from status quo research)

Mr. Holland (ABA) stated that there are some requirements imposed by the Patriot Act and Money Laundering Legislation to transfer the dollars amounts that would be required to meet our needs. These would have to be investigated at a later time if this option was chosen for the Air Force. Also, any transfers over $10,001 requires the sender to complete a Currency Transaction Register (CTR) to complete the transfer.

This goes back to some fundamental business practices: it is important for companies, or in our case the government to focus on core competencies. In other words, allow the companies that have the core competency of dealing in money to handle money transfers for the Jingle Runs. By establishing a business checking account with Union Bank of California the potential of savings to the government are significant. The transfer costs would vary between $50 - $70 per transaction. This would totally eliminate the need for armored car service in the U.S., as the Treasury could wire the money to the

bank and the bank in turn would wire the currency to Tokyo. This would not only eliminate the travel time for the currency but be a much safer mode of transportation.

D. BENEFITS OF ALTERNATIVE #2

At this point, the choice appears to be obvious; establishing one business account with Union Bank of California which provides access in both locations to deposit stateside and withdraw funds from Japan is the right way to transform our Jingle Run process. However, there are some considerations that need to be ironed out before we can establish this new process. Because the military moves people every two to three years, you would have to decide whose name is on the account on both the U.S. and Japanese sides for access to the currency. Our suggestion would be to have a civilian from HQ PACAF establish and maintain the account. This would alleviate changing names on the accounts every two years when someone rotates do to a change of station. However, policies and procedures would need to be put in place for reconciling these accounts, and have internal controls in place for checks and balances so that we would not leave the government open for fraud, especially with the dollar amounts that are being moved overseas. These considerations would have to be fully investigated to ensure that this is a manageable option for PACAF and the USAF. However, we are confidant that our comparative analysis using a cost model and Monte Carlo simulation will reveal a tremendous savings to the government and DoD. All costs associated with alternative #2 are outlined in Table #8 below.

Complete Cost for Commercial Bank Alternative		**Avg Cost**
New Account Fee		$ 11.00
Outgoing Transfer Fee per transfer		$ 45.00
Incoming Transfer Fee per transfer		$ 15.00
Transportation from National bank to MBF		$ 2,500.00
Maintenance Fee for balance under $6,000		
Monthly Check writing Fee		$ 3.00
Total Cost per Transaction		$ 2,574.00
Number of Transactions	Probability	
2	**25%**	$ 5,148.00
3	**50%**	$ 7,722.00
4	**25%**	$10,296.00

Table 8. All costs associated with Commercial banking alternative

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VI. COST MODEL FORECAST AND RECOMMENDATION

A. THE COST MODEL

Completing this feasibility study, analyzing the cost efficiency of the current Jingle Run process against two viable alternatives requires two final comparative steps. The first step takes all costs gathered through research for the status quo process and formats these costs into a complete cost model. The second step uses the cost model created for the status quo option, containing many probabilistic costs, and use Monte Carlo simulation to predict these costs for each option within 90% certainty. Once forecasted costs are established for the status quo, we will compare these forecasted costs against the costs of our proposed alternatives and the most cost efficient process to fulfill U.S. currency requirements for Japan and Korea.

Creating our cost model was critical to establishing a format outlining all costs associated with each process. To create the cost model, all costs for the status quo option that were outlined in Chapter III was compiled into an excel spreadsheet and assumption cells were created giving a range of possibilities for our status quo variable costs. These ranges of possibilities represent the probabilistic costs involved with each alternative. For example, when labor is used for each option this labor can be performed by a range of personnel with different ranks, which would in turn impose a range of different costs on the Air Force. Next, our alternatives explored in chapters IV and V were formatted into an excel spreadsheet, which makes up the rest of the cost model. A comparison was performed between our forecasted status quo costs and the given costs of our alternatives.

B. MONTE CARLO SIMULATION

Monte Carlo simulation has revolutionized the tools of analysis that decision makers have available before making critical decisions. "The basic idea of simulation is to build an experimental device, or simulator, that will 'act like' (simulate) the system of interest in certain important aspects in a quick, cost-effective manner" (Moore and Weatherford, 460). In other words, simulation allows an event to be experienced repeatedly without the expensive physical attributes of live simulation. In addition,

simulation takes into account the variation of costs in a certain model; the status quo Jingle Run process has many probabilistic costs to consider. We relied upon Monte Carlo simulation to accurately predict costs for the current process for thousands of simulated "trips" given the tremendous variability. By simulating costs for the current process for thousands of theoretical trips and comparing those costs against the two alternatives, we can be relatively certain that the chosen alternative will be cost effective. For this project, 90% certainty was used as the goal for simulation, meaning that we wanted to run enough simulations to be 90% certain that the cost forecasted for our status quo process would be accurate. The probabilistic costs that will be simulated throughout the analysis will follow a normal probability distribution. Essentially, when analyzing the range of our variable costs the probability will be distributed evenly around the mean or average of the range of costs. With 90% certainty, the results of our decision mean that we are confident that our recommendation is the most cost efficient. Monte Carlo simulation will be a powerful decision making tool for predicting the cost of Jingle Runs and identifying the most cost efficient process.

C. RESULTS OF THE SIMULATION

To confidently give AF leadership our recommendation, we ran Monte Carlo simulation on our status quo cost model 10,000 times. This randomly compiled our probabilistic costs at different values 10,000 times and forecasted the cost distribution for each option given all the different cost ranges. After 10,000 cost iterations on the status quo option the average cost per trip is $34,368.36, and an average annual cost given the probability of multiple trips is $103,105 (see Attachment #8 for forecasted output). The likelihood of multiple trips, as discussed earlier in Chapter 3, was a 25% probability that two trips would be performed, a 50% probability that three trips would be performed, and a 25% probability that four trips would be performed. After forecasting the status quo model, we can see that with 90% certainty the cost per trip for the status quo will be $35,822 or less. Now that an accurate forecast has been made of the status quo cost, taking into account the range of potential costs, a comparison can be performed between

the status quo and each alternative. Tables #9 and #10 show the forecasted cost for the status quo costs given our variable costs.

1. Pacific Funding Unit				**COSTS**
(Yokota)				
Flight Costs Yokota - Travis			1400	1400
Manpower Costs	Hourly Pay	# of days		
Deputy Disbursing Officer	28.22	6		$ 1,354.56
Courier 8 hr day	26			$ 1,248.00
Courier 8 hr day	26			$ 1,248.00
2. Federal Reserve Bank				
Contracted Cost	$ 2,500.00			$ 2,500.00
3. Travis AFB Aerial Port Sq.	Weight of Cargo			
Flight Costs Travis-Yokota	11000	$1.36		$14,960.00
Manpower Costs	Hourly Pay	Hours Required		
Security Forces (4 officers)	26	8		$ 832.00
Loaders (2)	23.45	4		$ 187.60
4. Pacific Funding Units	Weight of Cargo			
Flight Costs Yokota-Korea	4500	$ 1.36		$ 6,120.00
Manpower Costs	Hourly Pay	Hours Required		
Supervisor	26	6		156
Loaders (4)	17	24		408
5. Regional Bases	Return Conex Box			
Flight Costs Korea - Travis	1435	$1.36		$1,951.60
Flight Costs Kadena - Travis	1435			$1,951.60
	Hourly Pay	Hours Required		
Manpower Costs	17	3		$ 51.00
# of Trips	2	3	4	
Probability	25%	50%	25%	
Projected Cost for 1 Trip	$ 34,368.36			
Projected Total Costs per yr based on Probabilities			$ 103,105.08	

Table 9. Breakdown of variable costs for status quo process caption must be on same page as Table

Table #10 Forecast: Cost of 1 Trip Statistic	Value	Forecast: Percentile	1 Trip Value	2 Trips	3 Trips	4 Trips
Trials	10,000	**0%**	$29,707	$59,413	$ 89,120	$118,827
Mean	34,393.16	**10%**	$32,918	$65,837	$ 98,755	$131,674
Median	34,397.13	**20%**	$33,431	$66,862	$100,293	$133,724
Mode	---	**30%**	$33,806	$67,612	$101,419	$135,225
Standard Deviation	1,134.63	**40%**	$34,113	$68,226	$102,339	$136,451
Variance	1,287,387.66	**50%**	$34,397	$68,794	$103,191	$137,589
Skewness	-0.03	**60%**	$34,683	$69,366	$104,049	$138,732
Kurtosis	2.94	**70%**	$35,004	$70,008	$105,012	$140,016
Coeff. of Variability	0.03	**80%**	$35,365	$70,729	$106,094	$141,459
Range Minimum	29,706.73	**90%**	$35,822	$71,645	$107,467	$143,289
Range Maximum	38,800.82	**100%**	$38,801	$77,602	$116,402	$155,203
Range Width	9,094.09					
Mean Std. Error	11.35					

Table 10. Monte Carlo Simulation report for status quo variable costs

D. COMPARISON AND RECOMMENDATION

This report will consider both quantitative and qualitative results before making a final recommendation to Air Force Financial Management leadership. First a comparison of the status quo compared against alternative #1 U.S. Postal Service will be performed. Clearly, the research showed that while shipping currency is cost effective, insuring the currency is not. Chapter V and Attachment 5 outlined all the costs associated postal service shipment and estimated the annual cost to range from $311,000 to over $800,000. Comparing this to our forecasted cost of the status quo, we can be 100% sure that even with all our probabilistic costs at the highest end of the range, the status quo will only cost $155,000, significantly less than this alternative. While shipping currency through

the postal service would free up much needed AF manpower resources, this alternative does not make economic sense due to response.

The next comparison is the status quo costs against the commercial banking alternative. It is clear from the costs outlined in Chapter V and Attachment 7 that this alternative is very cost efficient. In fact, even if our forecasted status quo cost were to come in at the lowest possible cost scenario, the commercial banking alternative would still carry a significantly lower price tag than the status quo. The least expensive status quo cost, involving the lowest scenario for all costs coupled with only 2 trips/per year, totals around $59,000 (Attachment 2); the highest commercial banking cost with two trips/per year would be slightly over $5,000 (Attachment 7). In addition to tremendous dollar savings from the commercial banking alternative, the AF would free up many hours of critical manpower that could be applied to mission critical tasks. This manpower is very valuable given the AF's current constrained environment. The significant dollar and manpower savings possible leads our study to recommend that the AF Financial Management leadership pursue a commercial banking alternative for transporting U.S. currency to meet the needs of all MBFs in Japan and Korea.

By utilizing an innovative commercial sector alternative to military performed "Jingle Runs", the AF will undertake a transformational initiative. Business transformation; "improves operating effectiveness through redesigning critical business processes and supporting business systems" (John Mutty, Certified Defense Financial Manager course curriculum). With monetary and personnel constraints put upon the Department of Defense in the current operating environment, it is important to pursue transformative business practices that will allow our armed forces to work smarter, not harder. By re-engineering the current Jingle Run process, we believe the AF will tremendously benefit from this enormous cost savings.

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LIST OF REFERENCES

1) MN 3331; Principles of Systems Acquisition and Program Management course at NPS taught by Dr. Rene G. Rendon.

2) OA 4702; Cost Estimation course at NPS taught by Lt Col Greg Mislick.

3) GB 4510; Strategic Cost Management course at NPS taught by Professor John Shank.

4) Interview; MSgt Ed Harvey; Senior Non-commissioned officer; Yokota Comptroller Squadron, Yokota AFB, Japan; includes numerous email correspondence.

5) Interview; Ms. Corliss Smith; Travis Air Force Base Aerial Port Squadron Logistics Analyst; Travis Air Force Base, California.

6) Office of the Secretary of Defense (OSD) published military financial compensation, http://www.dod.mil/militarypay/pay/calc. [Accessed 11/2005].

7) California Federal Wage Grade Pay Scale, http://www.cpms.osd.mil/wage/scheds/af/survey-sch/018/018F-10Jan2005.html. [Accessed 08/2005].

8) AMC Logistics Database which records all costs for shipped cargo from Travis AFB.

9) DoD Financial Management Regulation Vol 5, Chapter III, http://www.dod.mil/comptroller/fmr/05/05_03.pdf. [Accessed 11/2005].

10) Interview; customer service representative, Monterey United States Postal Service.

11) DoD's Business Management Modernization Program Website, http://www.dod.mil/bmmp/facts_overview.html. Accessed [11/2005].

12) Interview with Mr. Michael Holland (Senior Economist); American Banking Association.

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