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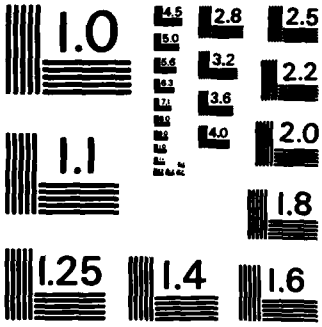

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INTERNATIONAL AIR FREIGHT
FORWARDING SUPPORT
FOR THE UNITED STATES NAVY

by

Robert H. Lake, Jr.

June 1985

Thesis Advisor: D.C. Boger

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An Analysis of International Air Freight Forwarding Support For the United States Navy

by

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Lieutenant, United States Navy
B.S., Towson State University, 1976

Submitted in partial fulfillment of the requirements for the degree of

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I. INTRODUCTION

A. GENERAL

In 1949 the Civil Aeronautics Board (CAB) granted the necessary exemptions enabling U.S. commercial companies to act as overseas and foreign indirect air carriers. In 1948 the Military Air Transport Service (MATS) was formed consolidating the long-range airlift capability of the Air Force and Navy for the purpose of transporting military passengers and freight on scheduled flights. In 1966 MATS became the Military Airlift Command (MAC).

The Navy Material Transportation Office (NAVMTO) is the Airlift Clearance Authority (ACA) for the Navy and, as such, is responsible for the movement of Navy material by air. Burlington-Northern International Air Freight, Inc. (BNIAFI) holds the Navy contract for consolidation of contractor high priority freight that is destined for overseas and deployed units. They are only secondarily utilized as a forwarder.

Current Department of Defense (DOD) policy calls for all Navy material over 150 pounds destined for overseas movement to meet priority, required delivery date (RDD), and weight requirements, as well as to be given clearance authority by NAVMTO prior to forwarding by air. Only when NAVMTO determines that MAC can not meet the RDD requirement based on Uniform Material Movement and Issue Priority System (UMMIPS) time standards is the freight given authority to be forwarded by commercial means.

The intent of this thesis is to look at the international air freight forwarding support for the Navy and determine how it is being utilized. Any alternatives to the current Navy policy for international air freight forwarding

must ensure that no visibility or traceability is lost in the freight movement.

B. OBJECTIVES

The objectives of this thesis are to determine how the Navy is utilizing international air freight forwarder support and if there is the possibility that it could be more effectively utilized.

C. RESEARCH QUESTIONS

Given the aforementioned objectives, the following primary research question was postulated:

How is the Navy utilizing the international air freight forwarder to support its overseas and deployed units?

The following secondary questions were considered pertinent in addressing this research question.

1. What is DOD and Navy policy concerning the movement of high priority freight to overseas and deployed units?
2. How does this policy affect Burlington-Northern's ability to function as an international air freight forwarder for the Navy?
3. Could the Navy better utilize international air freight forwarders?
4. What is the future of international air freight forwarding support for the Navy given present regulations?
5. What does Burlington-Northern do effectively that could be of increasing benefit to the Navy in the movement of high priority freight overseas?

6. How effective is MAC at delivering air freight within the UMMIPS time standards?

D. SCOPE

The scope of this study will be limited to high priority contractor freight destined for overseas and deployed Navy units. This high priority freight consists of contractor freight, which is material that has been contractually specified for delivery to Burlington-Northern for onward movement to its ultimate destination and possibly other freight as designated by NAVMTO. It does not include passengers. Burlington-Northern is a representative international air freight forwarder in the strictest sense of the forwarder not owning aircraft.

The Navy uses commercial carriers for their domestic freight operations (QUICKTRANS) but this is outside the scope of this study. The analysis of alternative rate structures is limited to a comparison between MAC and the commercial international air freight forwarder at the express service level (70 pounds or less) only. Freight above the express level is considered "hard freight" and this cost data is considered confidential by Burlington-Northern and the Navy. The MAC cost data at every level was readily available.

E. ASSUMPTIONS

Throughout this study it is assumed that the reader is generally familiar with standard Department of Defense terminology. No comparative study of the rate structures between the MAC system and the commercial industry internationally for freight above 70 pounds will be done as the commercial data is unattainable, constantly changing, and renegotiable. It is assumed that larger volumes of freight

tonnage can be negotiated at a lower cost per pound than express rates within the forwarder community. A further assumption is that MAC will continue to operate in areas that service Navy overseas bases and deployed units, is flexible in meeting Navy needs in emergency situations, and will not be allowed to fly these routes empty.

F. METHODOLOGY

The research methodology utilized in development of this thesis consisted of a comprehensive review of literature, and the use of telephone interviews with government and air freight forwarder industry transportation specialists.

The literature was acquired through the Naval Postgraduate School Library, Defense Logistics Studies Information Exchange, service guides provided by air freight forwarders, and MAC airlift data. Additional data were obtained from current DOD regulations and instructions, and current Navy manuals and instructions. Telephone interviews were conducted with transportation specialists at the Naval Supply Systems Command and Burlington-Northern Air Freight, Inc..

G. ORGANIZATION

This thesis consists of six chapters. Chapter II gives the historical perspective of the air freight industry and the air freight forwarding industry both nationally and internationally. Chapter III contains an evaluation of Burlington-Northern Air Freight, Inc. as a representative of the commercial U.S. international air freight forwarder. Chapter IV provides a look at the DOD and Navy policy on overseas air shipments. Chapter V is an analysis of international air freight support for the U.S. Navy. Chapter VI summarizes the analysis and presents conclusions and recommendations.

II. HISTORICAL BACKGROUND

To arrive at a comprehensive understanding of the role of international air freight forwarding as it relates to support for the United States Navy today it is important to begin at the establishment of the commercial air freight industry, look at the U.S. domestic and international environment, and the evolution of air freight forwarding, both domestically and internationally.

A. U.S. DOMESTIC AIR FREIGHT INDUSTRY

Although freight has been carried by aircraft since the earliest days of aviation it was not until December, 1940 that the first all -freight service was offered. In that year United Air Lines instituted all-freight service between New York and Chicago [Ref. 1: p.15].

It was World War II that provided a tremendous impetus to the air-freight industry. After World War II a number of ex-servicemen purchased military surplus aircraft and acted as supplemental carriers (under section 292.5 of the economic regulations of the Civil Aeronautics Board) [Ref. 1: p.15].

These new supplemental carriers then applied for certificates of convenience and necessity to offer scheduled air freight service and immediately met stiff resistance from the certified dual-service airlines who objected on the grounds that the all-freight carriers would take business from their operations. The Civil Aeronautics Board (CAB) did not agree with the dual-service airlines and authorized the non-certified carriers to operate in January, 1947. The certified carriers retaliated with a rate war which resulted

in only six of the original fourteen all-freight carriers remaining solvent by the end of 1947. In July, 1948 the CAB attempted to protect the all-freight carriers by establishing minimum rates which applied to all air carriers [Ref. 1: p.15].

By July, 1949 the CAB issued five year certificates on an experimental basis for scheduled all-freight operations to four carriers. Certified airlines again protested that these all-freight operations were not necessary since the certified airlines had experienced excess capacity since 1945. "The CAB was convinced that these new carriers would introduce new methods and managerial improvements in their business and would also provide a valuable yardstick to monitor the efficiency of other carriers of air freight." [Ref. 2]

During the same period of time the CAB established a classification of indirect air carriers to fill the gap between air express (the priority air movement of freight) and air freight services (the movement of freight through scheduled operations). These indirect carriers were designated as air freight forwarders and functioned as the consolidators of small shipments of air freight by air carriers.

B. U.S. INTERNATIONAL AIR FREIGHT INDUSTRY

International air freight services have traditionally been offered through bilateral agreements patterned after the Bermuda Agreement[1] signed between Great Britain and the United States. The commercial rights exchanged in these bilateral treaties authorize designated airlines to

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[1]A brief review of the Bermuda Agreement can be found in N.K. Taneja, The Commercial Airline Industry (Lexington, Mass: Lexington Books, 1976), chapters 1,14; and B. Cheng, The Law of International Air Transport (New York: Oceana Publications, 1962).

transport passengers and freight between the contracting countries and sometimes beyond. Governments attempt to protect the interests of their own airlines during these negotiations, and often the aviation interest is an integral part of national policy. The U.S. government has also attempted to do this, although at times it was difficult given the private ownership of the U.S. airlines and the fragmented nature of U.S. aviation policy [Ref. 3]. The U.S. government generally attempts to exchange rights of approximately equal monetary value. The bilateral agreements, initially negotiated to cover passengers and freight (including mail), also cover the all-freight aircraft operations.

In recent years the Bermuda framework has been questioned because of its apparent inflexibility to meet changing economic and market conditions. The original Bermuda agreement was revised on July 23, 1977, to make the operating authority more equitable between the U.S. and British carriers. With respect to all-freight service, the agreement called for a maximum of three U.S.-designated carriers that could offer trans-atlantic service between any of seven U.S. gateways (Boston, Chicago, Detroit, Houston, Los Angeles, New York, and Philadelphia) and three points in the United Kingdom (London, Manchester, and Prestwick/Glasgow). In addition, the beyond points included Belgium, the Netherlands, the Federal Republic of Germany, Turkey, Lebanon, Syria, Jordan, Iran, and India. The terms of the new agreement did not deviate very much from the existing services except that it did put a capacity limit on the total number of designated carriers. In addition, it was agreed that the two parties would enter the negotiations with respect to all-freight charter arrangements as soon as possible, but not later that December 31, 1977 [Ref. 4]. The charter agreement was signed on April 25, 1978, and the

provisions with respect to the freight service were largely based on country-of-origin rules, including arbitrary volume restrictions on forwarder chartering.

Instead of following the Bermuda type of agreement with other nations, the U.S. government established an open-skies policy objective with respect to passenger transportation, hoping that it would lead to more efficient, lower cost transportation options for freight shippers. On August 21, 1978, President Jimmy Carter issued a comprehensive statement setting forth the U.S. policy for the conduct of international air transport negotiations. Although this statement did recognize a need to encourage flexibility in freight operations, it was primarily addressed to passenger issues.

Since passenger and freight operations differ significantly, it is erroneous to assume that the policies adopted to meet passenger objectives would also achieve equally desirable results of air freight users. For example, there is some evidence that compared to passenger transportation, air freight is more sensitive to service than price [Ref. 5]. Air freight sometimes has to meet critical time frames where delay could be costly. Therefore, the service provided is more critical than the delivery price. Second, unlike passenger transportation, air freight movements are normally one way. Third, most passengers generally require convenient daytime schedules, but some air freight shippers prefer late evening or nighttime departures, allowing early morning deliveries at the destination. Fourth, city-pair service demands for air freight may not coincide with principal passenger markets. Fifth, freight requires a wide range of ground-handling services (Table I). Sixth, air freight is heterogeneous, ranging from courier packs to forty-foot containers. Because of these differences between passengers and freight, it appears that air freight

requires a different view in international aviation negotiations.

At the present time there is no explicit long-range U.S. international air freight transportation policy.

C. U.S. AIR FREIGHT FORWARDING

An air freight forwarder, defined in simple terms, is one who buys transportation (from the airlines) at wholesale, and sells it (to a shipper) at retail. The forwarder derives revenue from the transportation of consolidated freight. An air freight forwarder can also be a freight agent,[2] particularly in international operations.

Air freight forwarders are listed as industry code number 4712 in the Standard Industrial Classification System. The industry has a relatively high degree of concentration. A large initial capital investment is not required and does not represent a high barrier to entry, or provide for an operational advantage. An air freight forwarder is the middleman between shipper and airlines and supplements the ground and marketing services offered by airlines. In major metropolitan areas air freight forwarders usually operate their own fleet of trucks or establish service contracts with independent truckers.

The U.S. air freight forwarding business has become a significant segment of the air freight industry. The revenue in the industry has grown at a rate of well over 20 per cent per year during the last ten years. Within the industry some forwarders have experienced phenomenal growth. Burlington-Northern Air Freight, Inc., for example, has become the second largest tonnage air freight forwarder

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[2]Forwarders earn a profit from the rate spread between what they charge customers and what the carriers charge them. Agents receive a percentage fee from the direct carrier for freight they book for the air carrier.

since it started operations in 1972. This fast growth has been realized despite the existence of regulatory constraints and coordination problems between forwarders and airlines with respect to service, rates, and competition.

Forwarders are in one sense the biggest customers of the airlines; in another sense they are competitors. Some see their role merely as a consolidator and/or expeditor; others see themselves more as architects of transport. Either way, now that the air freight regulatory environment has been changed, it is an ideal time to take stock of past constraints and new stimulants to the development of this segment of the industry.

1. Regulation of Air Freight Forwarders

Regulation of air freight forwarders dates back to the early 1940's when the CAB temporarily relieved the Railway Express Agency (REA) from the requirements of section 401(a) of the 1938 act to enable it to engage in the transportation of property without obtaining a certificate of public convenience and necessity [Ref. 6]. The REA was in the air express business under contract with the airlines, and at that time air express was the only form of air freight.

Air freight service was inaugurated in October 1944 when American Airlines filed the first air freight tariff. Within two years, almost all of the trunk carriers were offering air freight service, leading to an increased interest in air freight forwarding. Development of forwarding was also spurred by the expansion of non-scheduled airline operations and freighter flights by the scheduled carriers after World War II [Ref. 7].

Although there were no empirical data at the time to determine the need to certify air freight forwarders, the CAB concluded that certification was in the public interest,

at least on a temporary basis. Furthermore, because the air freight forwarders were not going to operate aircraft, there was no need for the CAB to determine if they were fit, willing, and able, within the meaning of section 401 of the act. As such, forwarders were required only to obtain a minimum amount of insurance to protect the shippers, to pay freight bills to the airlines in a minimum period, and to file quarterly statistical reports [Ref. 8]. No limits were set on the number of firms that could enter the industry or the number of points that a forwarder could serve. Initially letters of registration were issued to fifty-seven forwarders for a period of five years.

At the end of the five year experiment, the CAB reviewed the results to determine a sound policy for the future regulation of this industry. It concluded that the services offered by the forwarders were accepted by and benefited the shipping public, stimulated development of air freight at no cost to the government, and provided efficient ground-handling services, and advertising for air freight [Ref. 9]. Letters of registration was eliminated in favor of operating authorization with the duration of authority changed from temporary to indefinite.

The CAB continued its free-entry policy which allowed air freight forwarders to obtain domestic authority easily. In addition, the CAB approved, on an experimental basis, the applications of firms controlled by railroads to operate as air freight forwarders. Previously, such applications were denied due to possible conflict of interest between air and surface operations.

A number of other decisions by the CAB influenced the air freight forwarding industry during the 1950's. First, the CAB approved joint loading among forwarders to attain much larger consolidations, leading to the availability of lower rates to forwarders and, in turn, the

shipping public. Second, the CAB allowed forwarders to charter as well as joint charter aircraft. Third, the CAB did not impose minimum rates on forwarders although such rates had been imposed on the airlines [Ref. 10].

During the 1960's the CAB had to make important policy decisions with respect to the entry of motor carriers into the air freight forwarding industry. In 1964, the CAB had authorized a number of motor carriers to enter the industry to handle household goods, as defined by the Interstate Commerce Commission (ICC) [Ref. 11]. It was hoped that these carriers would generate new air freight opportunities by stimulating development in the smaller cities and encouraging intermodal carriage of freight by air and truck.

The next decision to have a major influence on air freight forwarders was the CAB's ruling in the Express Service investigation, on December 7, 1973. Until this time, the REA had held a monopoly on air express, a service provided jointly by the REA and scheduled air carriers to transport small shipments expeditiously. In this investigation, the CAB decided to discontinue the air express service and to license the REA as a forwarder. The CAB's opinion was that it was time to establish a dependable small package service, which an freight forwarder could not do as long as the REA continued to exist with its low rates. This gave air freight forwarders an opportunity to expand.

Finally, with the enactment of Public Law 95-163 on November 9, 1977, the CAB classification of express service ceased to exist. This finished the CAB's regulation of the air freight forwarding industry. Deregulation had been found to produce a more competitive market environment.

2. Air Freight Forwarders Today

In 1982 forwarders like Burlington-Northern Air Freight, INC (BNAFI) were still using the airlines to ship freight and continuing to refuse to purchase planes for their own use. BNAFI has long fought these direct carrier operations, but by 1984, it too, is considering the possibility of a hub nationally, to complement its common carriage lift. Some large forwarders, such as Emery and Airborne, are flying freight on planes that they own.

A shipper putting together the proper combination of price and service in today's deregulated airline world is perhaps more confused than he once was. But the opportunity is generally available for getting more and better service at the right price. This is because there is more competition offering wider services with different price packages. Forwarders are leaning more to contract carriage which provides the lowest cost service tailored to specific customers because, under the contract, consistent volume is guaranteed. There appears to be no such thing anymore as an emergency shipment since most shipments can be delivered overnight, if desired by the shipper. Competition in services has reached such a point that small-package specialists are even using costly helicopters to get around traffic jams and beat the competition to delivery [Ref. 12].

D. U.S. INTERNATIONAL AIR FREIGHT FORWARDING

The applications for international air freight forwarding authority followed similar paths. In 1949 the CAB granted fifty companies certification to engage in overseas and foreign air freight operations as indirect air carriers for a period of five years. Leaving aside the need for expedition, just the documentary complexities and financial problems involved with international shipments ca.

for services of forwarders. These certifications were renewed again in 1954 for five more years. Finally, in 1958 the CAB granted operating authority to all international air freight forwarders for an indefinite period.

The U.S. international air freight forwarders, most of them acting also as carriers, have been responsible for most of the functions of the distribution system. Both carrier and forwarder can and do provide services that are offered principally by the other, and the division of responsibility is often disputed. Table I outlines the functions and stages of outbound air freight distribution and illustrates the areas of overlapping responsibility.

In contrast to airlines, the role of forwarders encourages them to think in terms of a total transportation system for customers. They relate the customer's requirements and the characteristics of air transport together. In recent years, they have extended their activities to integrate various distributive functions more completely [Ref. 13]. For example, there has been cooperation between forwarders in different countries so that both ends of the distribution chain are covered. Some of the larger forwarders undertake extensive consolidation work and are now involved in charter brokering. Additionally, the larger ones are establishing offices in key areas overseas and providing on-line computers to monitor shipments in transit.

In an effort to expand international operations, forwarders resorted to various strategies. BNIAFI, in 1984, bought a British freight forwarder. Lufthansa started "collect and deliver", a door-to-door trans-atlantic service. Air France started airport-to-airport express for small, international shipments. No one yet has a complete network that would duplicate the U.S. hub systems within the United States. However, the combination of joint and individual efforts is moving in a close approximation. These

hub systems serve as connection points for passengers arriving from short and intermediate haul flights from smaller cities and departing on outbound similar flights or long-haul jumbo planes. U.S. Air employs this concept at Pittsburgh, United at Chicago, Denver and San Francisco, and Delta and Eastern at Atlanta. At these cities a major proportion of enplaning passengers are not originating from the hub city itself.

Forwarders such as Air Express International (AEI) and BNAFI, who are still reluctant to go into direct aircraft operations 100 per cent, are looking to Flying Tiger Airline, or perhaps Evergreen who are freight only airlines, to provide a common carriage, prime-time service to compete with the private system of regular airline freight carriers [Ref. 14].

The international picture is far more complex than that within the U.S. The forwarders in the business are continuing to predict an explosion in international service. Increased exporting, importing, and offshore operations of domestic shippers are forcing more service. The additional forwarder activity (for now, limited abroad to chartering vice owning aircraft) plus new airline entrants have caused a reduction in freight market share for traditional transatlantic airlines [Ref. 15].

1. Pacific Outlook

Pacific trading looks good for importing only. The carriers had huge backlogs of incoming freight in 1984, and will probably continue while the dollar's strength encourages imports. Westbound rates will probably hold. However, eastbound is still a shipper's paradise. Capacity is going up. Flying Tiger Airline has a new service that includes freight flights to Singapore and Hong Kong to go along with a total of 138 flights to other locations in the Pacific.

Japan Air Lines, held down by bilateral and financing considerations, is remaining stable. Given the tight regulation of Japan-U.S. operations, however, shippers probably should not expect the quantum leaps in service until a large freight carrier is permitted access [Ref. 16].

2. The Role of IATA in Ratemaking

Factors other than shipper demand and carrier costs affect international freight rates. For one thing, the International Air Transport Association (IATA), a cartel to which 135 air carriers belong, sets international passenger and freight rates. These rates are subject to government approval in each country. For example, U.S. carriers that were party to any IATA rate agreement were required to file economic data with the CAB. The board then would scrutinize return-on-investment and other such factors to determine if a rate hike was warranted.

The IATA's role in setting air rates in this country may be changing, however. A recent court case will affect the way in which the U.S. government approves international freight rates submitted by the cartel. The case in question was brought against the CAB by the Electronic Shippers Association, an ad hoc group of ten shippers in the electronics industry. The shippers objected to a proposed IATA rate hike for air shipments in the North Central Pacific (part of the so-called Geneva May 1983 IATA rate package) and challenged a 1983 CAB policy (PS-109) that permitted wider latitude in approving international air-freight tariff increases. Under that policy, the CAB had allowed international airlines to file increases if the hikes fell within a pre-set range commonly called the Standard Foreign Rate System. In September, 1984, however, the U.S. Court of Appeals for the District of Columbia Circuit ruled that the CAB could not apply that policy to

rate agreements made by groups of airlines. According to Herb Aswall, who was the division chief for international rates and fares at the CAB, "The court said, 'You determine whether a rate hike is justified the way you did in the past or develop a new way that's satisfactory to the court.'" As far as shippers are concerned, the court case means that U.S. government approval for IATA rate agreements will probably be delayed while federal officials decide how to meet the court's requirement. Proposed IATA rate hikes in several lanes have been held up by the CAB because of the suit [Ref. 17].

In any case, the new policy toward justifying air freight fares now will be worked out not by the CAB but by the Department of Transportation (DOT), which took on the regulation of international air carriers with the termination of the CAB in January, 1985. CAB personnel have been transferred to one of six sections within the DOT. A newly created DOT section, the Office of Aviation Operations, is expected to deal with rate matters. Just what the DOT's assumption of civil aviation regulatory matters will mean for air shippers is unclear. "There's bound to be some impact, but it's difficult to say just how it's going to affect us," says Richard M. Loughlin, who was chief of the regulatory affairs division in the Bureau of International Aviation at the CAB.

3. Current Environment

In today's environment there is greater demand for door-to-door service [Ref. 18]. If a company does not offer this service they simply are not competitive. Another trend which goes hand-in-hand with door-to-door service is a single pricing standard for shipments. The single price includes the pickup charge, documentation charge, airport-to-airport movement cost, customs clearance fee, and

delivery charge. The only fee not included is the customs duty charge. To speed up customs, there are facsimile systems being used to send the necessary documentation to a designated customs point, ahead of the shipment itself.

TABLE I

The International Air Freight Distribution System Outbound Movement

OPERATIONS	STAGE	FUNCTION	RESPONSIBLE AUTHORITY
	Documentation of goods, invoices, bills of lading	Information handling	Consignor
	Packaging	Packaging	Consignor/Forwarder
Ground	Transportation to air port	Transport	Consignor/Forwarder/ Carrier
	Documentation for movement by Air-waybills/ Transportation Control Movement Document	Information handling	Forwarder/Carrier
	Processing shipment for loading-consolidating	Materials handling/ packaging	Forwarder/Carrier
	-storage	Warehousing/ Inventory control	Forwarder/Carrier

Table I (cont'd)
The International Air Freight Distribution System
Outbound Movement

OPERATIONS	STAGE	FUNCTION	RESPONSIBLE AUTHORITY
	Documentation for shipment on specific flights-manifest-customs documents	Information handling	Forwarder/Carrier
	Transfer to aircraft	Materials handling/ Transport	Forwarder/Carrier
Aircraft	Loading	Materials handling	Carrier
	Aircraft operation	Transport	Carrier

Source: (Airfreight-Operations, Marketing, and Economics, Peter S. Smith, Faber & Faber Limited, 1974, p57.)

III. BURLINGTON-NORTHERN AIR FREIGHT, INCORPORATED

A. SELECTION PROCESS FOR A REPRESENTATIVE FORWARDER

In deciding on what air freight forwarder to choose as a representative of the international air freight forwarding industry, there were three choices. First, there was the air carrier who supplemented his airlines with international air freight forwarding. Second, there was the international air freight forwarder who chartered or leased all of h airplanes. Third, there was the forwarder who schedu outbound freight on the most convenient airline servicing the destination and charters an airplane only in those instances where airline service is not available. The first two kinds of international air freight forwarders were eliminated as being constrained in flexibility which leads to less customer service options. The third category of forwarder was the most representative of the flexibility desired for the Navy.

Burlington-Northern Air Freight, Inc.,(BNAFI) represents the thi 1 category of forwarder and. within this category, was chosen for analysis for two add onal reasons. First, they have grown to become the second (third) largest air freight forwarder nationally (internationally) in just fourteen years. Second, they currently hold the Navy contract for consolidation of contractor high priority requisitions that are destined for overseas and deployed ship units.

B. HISTORY

1. National Operations

BNAFI began operations in mid-1972 in an industry with more than 300 U.S. companies already in existence. They entered air freight forwarding in the first place because they "recognized an opportunity to handle air freight better than the way it currently was being handled. Also, the BNAFI parentage, and its good name, contributed a lot." [Ref. 19] The company philosophy is to attract and hold better people, by motivating them to perform beyond the routine. They motivate their managers by giving them local autonomy and they encourage team cooperation from top to bottom. In a phrase: "better people, better managed, and better motivated." [Ref. 20]

In the beginning, BNAFI went after the big regular shipper business. For the most part this consisted of large industrial shipments for major manufacturers. Subsequently, BNAFI broadened its line to include small packages for a better mix of freight.

Unlike many of its competitors BNAFI, does not fly its own planes (the critical distinction between an air freight forwarder and a carrier). Instead, space is booked on scheduled airlines, maximizing flexibility and minimizing capital expenditures. This low-cost strategy has caused problems for some of BNAFI's competitors.

In 1976 the number of BNAFI freight forwarder regions increased from two to eleven. This provided stronger direction and leadership at the local station level and relieved the General Office of those activities that could be better managed at the regional level.

In 1981 BNAFI reported that it had out performed the industry in every one of the ten years it had been in business. Their rationale for staying out of the airline

business was for a more objective and flexible scheduling of their customers' freight and a more efficient fiscal management of their operations.

In 1982 BNAFI was the largest domestic air freight forwarder in the United States. Their worldwide air shipments provided more than 322 million pounds to the airlines. It was the largest single source of non-military commercial air freight and freight revenue in the free world.

BNAFI departed from its general policy of not getting into the airline business when, in 1983, it chartered its own planes. This was done only as a last resort when as the scheduled airlines could not meet BNAFI's customers' needs. In 1984, better service was the goal.

Appendix E is a listing of all of the current cities in the U.S. with BNAFI offices. Deregulation, computerization and the economy have triggered more changes in the air freight industry than occurred in all of its previous history. It will never again be the same, and more change appears to be the only thing about the future that is certain.

2. International Operations

In 1972 they also began shipping packages from ten cities in the U.S. to the international arena. Service has always been a Burlington-Northern International Air Freight, Inc. (BNIAFI) benchmark, and their people have been the key to making this happen. From the very beginning, long- term commitments from the best international agents has been the key to their overseas operations. From 1973 to 1983 revenues increased steadily as shown in Tables II, III, and IV.

By 1976 BNIAFI was serving every country in the free world. Internationally, they had offices in London and a subsidiary company in Sydney, Australia. They had a total

of sixty-six international agents that year who performed all of the functions that are so demanding and critical to success in the international field--customs handling, break-bulk, bonded warehousing, packing, crating, even physical distribution. They even had a computer-controlled communications system that tied together all of their service points throughout the world. By 1976 the company's rate of growth was number one among all of the majors.

In 1977 BNIAFI broke into the top ten in the highly competitive international field. A new computer system was installed that provided a comprehensive message switching and answering system as well as a fully automated accounting and billing system.

In 1980, inflation was the major problem. Operating costs continued to climb sky high, especially the airlines' cost of fuel. The still-unsettled forces of deregulation persisted, and competition became even more prolific and unpredictable. But the biggest single problem was the economy. A number of industries that used air freight extensively were seriously depressed. Automotive, agriculture and fashion garments were just three of the more prominent ones. Even with all of this, international revenues showed a 92 per cent increase to $76.2 million. While the earnings of the other major forwarders were increasingly affected by the heavy costs of operating their own airplanes, BNIAFI's were enhanced through commitment to the airlines. "It is the effectiveness of our working relationship that is invariably the key to our success." [Ref. 21] In 1980 they pioneered the use of the IBM Series One computer to establish continuous, around-the-clock telecommunications between the stations in the U.S. and the stations and agents worldwide. A standard telex message such as an alert, inquiry, or special instructions could be sent to arrive a few moments later. Also, they established a training program in international service.

Larry Rodberg, then Chairman of the Board and Chief Executive Officer stated in the 1981 Annual Report that:

> "One major reason for our steady growth was the aggressive posture we maintained in a chaotic rate environment. To protect our service to existing customers, we negotiated special contracts and charter agreements with thirteen of the largest carriers on the North Atlantic, effectively guaranteeing our freight would move. As a result, Burlington-Northern Air Freight maintained international service flexibility despite strikes, walkouts, bad weather, and airline bankruptcies."

Additionally, he stated,

> "To help business customers use our air freight and express services more effectively ..., we introduced a new series of on-line computers and tracking procedures that can pinpoint the location of any Burlington-Northern Air Freight or Burlington Air Express shipment like never before. Not just the city, or the flight, but right down to the delivery truck, the route, and the driver."

By 1982 BNIAFI was the biggest freight customer of most of the major scheduled airlines. It gave the airlines over $200 million for moving its freight. In international freight it was one of the top three customers of such carriers as Air France, KLM, and Scandinavian Airlines System for outbound U.S. air freight.

As far as deregulation goes, Larry Rodberg said in 1982 that it

> "was time to accept deregulation as a fact of life and take advantage of its opportunities because it means freedom to provide price and service options that simply were not possible before 1978 and freedom to serve the different needs of each shipper." [Ref. 22: p.91]

TABLE II

Burlington-Northern International Revenue

(in millions of dollars)

YEAR	REVENUE	% CHANGE	% TOTAL FIRM REVENUE
1973	.1	-	.05
1974	.9	+800.0	2.9
1975	2.3	+155.6	5.1
1976	4.4	+ 91.3	6.1
1977	10.8	+145.5	10.4
1978	18.9	+ 75.0	12.2
1979	39.8	+110.6	16.8
1980	76.4	+ 92.0	26.9
1981	100.7	+ 31.8	28.3
1982	112.9	+ 12.1	30.0
1983	129.7	+ 14.9	30.5

Source: (Burlington-Northern Air Freight, Inc. Annual Reports,1973-1983)

He concluded that,

> "deregulation provides solid support in allowing us to find new customers because we can now gear our rates and levels of service to create, develop and stimulate fresh traffic. It also allows us to tailor rates to assure long-term, steady traffic from existing shippers. Most importantly, perhaps, deregulation makes it possible for the air freight industry to use rates as a marketing tool." [Ref. 22: p.93]

BNIAFI initiated a low-cost, door-to-door international package express service in 1983. Most recently,

TABLE III

Burlington-Northern International Costs and Expenses

YEAR	(in millions of dollars) COSTS AND EXPENSES	% CHANGE	% FIRM TOTAL
1973	NOT AVAILABLE	NA	NA
1974	.6	-	2.8
1975	1.7	+183.3	5.3
1976	3.3	+ 94.1	6.5
1977	8.5	+157.6	11.7
1978	14.2	+ 67.1	13.4
1979	30.7	+116.2	19.3
1980	57.2	+ 86.3	30.0
1981	74.7	+ 30.6	22.6
1982	76.6	+ 2.5	21.5
1983	84.0	+ 9.7	21.1

Source: (Burlington-Northern Air Freight, Inc. Annual Reports,1973-1983)

BNIAFI has found a place in the international transport of just-in-time (JIT) shipments. Appendix F is a listing of all BNIAFI international stations with agents.

TABLE IV

Burlington-Northern International
Gross Profit

(in millions of dollars)

YEAR	PROFIT (or loss)	% CHANGE	% CORPORATE PROFIT
1973	.1	-	+ 2.1
1974	.3	+200.0	+ 3.3
1975	.6	+100.0	+ 4.6
1976	1.1	+ 83.3	+ 5.1
1977	2.3	+109.1	+ 7.5
1978	4.7	+104.3	+ 9.6
1979	9.1	+ 93.6	+11.6
1980	19.2	+111.0	+19.8
1981	26.0	+ 35.4	+21.3
1982	36.3	+ 39.6	+27.3
1983	45.7	+ 25.9	+29.5

Source: (Burlington-Northern Air Freight, Inc. Annual Reports,1973-1983)

IV. MILITARY POLICY ON OVERSEAS AIR SHIPMENTS

A. DEPARTMENT OF DEFENSE

The current policy found in Department of Defense Regulation 4515.13R of January, 1980 states,

> "Authorized traffic moving between the continental U.S. (CONUS) and the overseas areas, and between and within overseas areas normally will be transported by ASIF[3] aircraft of MAC."

B. MILITARY AIRLIFT COMMAND

The Military Aircraft Command (MAC) is the single manager operating agency for airlift services for the Department of Defense. The Command directs more than 87,000 active duty military personnel and civilians at 318 locations in 23 countries. MAC operates 13 bases in the United States. MAC, in coordination with the Military Air Traffic Coordinating Office (MATCO) and/or Aerial Port Liaison Office (APLO), is responsible for the movement of all traffic from time of acceptance into the MAC system until delivery at the MAC destination airport. MAC is responsible for providing appropriate terminal facilities, for tracing and storing traffic, and for providing or arranging airlift service acceptable to the users in terms of frequency and total volume. In response to special requirements submitted by the military departments, MAC will provide special assignment airlift, either commercial or military aircraft.

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[3] Airlift Service Industrial Fund (ASIF) aircraft are commercial aircraft under contract to and scheduled by MAC, and all aircraft controlled and operated by MAC Military Airlift Squadrons.

All traffic to be moved must have all documentation, including necessary clearance and theater authorization. Freight traffic must meet DOD Regulation 4500.32R, Military Standard Transportation and Movement Procedures (MILSTAMP), MAC will not be responsible for the cost of transportation to origin aerial ports and from destination aerial ports. As a general rule, freight moving on board MAC ASIF aircraft will be on a reimbursable basis. Among the types of freight eligible for movement on a space required basis are DOD freight and freight of DOD contractors, if such transportation is specified in the contract.

Organized in June, 1948, the Command consolidated the long-range airlift capability of the Air Force and Navy into one transport organization called the Military Air Transport Service (MATS). The mission of MATS was basically that of a commercial airline; namely transporting passengers and freight on scheduled flights during peacetime.

This same era was characterized by widely scattered crises. The advent of modern turbine-powered airlift gave MATS the ability to meet emergent military requirements. This concept was approved in 1965 by Congress and MATS became a major command named "Military Airlift Command" and was placed on a par with other specified commands. On January 1, 1966, MATS officially became MAC.

MAC airlift capability can be doubled at any time through augmentation by civilian crews and equipment of the Civil Reserve Air Fleet (CRAF). CRAF is a successful 29 year partnership between civil air carriers and DOD. Using up to 340 civilian, long-range transport aircraft of both passenger and freight types, the CRAF is an economical way to double the national airlift capacity.

Initiatives are currently to also increase the CRAF's freight capability. By adding features such as cargo doors and stronger floors to CRAF aircraft, civil transports could carry more freight during contingencies.

The ability to carry out MAC's wartime mission is assured by continually exercising the total airlift system in peacetime [Ref. 23].

C. UNITED STATES NAVY

The relevancy of timely overseas logistical support of the Navy's forward deployed and combat forces was stated succinctly in 1975 by Vice Admiral W.D. Gaddis, USN. "The first and foremost priority is support to the deployed, operational units of the Navy. Support for the forces 'underway' and on station is a requirement unique to the Navy." [Ref. 24]

One of the Navy's primary freight transportation modes has been air, delivered both by MAC and commercial airlines.

1. Navy Overseas Air Freight Organization

The Naval Supply Systems Command (NAVSUPSYSCOM) is responsible for authorizing and controlling the transportation of Navy property and goods. The Commander, NAVSUPSYSCOM, has assigned to the Deputy Commander, Transportation, and other subordinates the duties and responsibilities for freight transportation prescribed by Navy Regulations and appropriate DOD directives. The Navy Material Transportation Office (NAVMTO), Norfolk, Virginia is the Airlift Clearance Authority (ACA) for the Navy and has, as its mission, to perform transportation management functions of an operational and administrative nature [Ref. 25]. These include:

a. Providing technical direction, guidance, and assistance in material transportation matters to Navy commands, bureaus, offices, project managers, and shipping activities worldwide;

b. Receiving, pricing, and coding transportation movement source documents and processing billing data submitted by DOD single manager agencies to the Navy; integrating, collating, analyzing, and summarizing this data to produce Navy-wide transportation accounting and management information, reports, and statistics;

c. Authorizing the movement of Navy material by air including arrangement for special assigned airlift missions; challenging the validity of shipper determined airlift requirements in accordance with NAVSUPSYSCOM directives; arranging for the collection of and delivery to and from aerial ports of embarkation and debarkation; diverting material between modes as necessary to best meet the needs of the Navy at the lowest overall cost; providing or arranging for recoopering, repacking, redocumentation, and relabeling or remarking as necessary to protect and expedite the movement of Navy material in transit;

d. Providing technical assistance to Navy material shipping activities and terminals, including Navy tidewater transshipping activities;

e. Developing and maintaining a library of tariffs, quotations, schedules and routes, and a library of functional publications in the transportation and distribution management field;

f. Maintaining fleet locator information and providing appropriate information to shippers of material for Navy ships and mobile units; arranging for the receipt, inspection, acceptance, marking, consolidation, and documentation of vendor supplied material delivered direct to

air terminals for transshipment when not otherwise provided for; providing tracing service for shipments moving within the Defense Transportation Service on an exception basis in response to urgent operational requirements;

g. Responsible for air shipment clearance into MAC.

The Navy overseas air freight terminals administer all airlift space available for the movement of Navy air freight from and within assigned geographical areas of responsibility. They are located at Clark Air Force Base, Luzon, Republic of the Philippines; Naples, Italy; Hickam Air Force Base, Hawaii; Rota, Spain; and, Yokota Air Base, Yokota, Japan.

2. Overseas Shipments

On shipments to or from overseas bases it is not an absolute necessity to consign shipments to a Navy terminal for transshipment. Generally, shipments will be made from point of origin to the ultimate consignee at the lowest cost, consistent with the urgency of movement [Ref. 26].

On shipments to fleet vessels or embarked units it is most important that the shipments be forwarded to where the consignee will be located at the time the shipment arrives. When the urgency or inherent nature of the commodity warrants expedited service, air freight is authorized. This provides control of the shipment throughout the movement. Nominations of freight for airlift must be submitted to the Western Operations Department, NAVMTO, Oakland or to Navy overseas air freight terminals or other cognizant authorized air freight routing offices overseas. Appendix A shows the Navy overseas air routing activities. Currently, about 10 percent of contractor air freight shipments are authorized by NAVMTO to be sent by commercial air yearly [Ref. 27].

3. Qualifications for Air Transportation

The qualifications that air routing offices look for in authorizing air transportation for freight are:

a. Repair parts required for emergency repairs to insure operational readiness;
b. Emergency material urgently required for nonstock replenishment purposes;
c. Technical spares not available from the Mobile Logistic Support Forces or overseas bases;
d. Items essential to health and items required in relief of catastrophes;
e. Critical items procured on an airlift pipeline basis after approval by the Joint Chiefs of Staff;
f. Items to fulfill requirements deemed necessary by the Joint Chiefs of Staff as mandatory air movements;
g. Items assigned material condition code B,C,D,E,H, or K when determined to be in short supply by the cognizant inventory manager.

4. Additional Criteria for Overseas Air Movement

When Navy material must move between points where no government air transport system operates or where the existing system is so limited that timely receipt of material at destination cannot be assured, commercial air systems may be employed, if available. Where service schedules and rates are comparable, American flag carriers will be given preference over foreign flag carriers. Otherwise, traffic will be distributed as equitably as possible among competing air carriers.

5. Bills of Lading

Normally, overseas commercial air shipments will move under government bills of lading. Commercial bills of lading annotated "to be converted to a government bill of lading" will not be used unless time limitations and the points between which the Navy material must move make such use mandatory. Commercial overseas air shipping documents, except those covering shipments on an ad valorem basis will be annotated "access highest valuation at which minimum or no valuation charge will apply." The full value will be declared on an ad valorem shipment. No insurance will be requested. No valuations are to be shown on documents accompanying shipments routed by military air transport systems.

The specific air shipment challenge criteria currently in effect for CONUS outbound shipments for MAC channel airlift can be found in Appendix B. Those challenge criteria for shipment via commercial airlift can be found in Appendix C. Finally, those for shipments originating in overseas areas for MAC channel airlift can be found in Appendix D.

6. Future Navy Projects

Naval Supply Systems Command (NAVSUP) has proposed a test project called Advanced Traceability and Control (ATAC). This proposal would establish a worldwide transportation agent as the Navy freight forwarder for retrograde of Depot Level Repairables (DLR's) by traceable means and signature control. The retrograde DLR's will only be gathered from EXCONUS to CONUS. The forwarder's sites will be located at Sigonella, Italy, and Tidewater, Virginia.

This new project gives rise to two additional considerations. First, a forwarder with a solid

international agent network would now have an interface at an overseas Navy air base if expanded requirements are given future considerations. Second, this same forwarder, with a strong international agent network covering every free-world country, could also provide service to deployed Navy ships.

V. COMPARATIVE COSTS AND SERVICE TIMES OF NAVY INTERNATIONAL AIR FREIGHT

A. INTRODUCTION

This analysis chapter includes an explanation of methodology, a service time comparison, and a cost comparison of Navy shipments on MAC and published time/costs of a representative of the forwarding industry, Burlington-Northern International Air Freight, Inc. Following this is a discussion of factors contributing to the length of MAC delivery times. Finally, a summarization of Office of Management and Budget (OMB) Circular No. A-76 (Revised), concerning seeking competition for commercial activities, is included.

B. SERVICE TIME ANALYSIS

1. UMMIPS Standards

In order to analyze the total transportation time of Navy freight as it proceeds through the Military Airlift Command (MAC) channels from the United States to overseas discharge ports, it is necessary to understand the concept of acceptable Department of Defense (DOD) handling times. For MAC, the acceptable Uniform Material Movement and Issue Priority System (UMMIPS) handling time depends upon which overseas area the freight is going to. Table V presents these UMMIPS time standards.

Shipments of either Priority Designators 01-03, which are Transportation Priority One (TP-1), or Priority Designators 04-09, which are Transportation Priority Two (TP-2), which are destined for the Mediterranean are allowed four days for acceptable delivery, whereas, the same

shipments destined for to the Pacific are allowed five days for acceptable delivery. Shipments originating on opposite coasts carry the same acceptable delivery standards for the destination ocean flown over.

2. Initial Review of Data

To determine MAC service times, a review was conducted using three months of data (September 1984, February 1985, and March 1985). This was the latest available information that the Air Force could contribute. The delivery times are found in Tables VII through IX and XI through XIV. Additionally, an analysis of shipments and tonnage that met the MAC delivery standards was conducted (Tables XV-XVII). Tables VI and X are provided for look-up purposes in conjunction with the other tables; they show the air terminal identifier codes for the East and West Coasts. Using Table VI to identify the airport and location of each APOE and APOD air terminal identifier code on the East Coast it becomes easier to follow Tables VII-IX. Table X identifies the airport and location of each APOE and APOD air terminal identifier code used in Tables XI-XIII.

In the computation of the total delivery time, three factors are taken into consideration. Total delivery time includes Aerial Port of Embarkation (APOE) handling time, Intransit Time, and Aerial Port of Debarkation (APOD) handling time by days and fractions of days. Average total delivery times are found by adding each origin-destination (OD) pair total delivery time and dividing by the number of OD pairs used in each month.

Some OD pairs in any given month do not have any freight being transported. When figuring the average total MAC delivery time neither these OD pairs nor those pairs accounting for only one or two shipments or tremendously excessive total delivery times are used in the calculations.

Each OD pair is grouped by APOE in alphabetical order followed by the APOD arranged alphabetically within that origin channel. At the bottom of the table is the sample standard deviation for any given month when that average exceeds the acceptable UMMIPS time standards.

Tables VII-IX and XI-XIV indicate that MAC has not been able to consistently deliver TP-1 and TP-2 air shipments on time to activities either in the Atlantic or Pacific. Only the delivery times of TP-1 (999) shipments (which are green-sheeted by NAVMTO) approximates UMMIPS time standards. TP-1(999) requisitions are signature controlled at each intermediate destination and at the final destination due to the urgency and criticality of the freight.

3. Methodology

To test for statistical significance of the observed mean in those instances where the average total MAC handling time was greater than the UMMIPS standard of 4.0 days, a t-test was performed in the following manner:

Null hypothesis (Ho): observed mean less than or equal to 4.0 days

Alternate hypothesis (H1): observed mean greater than 4.0 days

Level of significance: 5 percent

Sample test statistic:

$$t = \frac{x - 4.0}{s/\sqrt{n}}$$

where:

n = number of observations;
degrees of freedom = n-1;
x = observed mean;
s = sample standard deviation.

It is necessary to contrast the statistical results which are presented below with the shipper's problem of getting the freight to the ultimate destination within the UMMIPS time standards. Statistically, the variance of

shipping time is an inverse measure of reliability for the shipper. Even though the statistical test may say that observed mean time is not different from the UMMIPS standard, if the variance is high then the shipper has a potential problem with reliability.

An assumption made in performing the calculations is that there are the same number of shipments each month from each OD pair. This assumption is made because individual observations of handling times are unavailable. The number of observations for each OD pair are approximately equal so this assumption is a reasonable one.

4. MAC East Coast Total Handling Time

From the East Coast to activities in the Mediterranean the average delivery times exceeded the acceptable MAC possession time of 4 days in September 1984 and February 1985 for all three transportation priorities. The average delivery times for March 1985 did not exceed the UMMIPS standards. For the March data, the sample test statistic will never be greater than zero for all three tables and hence the null hypothesis is accepted.

Table VII, TP-1 (999), shows that the average acceptable total (MAC possession time in days) was exceeded in September 1984 and February 1985. September 1984 and February 1985 totals between OD pairs exceeded the acceptable standards for 6 and 4 observations, respectively. This shows that MAC does not consistently deliver high priority freight within the acceptable standards. However, averaging over all observations the sample test statistics were .6703 for September 1984 and .1895 for February 1985. The critical values of t for the 5 percent level of significance are 1.761 and 1.943, respectively. Therefore, it is necessary to accept the null hypothesis. Hence, the observed mean is not statistically larger than 4.0 for either month.

Table VIII, TP-1, also shows that the average acceptable totals exceeded the standards in September 1984 and February 1985. September 1984 and February 1985 totals between OD pairs exceeded the acceptable standards for 10 and 8 observations, respectively. The sample test statistics were 2.028 for September 1984 and 2.137 for February 1985. The critical values of t for the 5 percent level of significance are 1.761 and 1.860, respectively, indicating that the null hypothesis is rejected. Hence, the observed mean is statistically larger than 4.0 for both months.

Table IX, TP-2, shows that the average acceptable totals exceeded the standards in September 1984 and February 1985. September 1984 and February 1985 totals between individual OD pairs exceeded the acceptable standards for 9 and 5 observations, respectively. The sample test statistics were 2.505 for September 1984 and 1.704 for February 1985. The critical values of t for the 5 percent level of significance are 1.761 and 1.860, respectively, indicating that the null hypothesis is rejected for September 1984 and is accepted for February 1985. Hence, the observed mean for September 1984 is statistically larger than 4.0, while the February 1985 one is not.

Of the three East Coast APOE's, Dover consistently exceeds the total acceptable time standards and Norfolk is best between OD pairs at falling within the standards. On the average, the East Coast APOE's and APOD's have a two days and 0.8 days handling time, respectively.

5. <u>MAC West Coast Total Handling Time</u>

From the West Coast to activities in the Pacific the average delivery times meet the acceptable MAC possession time of 5 days for all three months under all three transportation priorities. As a consequence, the sample test statistics will never be greater than zero and hence the

null hypothesis is accepted in all cases. However, individual OD pairs do exceed the acceptable UMMIPS time standards.

Table XI, TP-1 (999), shows that September 1984, February 1985, and March 1985 totals between individual OD pairs exceeded the acceptable standards for 5, 3 and 6 observations, respectively.

Table XII, TP-1, shows that September 1984, February 1985 and March 1985 totals between individual OD pairs exceeded the acceptable standards for 7, 5, and 6 observations, respectively.

Table XIII, TP-2, shows that September 1984, February 1985 and March 1985 totals between individual OD pairs exceeded the acceptable standards for 8, 4 and 7 observations, respectively.

Of the four West Coast APOE's, Tinker AFB consistently exceeds the total acceptable time standards and Norton AFB is the most consistent APOE in meeting UMMIPS standards. On the average, the West Coast APOE's and APOD's have a 1.6 days and 0.65 days handling time, respectively. These are lower than those presented above for the East Coast.

6. MAC Opposite Coast Total Handling Time

Table XIV has all of the three transportation priorities discussed above listed in one table in the same monthly format. The only data available was for shipments going from West to East. SUU-KEF lists just one transportation priority because this was the only one that was shipped during the three-month period. The average delivery times of all three months exceed the acceptable MAC possession times of 4 days. The sample test statistics were 1.040, 1.762 and 2.351 for September 1984, February 1985, and March 1985, respectively. The critical t values were 1.860,

1.771, and 1.753, respectively, for the 5 percent level of significance. Thus the null hypothesis is rejected only for March 1985. The results indicate that the average times are becoming longer.

7. MAC APOE Handling Time

Tables VII through IX and table XIV show that the aerial port of embarkation handling time segment accounts for a disproportionate amount of the total MAC possession time on the East Coast while this same segment on the West Coast is consistently better. It appears that MAC CONUS terminals on the East Coast are taking more time to process and ship outbound freight than West Coast MAC CONUS terminals.

8. MAC Shipments and Tonnage

After analyzing the MAC total delivery times for high priority freight and determining that the average was 4 days or higher from both coasts the number of shipments and tonnage shipped was analyzed to see what percentage was reaching the destination in acceptable standards. What was found is that less than 3 out of 4 high priority air shipments on the average and 75 percent of the associated tonnage is reaching its overseas destination in expected UMMIPS time standards.

Tables XV-XVII show MAC handling time percentages from the East and West Coast for all three transportation priorities. Each table shows the same OD pairs that have been shown previously. Each table is divided by months and for each month the first column shows percent of shipments and the second column shows percent of tonnage handled through each OD pair which was within each each coast's acceptable UMMIPS time standards. Where there were no shipments in a given month "NONE" is indicated. Where no

shipments were handled within acceptable time standards "0" is indicated. At the bottom of each table a 3-month average is indicated.

Table XV shows that from the East Coast to the Mediterranean the 3-month average for percent of shipments or percent of tonnage that was handled through the APOD in 4 days or less was 45.0 percent and 51.7 percent, respectively. The monthly averages ranged from 29.3 percent of shipments in February 1985 to 61.7 percent in March 1985 and 36.8 percent of tonnage in February 1985 to 68.5 percent in March 1985.

Table XVI shows that from the West Coast to the Pacific the 3- month average for percent of shipments or percent of tonnage that was handled through the APOD in 5 days or less was 67.1 percent and 67.8 percent, respectively. The monthly averages range from 65.7 percent of shipments in March 1985 to 68.0 percent in September 1984, and 63.3 percent of tonnage in March 1985 to 72.8 percent in September 1984.

Table XVII shows that from the West Coast to the Atlantic the 3-month average for percent of shipments or percent of tonnage that is handled through the APOD in 4 days or less is 39.3 percent and 49.5 percent, respectively. The monthly averages range from 36.4 percent of shipments in February 1985 to 45.0 percent in September 1984 and 44.8 percent of tonnage in February 1985 to 52.0 percent in September 1984.

9. Burlington-Northern Delivery Times

The MAC handling time is exclusive of the time it takes to deliver the freight to the MAC terminal. On the other hand, a commercial firm such as Burlington-Northern International Air Freight guarantees a maximum door-to-door delivery time, which is less than MAC's handling time.

BNIAFI provides this guarantee to almost anywhere in the world [Ref. 28]. Table XVIII shows Burlington-Northern's guaranteed delivery times. Next to each destination country are the related MAC air terminal identifier codes in parenthesis.

In contrast to these guaranteed Burlington-Northern delivery times, the MAC data shows that in February 1985, TP-2 (from the East Coast) via MAC had a mean of 7.2 and a standard deviation of 5.515 days. In September 1984, TP-1 (from the East Coast) via MAC had a mean of 5.5 and a standard deviation of 2.840 days.

C. COST ANALYSIS

Table XIX presents a cost comparison between Burlington-Northern and MAC for individual air express shipments of 35 and 70 pounds. From a cost perspective, Table XIX clearly shows a transportation charge advantage favoring MAC of at least 3 to 1 for individual shipments of 70 pounds and better than a 4 to 1 advantage for shipments of 35 pounds. If the actual MAC service times are satisfactory to the shipper and receiver then single or multiple shipments of packages 70 pounds or lighter should probably go by MAC. If the freight weighs 70 pounds or less per package and must get from origin to destination in less time than the UMMIPS time standards for Priority 01 then it should go commercial even if there is a higher cost.

D. FACTORS CONTRIBUTING TO THE LENGTH OF MAC DELIVERY TIMES

There are four factors for consideration that cause APOE and APOD handling to contribute such a large proportion of MAC delivery times. First, MAC relies on the 463L pallet and has not as yet adopted containerization. Therefore, any maximization of cube and weight is not realized. (Cube and

weight are maximized in a container because freight can be packed from bottom to top into all corners to fill the container completely right up to the doors). Second, handling times are not being minimized [Ref. 29]. It takes two people up to two hours to build a single 463L pallet. A container can be loaded in a matter of minutes with proper material handling gear. Third, MAC aircraft do not travel to many worldwide destinations [Ref. 30]. This causes delays at the closest MAC overseas air terminal of determining the best way to forward the freight closest to the ultimate destination. Fourth, the routes that are flown are not flown on a daily basis [Ref. 31]. This means that freight may sit in a MAC terminal until a scheduled flight, or until a flight is scheduled. The relatively short UMMIPS time frame of four days from the East Coast and five days from the West Coast hardly allows for the relatively long handling times at MAC air terminals.

E. SEEKING COMPETITION FROM COMMERCIAL ACTIVITIES

When looking at commercial alternatives to the MAC transportation system for high priority air freight destined for overseas and deployed activities there is another consideration. OMB Circular No. A-76(Revised), concerning the seeking of competition from commercial activities, states:

> "The competitive enterprise system, characterized by individual freedom and initiative, is the primary source of national economic strength. In recognition of this principle, it has been and continues to be the general policy of the Government to rely on commercial sources to supply the products and services that the Government needs." [Ref. 32]

One of the specific categories recommended for commercial source contracting in OMB Circular No. A-76(Revised) under the transportation category is "Air, water, and land transportation of people and things." [Ref. 33] This implies that the Navy should be looking for commercial alternatives to MAC services.

TABLE V

UMMIPS Time Standards

TIME SEGMENT	TIME STANDARD (IN CALENDAR DAYS) FOR PRIORITY DESIGNATORS:			
	01-03 (TP-1)	04-08 (TP-2)	09-15 (TP-3)	09-15 (TP-3)*
A. Requisition Submission	1	1	2	*
B. Availability Determination and Storage Site Processing	3	4	13	28
C. Transportation Hold and CONUS Intransit to CONUS Requisitioner, Canada, or to POE	3**	6**	13	13
D. Overseas Shipment/Delivery:***				
1. To Alaska, Hawaii, North Atlantic, Northern Europe, Caribbean or Central America	4**	4**	38	23
2. To South America or West Mediterranean	4**	4**	43	28
3. To East Mediterranean or Africa	4**	5**	50	35

TABLE V (Cont'd)
UMMIPS Time Standards

TIME SEGMENT	TIME STANDARD (IN CALENDAR DAYS) FOR PRIORITY DESIGNATORS:			
	01-03 (TP-1)	04-08 (TP-2)	09-15 (TP-3)	09-15 (TP-3)*
4. To Far East, Southeast Asia, or Australia	5**	5**	62	47
5. To Middle East(Persian Gulf, Red Sea)	4**	4**	67	52
E. Receipt Take up by Requisitioner	1	1	3	

*NOTE: For use only when shipments are consolidated at origin into SEAVAN containers.

**NOTE: Time Standards for Priority Designators 09-15 apply when freight is diverted to surface movement. High Priority requisitions will be diverted to surface movement only when: (1) a temporary, blanket authorization is granted by JCS or the cognizant CINC, (2) a specific authorization is provided by the requisitioner, or (3) the characteristics of the material preclude air movement due to size, weight, or hazard classification.

***NOTE: Includes POE hold time, loading, transit, unloading, POD hold time and delivery to consignee.

MAC UMMIPS Time (Pacific)- TP-1: 5 days; TP-2: 5 days
MAC UMMIPS Time (Middle East)- TP-1: 4 days; TP-2: 4 days
MAC UMMIPS Time (Mediterranean)- TP-1: 4 days; TP-2: 4 days

Source: (OPNAVINST 4614.1E, CH-1)

TABLE VI

Air Terminal Identifier Codes East Coast

LOCATION CODE	AIRPORT NAME	LOCATION
ADA	Incirlik AB	Turkey
ATH	Athinai	Greece
AVB	Aviano	Italy
CHS	Charleston AFB	South Carolina
DOV	Dover AFB	Delaware
FRF	Rhein Main AFB	Germany
HOW	Howard AB	Panama
KEF	Keflavik	Iceland
MHZ	Mildenhall	United Kingdom
NAP	Capodichino IAP	Italy
NGU	Norfolk NAS	Virginia
PIK	Prestwick	United Kingdom
RMS	Ramstein AB	Germany
RTA	Rota NAS	Spain
SIZ	Sigonella	Italy
TOJ	Torrejon AB	Spain

Source:(Department of Defense Regulation 4500.32R, Volume 1 (MILSTAMP))

TABLE VII

MAC Handling Time(TP-1)(999)(From East Coast)

Total MAC Possession Time (Days)

APOE-APOD	SEPTEMBER 84 APOE	IN	APOD	TOTAL	FEBRUARY 85 APOE	IN	APOD	TOTAL	MARCH 85 APOE	IN	APOD	TOTAL
CHS-HOW	1.5	2.0	3.2	6.7	1.3	3.4	34.8*	39.5*	1.3	.3	1.1	2.7
CHS-MHZ	2.6	.8	.4	3.8			NONE		1.5	.5	1.1	3.1
CHS-PIK	1.0	.5	.1	1.7			NONE		2.6	.3	.1	3.0
DOV-ADA	2.0	2.0	.4	4.4	2.0	2.2	1.0	5.2	1.4	2.9	1.0	5.3
DOV-ATH	2.1	5.3	2.0	9.4	2.1	2.9	3.9	8.9	1.4	1.8	1.7	4.9
DOV-AVB	1.9	3.6	.6	6.1			NONE		1.8	4.6	.4	6.8
DOV-FRF	1.5	1.3	.8	3.6	1.8	.7	.6	3.1	1.6	.6	.2	2.4
DOV-MHZ	2.7	2.6	.2	5.5	1.2	1.7	.3	3.2	1.4	2.7	1.0	5.1
DOV-RMS	1.5	.8	.5	2.8	1.3	.4	.4	2.1	1.3	.6	.6	2.5
DOV-RTA	1.4	1.4	.1	2.9			NONE				NONE	
DOV-TOJ	2.4	2.0	1.3	5.7	2.2	2.1	.2	4.5	1.6	2.1	.2	3.9
NGU-KEF	1.9	.4	.1	2.4			NONE		2.8	.3	.1	3.2
NGU-NAP	1.9	1.6	.1	3.6			NONE		1.6	1.2	.1	2.9
NGU-RTA	2.1	.3	.8	3.2	1.6	.4	.2	2.2	2.4	.3	2.0	4.7
NGU-SIZ	2.4	.9	.1	3.4			NONE		3.0	1.1	1.0	5.1
AVERAGE	1.9	1.7	.7	4.3	1.7	1.7	.9	4.2	1.8	1.4	.8	4.0
STD DEV				2.004				2.373				

*NOTE:Not counted.Would skew data and only accounts for 1 or 2 shipments.

Source: (MAC Analysis Reports, T2024)

TABLE VIII

MAC Handling Time(TP-1)(From East Coast)

Total MAC Possession Time (DAYS)

APOE-APOD	SEPTEMBER 84 APOE	IN	APOD	TOTAL	FEBRUARY 85 APOE	IN	APOD	TOTAL	MARCH 85 APOE	IN	APOD	TOTAL
CHS-HOW	1.9	.8	2.4	5.1	1.9	53.9*	2.1	57.9*	2.1	1.0	1.2	4.3
CHS-MHZ	2.8	1.3	.4	4.5	1.5	15.2*	8.3	25.0*	2.1	.4	.7	3.2
CHS-PIK	1.6	2.4	.1	4.1	NONE				2.3	.3	.1	2.7
DOV-ADA	1.8	2.2	1.3	5.3	2.4	2.3	1.2	5.9	2.0	1.9	1.4	5.3
DOV-ATH	2.5	4.7	2.1	9.3	2.2	4.1	2.0	8.3	2.1	2.7	1.7	6.5
DOV-AVB	2.5	5.0	1.0	8.5	NONE				3.1	9.0	.6	12.7
DOV-FRF	1.5	1.4	1.3	4.2	2.0	.8	.7	3.5	1.7	.6	.2	2.5
DOV-MHZ	3.9	2.7	.4	7.0	2.5	6.8	.6	9.9	2.5	1.6	.5	4.6
DOV-RMS	1.5	.9	.7	3.1	1.7	.7	.5	2.9	1.4	.5	.5	2.4
DOV-RTA	3.1	9.5	.1	12.7	3.4	3.5	.1	7.0	NONE			
DOV-TOJ	2.2	1.9	1.9	6.0	2.3	2.8	.2	5.3	2.2	1.8	.2	4.2
NGU-KEF	1.5	.4	.1	2.0	NONE				2.1	.3	.1	2.5
NGU-NAP	2.1	1.7	.1	3.9	NONE				1.6	1.1	.1	2.8
NGU-RTA	2.3	.3	.6	3.2	1.7	.4	.3	2.4	1.9	.3	1.3	3.5
NGU-SIZ	2.2	1.1	.1	3.4	2.2	9.8	.5	12.5	2.6	2.5	1.0	6.1
AVERAGE	2.2	2.5	.8	5.5	2.1	3.6	1.5	6.4	2.1	1.2	.7	4.0
STD DEV				2.840				3.383				

*NOTE:Not counted.Would skew data and only accounts for 1 or 2 shipments.

Source: (MAC Analysis Reports, T2024)

TABLE IX

MAC Handling Time(TP-2)(From East Coast)

Total MAC Possession Time (Days)

APOE-APOD	SEPTEMBER 84 APOE	IN APOD		TOTAL	FEBRUARY 85 APOE	IN APOD		TOTAL	MARCH 85 APOE	IN APOD		TOTAL
CHS-HOW	2.2	.7	2.6	5.5	NONE				2.3	.3	.7	3.3
CHS-MHZ	2.6	.9	.4	3.9	NONE				2.1	.5	.8	3.4
CHS-PIK	1.6	1.3	.1	3.0	NONE				2.0	.3	.1	2.4
DOV-ADA	1.7	2.4	1.9	6.0	2.1	2.4	1.2	5.7	1.9	2.0	1.4	5.3
DOV-ATH	2.3	5.6	2.1	10.0	1.9	3.4	1.7	7.0	1.9	2.5	1.6	6.0
DOV-AVB	2.2	3.9	.9	7.0	NONE				2.1	3.7	.8	6.6
DOV-FRF	1.8	5.4	3.4	10.6	2.1	.6	.9	3.6	1.7	.8	.4	2.9
DOV-MHZ	4.2	2.1	.9	7.2	2.6	3.7	.3	6.6	3.0	1.9	.4	5.3
DOV-RMS	1.7	.6	.9	3.2	1.7	.9	.6	3.2	1.5	.5	.7	2.7
DOV-RTA	3.8	4.2	.2	8.2	1.8	8.2	.1	10.1	NONE			
DOV-TOJ	2.2	1.5	2.0	5.7	2.3	2.4	.2	4.9	2.1	1.8	.3	4.2
NGU-KEF	2.2	.4	.1	2.7	NONE				2.8	.3	.1	3.2
NGU-NAP	2.4	1.7	.1	4.2	NONE				1.9	1.1	.1	3.1
NGU-RTA	2.8	.4	.6	3.8	1.8	.4	.4	2.6	1.9	.3	1.3	3.5
NGU-SIZ	2.3	1.1	.1	3.5	9.9	9.6	1.0	20.5	2.5	1.1	.9	4.5
AVERAGE	2.4	2.2	1.1	5.7	2.1	4.3	.7	7.2	2.1	1.2	.7	4.0
STD DEV				2.525				5.515				

Source: (MAC Analysis Reports, T2024)

TABLE X

Air Terminal Identifier Codes West Coast

LOCATION CODE	AIRPORT NAME	LOCATION
CRK	Clark AB	Philippines
CUA	Cubi Point NAS	Philippines
DNA	Kadena AB	Okinawa
HIK	Hickam AB	Hawaii
OKO	Yokota AB	Japan
OSN	Osan AB	Korea
SBD	Norton AFB	California
SUU	Travis AFB	California
TCM	McChord AFB	Washington
TIK	Tinker AFB	Oklahoma
UAM	Anderson AFB	Guam

Source:(Department of Defense Regulation 4500.32R, Volume 1 (MILSTAMP))

TABLE XI

MAC Handling Time(TP-1)(999)(From West Coast)

Total MAC Possession Time (Days)

APOE-APOD	SEPTEMBER 84 APOE	IN APOD		TOTAL	FEBRUARY 85 APOE	IN APOD		TOTAL	MARCH 85 APOE	IN APOD		TOTAL
SBD-CRK	.6	1.4	.7	2.7	NONE				1.2	3.3	.6	5.1
SBD-DNA	.9	1.9	.1	2.9	NONE				.9	1.9	.1	2.9
SBD-HIK	2.5	.5	.5	3.5	NONE				.7	.5	.7	1.9
SBD-OKO	1.2	1.8	.3	3.3	NONE				.8	1.4	.2	2.4
SBD-UAM	.8	.9	.4	2.1	.4	1.0	.4	1.8	1.2	1.1	.9	3.2
SUU-CRK	1.5	1.3	.8	3.6	1.2	2.0	.4	3.6	1.6	2.8	1.6	6.0
SUU-CUA	2.2	1.7	2.3	6.2	2.0	1.6	1.1	4.7	1.7	2.2	.7	4.6
SUU-DNA	1.4	1.8	.8	4.0	1.3	2.0	.2	3.5	1.3	1.7	.2	3.2
SUU-HIK	1.2	.3	.7	2.2	1.2	.3	.7	2.2	1.3	.2	.6	2.1
SUU-OKO	2.0	1.3	.3	3.6	1.1	1.6	.4	3.1	.9	1.5	.2	2.6
SUU-OSN	1.9	1.5	1.8	5.2	1.8	2.7	.7	5.2	1.6	3.3	.2	5.1
SUU-UAM	1.6	1.0	.6	3.2	1.1	1.3	1.4	3.8	1.3	1.8	1.0	4.1
TCM-OKO	1.7	.9	.2	2.8	NONE				1.4	1.5	.3	3.2
TCM-OSN	2.4	2.3	.6	5.3	NONE				1.7	3.8	.3	5.8
TIK-CRK	1.4	3.9	.9	6.2	1.7	3.2	.3	5.2	1.6	3.3	1.5	6.4
TIK-DNA	1.3	3.4	.2	4.9	1.5	3.5	.2	5.2	1.5	2.3	.2	4.0
TIK-OKO	1.6	4.0	.2	5.8	1.5	3.1	.1	4.7	1.7	3.3	.2	5.2
AVERAGE	1.5	1.8	.7	4.0	1.3	2.0	.5	3.8	1.3	2.1	.6	4.0

Source: (MAC Analysis Reports, T2024)

TABLE XII

MAC Handling Time(TP-1)(From West Coast)

Total MAC Possession Time (Days)

APOE-APOD	SEPTEMBER 84 APOE	IN	APOD	TOTAL	FEBRUARY 85 APOE	IN	APOD	TOTAL	MARCH 85 APOE	IN	APOD	TOTAL
SBD-CRK	.5	1.8	.3	2.6	NONE				.4	5.6	.5	6.5
SBD-DNA	.9	2.0	.2	3.1	NONE				.8	1.9	.1	2.8
SBD-HIK	.8	.5	.6	1.9	NONE				.9	.5	.4	1.8
SBD-OKO	.4	2.8	.2	3.4	NONE				.6	1.8	.2	2.6
SBD-UAM	.4	1.2	.9	2.5	.4	1.0	.4	1.8	.4	1.2	1.2	2.8
SUU-CRK	2.2	2.1	.9	5.2	1.4	2.0	.5	3.9	1.8	3.3	1.9	7.0
SUU-CUA	2.5	1.4	2.2	6.1	2.3	1.7	.9	4.9	1.8	2.2	.8	4.8
SUU-DNA	3.1	3.2	.1	6.6	1.6	5.5	.2	7.3	1.9	1.7	.2	3.8
SUU-HIK	1.6	1.0	1.0	3.6	1.5	.3	.7	2.5	1.6	.3	.7	2.6
SUU-OKO	4.0	1.0	.4	5.4	1.8	2.7	.2	4.7	1.4	1.5	.2	3.1
SUU-OSN	2.1	1.5	1.1	4.7	1.8	2.8	.6	5.2	1.6	3.0	.6	5.2
SUU-UAM	1.8	1.2	.7	3.7	1.4	1.6	1.4	4.4	2.0	1.5	.9	4.4
TCM-OKO	2.0	.7	.3	3.0	NONE				1.6	1.3	.4	3.3
TCM-OSN	2.1	1.4	1.5	5.0	NONE				1.7	3.5	.5	5.7
TIK-CRK	1.7	3.9	.9	6.5	1.8	3.9	.4	6.1	1.9	4.4	1.9	8.2
TIK-DNA	1.7	3.8	.2	5.7	2.2	3.9	.2	6.3	1.9	2.8	.2	4.9
TIK-OKO	1.6	3.9	.3	5.8	1.9	3.5	.2	5.6	1.8	3.9	.3	6.0
AVERAGE	1.7	2.0	.7	4.4	1.7	2.6	.5	4.8	1.4	2.4	.6	4.4

Source: (MAC Analysis Reports, T2024)

TABLE XIII

MAC Handling Time(TP-2)(From West Coast)

Total MAC Possession Time (Days)

APOE-APOD	SEPTEMBER 84 APOE	IN APOD		TOTAL	FEBRUARY 85 APOE	IN APOD		TOTAL	MARCH 85 APOE	IN APOD		TOTAL
SBD-CRK	NONE				NONE				NONE			
SBD-DNA	1.1	2.0	.2	3.3	NONE				1.1	2.4	.1	3.6
SBD-HIK	1.1	.5	.7	2.3	NONE				1.6	.5	.6	2.7
SBD-OKO	.6	1.8	.3	2.7	NONE				NONE			
SBD-UAM	.9	3.6	.9	5.4	NONE				NONE			
SUU-CRK	2.1	1.7	.9	4.7	1.6	2.2	.5	4.3	2.0	3.0	2.1	7.1
SUU-CUA	2.3	1.6	2.2	6.1	2.3	1.6	1.0	4.9	1.9	2.4	.9	5.2
SUU-DNA	2.7	3.2	.1	6.0	1.8	2.3	.1	4.2	2.2	1.8	.2	4.2
SUU-HIK	1.7	.6	1.5	3.8	1.6	.3	.7	2.6	1.8	.3	.7	2.8
SUU-OKO	3.5	1.0	.3	4.8	1.2	1.8	.4	3.4	1.2	1.7	.3	3.2
SUU-OSN	2.9	1.8	1.1	5.8	2.4	2.3	.8	5.5	1.6	2.9	.6	5.1
SUU-UAM	2.0	1.4	.6	4.0	1.4	1.4	1.5	4.3	1.9	1.5	.9	4.3
TCM-OKO	2.1	.7	.3	3.1	NONE				1.7	1.2	.4	3.3
TCM-OSN	2.0	1.9	1.6	5.4	NONE				1.9	3.0	1.0	5.9
TIK-CRK	1.5	3.7	.9	6.1	1.9	3.8	.3	6.0	1.9	4.6	1.9	8.4
TIK-DNA	1.7	4.0	.2	5.9	2.1	3.8	.2	6.1	1.8	3.1	.2	5.1
TIK-OKO	1.6	3.7	.3	5.6	2.5	3.1	.2	5.8	1.9	3.7	.3	5.9
AVERAGE	1.9	2.1	.8	4.8	1.9	2.3	.6	4.8	1.8	2.3	.7	4.8

Source: (MAC Analysis Reports, T2024)

TABLE XIV

MAC Handling Time (From Opposite Coasts)

Total MAC Possession Time (DAYS)

APOE-APOD	SEPTEMBER 84 APOE	IN	APOD	TOTAL	FEBRUARY 85 APOE	IN	APOD	TOTAL	MARCH 85 APOE	IN	APOD	TOTAL
SUU-FRF												
Pri 1(999)	NONE				2.2	2.3	.5	5.0	1.1	1.7	.7	3.5
Pri 1	NONE				2.0	2.2	.6	4.8	2.1	1.7	.5	4.3
Pri 2	NONE				2.6	2.0	1.2	5.8	2.5	1.6	1.0	5.1
SUU-KEF												
Pri 1(999)	NONE				NONE				3.3	8.6	.1	12.0
SUU-MHZ												
Pri 1(999)	NONE				2.7	4.2	.3	7.2	1.6	2.8	1.3	5.7
Pri 1	NONE				NONE				4.4	2.9	1.2	8.5
Pri 2	NONE				2.3	3.2	.2	5.7	.9	2.3	1.8	5.0
SUU-RMS												
Pri 1(999)	3.5	2.5	1.0	7.0	2.2	2.1	.6	4.9	2.5	2.2	.7	5.4
Pri 1	2.7	1.5	.9	5.1	2.5	2.0	.6	5.1	2.5	2.4	.7	5.6
Pri 2	3.2	2.2	1.2	6.6	2.6	2.1	.7	5.4	2.4	2.3	.8	5.5
TIK-MHZ												
Pri 1(999)	1.2	1.4	.4	3.0	1.5	2.7	.6	4.8	1.4	1.7	.6	3.7
Pri 1	1.6	1.5	.5	3.6	1.8	2.9	.7	5.4	1.8	1.9	1.1	4.8
Pri 2	1.6	1.2	.5	3.3	1.9	2.6	.5	5.0	1.6	1.7	.7	4.0
TIK-RMS												
Pri 1(999)	1.4	1.4	.9	3.7	1.3	2.4	.6	4.3	1.3	1.5	.7	3.5
Pri 1	1.6	1.4	.8	3.8	1.7	2.3	.6	4.6	1.7	1.6	.7	4.0
Pri 2	1.9	1.5	1.0	4.4	1.8	2.2	.6	4.6	1.9	1.2	.8	3.9
AVERAGE	2.1	1.6	.8	4.5	2.1	2.5	.6	5.2	2.1	2.4	.8	5.3
STD DEV				1.743				.719				2.178

Source: MAC Analysis Reports, T2024)

TABLE XV

MAC Handling Time Percentages (From East Coast)

(Total of TP-1 (999), TP-1, TP-2)

APOE-APOD	SEPTEMBER 84 A*	SEPTEMBER 84 B**	FEBRUARY 85 A*	FEBRUARY 85 B**	MARCH 85 A*	MARCH 85 B**
CHS-HOW	72.1	57.0	0	0	75.6	86.0
CHS-MHZ	59.6	51.5	0	0	81.0	88.8
CHS-PIK	96.1	99.5	0	0	97.5	98.7
DOV-ADA	21.3	33.8	19.1	57.9	29.0	71.0
DOV-ATH	12.6	40.5	16.3	59.0	23.0	60.9
DOV-AVB	15.7	13.3	NONE		8.2	4.5
DOV-FRF	44.2	82.3	69.7	83.5	95.1	97.0
DOV-MHZ	11.6	8.1	28.2	33.6	39.3	41.1
DOV-RMS	87.5	95.2	85.3	91.9	93.9	97.4
DOV-RTA	19.4	11.2	7.7	7.5	NONE	
DOV-TOJ	30.7	16.4	35.4	23.8	46.1	51.0
NGU-KEF	96.3	96.7	NONE		85.7	88.3
NGU-NAP	56.0	53.6	NONE		83.3	85.7
NGU-RTA	67.6	29.9	89.4	84.0	66.7	51.7
NGU-SIZ	65.0	57.5	0	0	39.7	36.8
AVERAGE	44.0	49.8	29.3	36.8	61.7	68.5

*NOTE: Percent of shipments handled through APOD in 4 days or less.

**NOTE: Percent of tonnage handled through APOD in 4 days or less.

3 Month average: percent of shipments: 45.0
percent of tonnage: 51.7

Source: (MAC Analysis Reports, T2024)

TABLE XVI

MAC Handling Time Percentages (From West Coast)

(Total of TP-1 (999), TP-1, TP-2)

APOE-APOD	SEPTEMBER 84		FEBRUARY 85		MARCH 85	
	A*	B**	A*	B**	A*	B**
SBD-CRK	97.8	97.8	NONE		20.0	.3
SBD-DNA	95.1	96.6	NONE		84.4	88.4
SBD-HIK	99.0	99.9	NONE		99.0	99.7
SBD-OKO	92.0	96.9	NONE		100.0	100.0
SBD-UAM	96.9	98.2	100.0	100.0	100.0	100.0
SUU-CRK	75.2	78.5	74.8	74.2	22.9	21.6
SUU-CUA	20.2	22.4	58.5	52.1	58.8	58.1
SUU-DNA	45.5	59.1	68.2	67.1	79.1	78.4
SUU-HIK	82.4	82.0	96.8	97.5	96.9	96.4
SUU-OKO	59.8	79.3	88.8	76.7	90.3	88.3
SUU-OSN	64.5	83.5	55.4	64.4	46.6	41.9
SUU-UAM	85.7	89.1	69.6	66.0	68.3	64.4
TCM-OKO	92.0	93.5	NONE		89.5	87.7
TCM-OSN	49.3	52.4	NONE		49.5	40.1
TIK-CRK	19.2	18.0	49.0	47.9	15.3	14.4
TIK-DNA	45.9	42.2	37.6	40.2	57.5	71.5
TIK-OKO	45.2	47.4	46.0	53.3	38.5	25.1
AVERAGE	68.0	72.8	67.7	67.2	65.7	63.3

*NOTE: Percent of shipments handled through APOD in 5 days or less.
**NOTE: Percent of tonnage handled through APOD in 5 days or less.

3 Month average: percent of shipments: 67.1
percent of tonnage: 67.8

Source: (MAC Analysis Reports, T2024)

TABLE XVII

MAC Handling Time Percentages(From Opposite Coasts)

(Total of TP-1 (999), TP-1, TP-2)

APOE-APOD	SEPTEMBER 84 A*	SEPTEMBER 84 B**	FEBRUARY 85 A*	FEBRUARY 85 B**	MARCH 85 A*	MARCH 85 B**
SUU-FRF	NONE		26.9	30.5	43.7	89.2
SUU-KEF	NONE		NONE		0	0
SUU-MHZ	NONE		22.9	48.9	1.8	22.8
SUU-RMS	8.6	24.0	31.9	41.7	12.6	13.4
TIK-MHZ	73.0	77.1	46.1	39.5	55.6	60.6
TIK-RMS	53.5	54.8	54.9	63.5	68.7	73.1
AVERAGE	45.0	52.0	36.4	44.8	36.5	51.8

*NOTE: Percent of shipments handled through APOD in 4 days or less.

**NOTE: Percent of tonnage handled through APOD in 4 days or less.

3 Month average: percent of shipments- 39.3

percent of tonnage- 49.5

Source: (MAC Analysis Reports, T2024)

TABLE XVIII

Burlington-Northern Delivery Times

From East or West Coast (1)

DESTINATION COUNTRY	MAXIMUM DELIVERY TIME (IN DAYS)(2)(3)(4)(5)
Turkey (ADA)	3
Greece (ATH)	1
Italy (NAP)(AVB)(SIZ)	2
Germany (RMS)(FRF)	2
Panama (HOW)	1
Iceland (KEF)	3
United Kingdom (PIK)(MHZ)	2
Spain (RTA)(TOJ)	2

From West Coast(1)

Philippines (CRK)(CUA)	2
Okinawa (DNA)	NO FLIGHT
Hawaii (HIK)	1
Japan (OKO)	3
Korea (OSN)	3
Guam (UAM)	2

Note (1) Gateway cities are Houston, Los Angeles, Miami, and New York
Note (2) These are maximum times in whole days.
Note (3) Delivery times apply to non-dutiable shipments. Dutiable shipments may require up to one additional day.
Note (4) Transit times may be increased by up to one day from cities other than gateway cities.
Note (5) For larger shipments, contracts can be negotiated for faster service and reduced prices.

Source: (Burlington Air Express: Quick Reference Worldwide Rates and Service Guide, effective September 15, 1984.)

TABLE XIX

Cost Comparison of an Express Shipment

PACKAGE SIZE/ DESTINATION	BURLINGTON-NORTHERN(1)(2)	MAC(3)						
		CHS	NGU	DOV	SBD	SUU	TCM	TIK
35 Pounds								
Rate Scale A	$220							
Germany				13		62		55
Greece				56				
Hawaii					29	27		
Italy			54	73				
Japan					60	56	53	69
Korea						64	60	
Philippines					81	76		89
Spain			41	44				
United Kingdom		45		53		66		51
Rate Scale B	$314							
Iceland			31					
Panama		18						
Rate Scale C	$390							
Guam					70	68		
Turkey				67				
Other	No Flight							
Okinawa					71	67	63	79
70 Pounds								
Rate Scale A	$375							
Hawaii					57	53		
Germany				87		123		169
Greece				112				
Italy			108	145				
Japan					120	113	105	138
Korea						128	120	
Philippines					162	153		179
Spain			83	88				
United Kingdom		89		107		132		101
Rate Scale B	$594							
Iceland			73					
Panama		36						
Rate Scale C	$740							
Guam				140	136			
Turkey			134					
Other	No Flight							
Okinawa				142	138	126	159	

Note (1): Dutiable shipments cost an additional $30.00.
Note (2): Multiple shipments get a maximum discount of $10 per shipment.
Note (3): MAC rates were compiled at cents per pound rounded to the nearest dollar to APOD's in Tables VII-IX, XI-XIII, and XVII-XVIII.
Source: (Department of the Air Force, U.S. Government Airlift Rates (AFR 76-11 and Non-U.S. Government Airlift Rates (AFR 76-28), 21 Aug 84.

VI. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. SUMMARY

The Department of Defense sets the policy on overseas movement of air freight that the Navy Material Transportation Office (NAVMTO) administers for Navy high priority freight. Currently, only approximately 10 per cent of the shipments of Navy contractor air freight goes by commercial airlines and even less of that is handled by international air freight forwarders. The Navy entered into an agreement in 1981 with Burlington-Northern International Air Freight, Inc. to act only as a consolidator of contractor high priority freight that is destined for overseas and deployed units. Under the terms of the agreement, Burlington-Northern must contact NAVMTO to determine if the freight will travel via MAC or via a commercial carrier.

The international air freight forwarder industry is well established and works closely with the airlines to provide the best customer service at the lowest possible rate. The pure air freight forwarder has the added advantage of being able to use the airline providing the most expeditious service at all times. In particular, Burlington-Northern has an extensive network of offices in the United States that enables them to provide expedited overseas service. Additionally, they have a policy of treating their overseas agents as long-term members of the organization, thereby receiving the best agency possible.

The Military Airlift Command provides the same intransit service to all branches of the military on each regularly scheduled flight regardless of shipment priority. Additionally, once the freight is delivered to the overseas

air freight terminal it still must be sorted and is often delayed awaiting either pickup by the Navy customer or further forwarding instructions. However, MAC's published tariffs are less expensive than published commercial alternatives.

Finally, any discussions of comparative air freight services must take into consideration that MAC has the responsibility to provide the airlift necessary for the wartime deployment of fighting forces and providing sustaining logistical support for these fighting forces.

B. CONCLUSIONS

The Navy could make better use of international air freight forwarders by sending a larger percentage of high priority freight by commercial means. The air freight forwarder has a total system concept with one-stop billing and a flexible delivery schedule. In a deregulated carrier industry the forwarder is not dependent upon any one airline. They can provide individualized service using state-of-the-art computer networks that give the necessary visibility and traceability required by the Navy. Additionally, if the Navy better utilized international air freight forwarders, these forwarders might be able to negotiate volume discounts with the airlines which could result in lower rates for Navy service.

Air freight forwarders, being in the service business, would do everything possible to assure that their customers' needs are met and repeat business is forthcoming. Hence, door-to-door pickup and delivery of express freight and just-in-time deliveries, as opposed to airport-to-airport service, has become the international standard. Customers want the predictability of knowing when they will be served. Reliability is the number one concern, but it is reliability

in the sense that delivery times fall within the RDD or UMMIPS time standards. Additionally, the forwarder can take the burden from NAVMTO of knowing which airline to select, particularly if the routing requires connecting flights and overseas locations in places which the military delivery pipeline does not serve.

Finally, an international forwarder such as Burlington-Northern has offices and agents located strategically throughout the United States and the free-world to meet virtually all Navy needs. They already have the experience of serving big business.

C. RECOMMENDATIONS

While it appears that increased usage of the commercial alternative is feasible based on service, a detailed analysis of the "hard freight" cost data as well as any consolidated shipment discounts is required for more general conclusions. It is recognized that a potential consolidation of express shipments into the "hard freight" category could result in price breaks. If an individual freight shipment weighs 70 pounds or less and the shipper and receiver can accept the MAC delivery times, there appears to be considerable cost savings from using MAC. However, if delivery is required in the shortest possible time then it appears that selection of a commercial alternative would better meet the service time requirement.

Increasing use of the commercial forwarder agent for the majority of high priority freight (except classified and hazardous) to overseas and deployed units appears to be advantageous to the Navy. This is also in line with OMB's Circular No. A-76 (Revised) recommendation to seek competition from commercial activities. The commercial forwarder

can probably get it to the customer quicker with door-to-door service and its international network of agents. Additionally, by stimulating this market's growth it ensures that adequate space on airlines is available in crisis situations. Finally, the forwarder can insure that air freight is equitably distributed among carriers, as is required by current DOD policy.

The current DOD policy calls for shipments weighing more than 150 pounds and originating overseas to be routed through the overseas ACA using the MAC channel airlift criteria. Shipments of 150 pounds or less may be cleared into the commercial air system directly. The primary need for shipments to the U.S. is to return non-RFI mission-essential material for repair and return to correct a casualty. Perhaps a change in the current regulations could be made so that an agency agreement could be established on a global basis overseas for return shipment. This agreement could be negotiated with the same forwarder selected for high priority contractor freight, a Basic Purchase Agreement (BPA) could be issued, and a list of all agent locations could be distributed to deployed ships. Then, if a ship is in a foreign port which is not readily accessible to a Navy terminal, the crew could deliver this material to the forwarder's agent for direct transport to the repair site and return through the same channels. This would result in one central agent providing visibility and control for the entire round trip shipment.

APPENDIX A

NAVY OVERSEAS AIR ROUTING ACTIVITIES

District or area	Designated Area
Argentia	Naval Station, Argentia
Spain, Portugal, North Africa west of Egypt, and those islands in the Mediterranean west of longitude 6 degrees East	Navy Overseas Air Freight Terminal, Rota, Spain
Sixth Fleet units, Greece, Italy, Turkey, Southern France, Mediterranean islands east of longitude 6 degrees East, Jordan, and African and Middle East nations bordering on the Mediterranean east of Libya	Navy Overseas Air Freight Terminal, Naval Air Facility, Naples, Italy
United Kingdom and Northwestern Europe (that area not under the routing cognizance of Navy Overseas Air Freight Terminals, Naples and Rota)	U.S. Naval Activities United Kingdom, London, England
African and Middle East nations in the Red Sea, Persian Gulf, and Arabian Sea areas other than those assigned to Navy Overseas Air Freight Terminal, Naples	Commander Middle Eastern Forces

Guantanamo Bay	Naval Supply Depot(NSD), Guantanamo Bay, Cuba
Bermuda	Naval Station, Bermuda
Puerto Rico	Naval Station, Roosevelt Roads, Puerto Rico
Panama	Naval Support Activity, Canal Zone
Adak	Naval Station, Adak, Alaska
Kodiak	Naval Station, Kodiak, Alaska
Hawaiian Islands	Navy Overseas Air Freight Terminal, Hickam Air Force Base, Hawaii
Johnston Island	Air Force Base, Johnston Island
Midway Island	Naval Station, Midway Is.
Guam	Naval Supply Depot, Guam
Japan	Naval Supply Depot, Yokosuka, Japan (Navy Overseas Air Freight Terminal, Yokota Air Base)
Republic of the Philippines	Naval Station, Sangley Point, R.P., NSD, Subic Bay, R.P.

Source: (NAVSUP Manual, Volume V)

APPENDIX B

CONUS OUTBOUND SHIPMENTS FOR MAC CHANNEL AIRLIFT

Except when otherwise exempted from challenge by the Naval Supply Systems Command, all shippers of Navy-funded/sponsored material offered for outbound airlift from CONUS will submit TCMD data covering these shipments directly to NAVMTO Norfolk. NAVMTO will challenge the requirement to air-ship certain freight based on the following criteria:

a. The following types of shipments are exempted from the aforementioned challenge authorization:

(1) JCS designated project codes (9--series) listed in Appendix B13 to MILSTRIP (DOD Instruction 4140.17M) and as promulgated by separate messages during contingencies and exercises.

(2) RDD 999, CASREP, NMCS, NORS, NFE, ANORS shipments (Coded as "9," "N" or "E" in cc 62 or "G" or "W" in cc 40 of the 1348-1), and TP-1 and TP-2 material with ALPHA/ALPHA/Numeric Group I Project Codes when the first ALPHA code is A, B, E, F, G, H, I, J, or K; the second ALPHA code is K and the numeric code is an 0, 2, 3, or 7, in cc 57-59, will not be challenged regardless of weight or cube if the requisition date is under 90 days old.

(3) United Kingdom POLARIS missile material that cites TAC N645.

(4) TP-1 project coded Fleet Ballistic Missile Material (FBM) outbound from the CONUS.

(5)Shipments that weigh 50 pounds or less.

(6) Foreign Military Sales (FMS) shipments.

(7) RFI-CLAMP project 715.

b. Other TP-1 and all TP-2 shipments will be challenged if:

(1) Weight exceeds 300 pounds, or

(2) Volume exceeds 24 cubic feet, or

(3) The requisition date is more than 90 days old, or

(4) 2nd Dest-All TP2 (unless RDD 999, 852, etc.) divert to surface, or

(5) 1st Dest- TP1 & 2 (unless RDD 999, 852, etc.) divert to surface. During the clearance process, shipping activities will advise NAVMTO when shipments fall into one or more of the following categories:

a. Shipments that require expediting action (Greensheet action).

b. Shipments that are accompanied by couriers or monitors.

c. Shipments that require special handling, hazardous/dangerous freight, short shelf-life material, sensitive shipments, classified freight, etc., NAVMTO will ensure that proper consignment and routing instructions are used for shipments to ships and mobile units.

A shipment that is subject to challenge will not be released for movement to the MAC APOE until a response to the challenge action from the requisitioner is received justifying airlift. If after six days, a response to challenge action has not been received, the shipper will contact NAVMTO by telephone to receive shipping instructions. After receiving these instructions from NAVMTO, the shipper will promptly process and forward the shipment by the directed mode of transportation.

Source: (NAVSUP Instruction 4630.22B)

APPENDIX C

SHIPMENTS VIA COMMERCIAL AIRLIFT

The decision to use commercial airlift should be made only after it has been determined that movement by surface transportation or scheduled DOD air transportation will not meet the UMMIPS time standard or the Required Delivery Date (RDD), when assigned.

Foreign Flag Carriers

U.S. certified air carriers (those holding certificates under Section 401 of the Federal Aviation Act of 1958, 49 U.S.C. 1371 (1970)) must be used for all Government-financed commercial foreign air transportation, of Department of Defense sponsored persons or property if service provided by those carriers is "available." Generally, passenger or freight service by a certificated air carrier is "available" if the carrier can perform the commercial foreign air transportation needed by the agency and if the service will accomplish the agency's mission. If U.S. certificated air carriers are not available, it is imperative that a certificate/memorandum be explicit and be annotated on or attached to the Bill of Lading. It must indicate that U.S. flag service does not operate over the route; will not operate in time to meet the required delivery date; cannot accommodate the shipment; or other reasons why only foreign flag service would suffice. The Comptroller General of the United States will disallow payment from appropriated funds to a foreign flag carrier/air freight forwarder unless a certificate/memorandum from the shipper adequately explaining why service by U.S. flag air carriers is "unavailable" is attached to the document presented for payment.

Shipments Within CONUS

Shipments of more than 150 pounds must be cleared/routed by NAVMTO Norfolk, Virginia. All Shipments that require a courier or escort must be cleared/routed by NAVMTO Norfolk, Virginia. The NAVMTO Air Route Order number (NARO) must be entered on the GBL. Shipments weighing 150 pounds or less, that do not require a courier or escort, may be cleared into the commercial air system by the activity transportation officer.

Shipments from CONUS to Overseas

Shippers of Navy funded material will obtain clearance/routing from NAVMTO Norfolk, Virginia for all shipments regardless of weight to be moved by commercial air including courier or escort movements, except shipments via UPS Blue Label from CONUS to Hawaii.

Shipments that Originate in Overseas Areas

Shipments of more than 150 pounds must be cleared/routed by the Overseas Air Clearance Authority using the same criteria that is required for MAC channel airlift. All shipments that require a courier or escort must be cleared/routed by the Overseas Air Clearance Authority. Shipments weighing 150 pounds or less, that do not require a courier or escort may be cleared into the commercial air system by the activity transportation officer. The accounting copy of GBLs citing the Navy Management Fund in the Appropriation Block must be forwarded to NAVMTO within 24-hours after shipment has departed.

Source: (NAVSUP Instruction 4630.22B)

APPENDIX D

SHIPMENTS ORIGINATING IN OVERSEAS AREAS FOR MAC CHANNEL AIRLIFT

Except when otherwise exempted by the appropriate Navy CINC, all shippers of Navy-funded/sponsored material offered for airlift by MAC will submit TCMD data covering these shipments directly to the Navy overseas Airlift Clearance Authority(ACA). The ACA will challenge the requirement to airlift certain freight based on the following criteria:

a. The following types of shipments are exempted from the aforementioned challenge authorization:

(1) RDD 999, CASREP, NORS, NFE, ANORS shipments (Coded as "9," "N," or "E" in cc 62 or "G" or "W" in cc 40 of the 1348-1) will not be challenged regardless of weight or cube if the requisition date is under 90 days old.

(2) TP-1 and TP-2 retrograde repairables shipments, which are identified by an "R" in the 15th position of the TCN, are exempt from; challenge.

(3) Foreign Military Sales (FMS) shipments.

b. Other TP-1 and TP-2 shipments will be challenged if:

(1) Weight exceeds 300 pounds, or

(2) Volume exceeds 24 cubic feet, or

(3) The requisition date is more than 90 days old.

During the clearance process, shipping activities will advise the Navy Overseas ACA of shipments that fall into one or more of the following categories:

a. Shipments that require expediting (Greensheet) action.

b. Shipments that are accompanied by couriers or monitors.

c. Shipments that require special handling, i.e., environmental control, hand-to-hand receipt, REPSHIP, hazardous/dangerous freight, short shelf-life items, sensitive shipments, classified freight, etc. The ACA will use extreme care to ensure that proper consignment and routing instructions are used for shipments consigned to ships and mobile units.

Source: (NAVSUP Instruction 4630.22B)

APPENDIX E

LISTING OF ALL OF THE CITIES BY STATE IN THE U.S. WITH BNAFI OFFICES

Alabama
- Birmingham
- Dothan
- Huntsville
- Mobile
- Montgomery

Alaska
- Anchorage
- Fairbanks
- Juneau
- Kenai
- Kodiak

Arizona
- Phoenix
- Tucson

Arkansas
- Fayetteville
- Fort Smith
- Little Rock

California
- Bakersfield
- Chico
- Fresno
- Los Angeles
- Monterey
- Palm Springs
- Sacramento
- San Diego
- San Francisco
- Santo Barbara
- Santa Maria
- Stockton
- Visalia

Colorado
- Colorado Springs
- Denver
- Grand Junction

Connecticut
- Bridgeport
- Hartford

District of Columbia
- Washington National
- Dulles International

Florida
- Elgin Air Force Base
- Fort Myers
- Jacksonville
- Miami
- Orlando
- Pensacola
- Tallahassee
- Tampa
- West Palm Beach

Maryland
- Baltimore

Massachusetts
- Boston

Michigan
- Battle Creek
- Detroit
- Flint
- Grand Rapids
- Iron Mountain
- Kalamozoo
- Lansing
- Muskegon
- Saginaw
- Traverse City

Minnesota
- Duluth
- Minneapolis
- Rochester

Mississippi
- Gulfport
- Jackson

Missouri
- Columbia
- Joplin
- Kansas City
- Saint Louis
- Springfield

Montana
- Billings
- Bozeman
- Butte
- Great Falls
- Helena
- Kalispell
- Missoula

Nebraska
- Grand Island
- Lincoln

Nevada
- Las Vegas
- Reno

New Hampshire
- Manchester

New Jersey
- Newark
- Trenton

New Mexico
- Albuquerque

New York
- Albany
- Binghamton
- Buffalo
- Elmira
- JKF
- Rochester
- Syracuse
- Utica

Georgia
- Atlanta
- Augusta
- Columbus
- Savannah

Hawaii
- Honolulu
- Hilo
- Kahului
- Kona
- Lihue

Idaho
- Boise
- Idaho Falls
- Pocatello
- Twin Falls

Illinois
- Chicago
- Galesburg
- Moline

Illinois (contd)
- Peoria
- Quincy
- Rockford
- Springfield

Indiana
- Evansville
- Fort Wayne
- Indianapolis
- Muncie
- South Bend
- Terre Haute

Iowa
- Burlington
- Cedar Rapids
- Des Moines
- Dubuque
- Mason City
- Sioux City
- Waterloo

Kansas
- Parsons
- Topeka
- Wichita

Kentucky
- Bowling Green
- Lexington
- Louisville
- Paducah

Louisiana
- Alexandria
- Baton Rouge
- Lafayette
- Lake Charles
- Monroe
- New Orleans
- Shreveport

Maine
- Bangor
- Portland

North Carolina
- Asheville
- Charlotte
- Fayetteville
- Greensboro
- Raleigh
- Wilmington

North Dakota
- Bismarck
- Fargo
- Grand Forks
- Minot

Ohio
- Akron
- Cincinnati
- Cleveland
- Columbus
- Dayton
- Toledo

Oklahoma
- Oklahoma City
- Tulsa

Oregon
- Eugene
- Medford
- Portland

Pennsylvania
- Allentown
- Dubois
- Erie
- Harrisburg
- Lancaster
- Philadelphia
- Pittsburgh
- Scranton
- Williamsport

Rhode Island
- Providence

South Carolina
- Charleston
- Columbia
- Florence
- Greenville
- Myrtle Beach

South Dakota
- Aberdeen
- Pierre
- Radid City
- Sioux Falls
- Watertown

Tennessee
- Bristol
- Chattanooga
- Jackson
- Knoxville
- Memphis
- Nashville

Texas
- Abilene
- Amarillo
- Austin
- Beaumont
- Brownsville
- College Station
- Corpus Christi
- Dallas
- El Paso
- Houston
- Laredo
- Longview
- Lubbock
- McAllen
- Midland
- San Angelo
- Texarkana
- Tyler
- Waco
- Wichita Falls

Utah
- Salt Lake City

Vermont
- Burlington

Virginia
- Charlottesville
- Lynchburg
- Norfolk
- Richmond
- Roanoke
- Winchester

Washington
- Pasco
- Seattle
- Spokane
- Yakima

West Virginia
- Charleston
- Huntington
- Parkersburg

Wisconsin
- La Crosse
- Madison
- Manitowoc
- Milwaukee
- Oshkosh
- Nausau

Wyoming
- Casper
- Cheyenne

APPENDIX F

LISTING BY COUNTRY AND CITY OF BNIAFI INTERNATIONAL STATIONS

Argentina
- Buenos Aires

Australia
- Adelaide
- Brisbane
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APPENDIX G

SERVICE AGREEMENT BETWEEN NAVY MATERIAL TRANSPORTATION OFFICE AND BURLINGTON-NORTHERN AIR FREIGHT

I. This Agreement, executed on the 19th of June 1981 between the Navy Material Transportation Office, hereafter referred to as NAVMTO, and Burlington-Northern Air Freight, hereafter referred to as Agent, provides for the receipt, pickup, assembly/consolidation, documentation and transshipment of Navy material via military and commercial air/motor/ocean carriers from CONUS to destinations overseas and to specific military installations, or other destinations in CONUS.

II. SERVICES TO BE PROVIDED. The Agent agrees to provide services as specified below:

A. Material shall be picked up from the various NSCO locations daily utilizing Agent furnished equipment. Freight shall be delivered to Agent's terminal daily.

B. Agent shall containerize all shipments as required by NAVMTO.

C. The Agent shall:

1. provide inland CONUS routing instructions to vendors according to NAVMTO direction and policy.

2. instruct vendors to divert shipments as directed by NAVMTO to MOTBA or other CONUS ports of embarkation for QUICKTRANS, MAC or CONTRUCK delivery.

3. provide regular service under this agreement at Agent's terminal during normal working hours Monday through Friday 0800-2400, Saturday 0800-1700. In addition, when and as required, Agent agrees to provide extra office shift coverage for any hours, other than normal, Monday through

Saturday. Service in addition to normal working hours and extra office shift coverage (as defined below) will be provided on a non-work day basis; example Sundays and Federal holidays.

D. Agent shall provide extra office shift coverage as follows:

1. Coverage by a person capable of performing the services assigned by an air consolidator, to include receiving freight over the counter, documentation of shipments, booking, expediting status of flights, specific shipments, and when requested, to arrange for the physical movement of freight.

2. Upon notification by the Duty Officer, NSCO, prepare documentation for emergency shipments after duty hours.

E. Agent shall provide a computer terminal and printer capable of producing OCR scanable messages. Software must also be developed and paid for by the Agent. Systems analysis and flow charts will be provided by NAVMTO to assist in controlling the flow of Government material.

III. RESPONSIBILITIES.

A. NAVMTO:

1. shall supply the Agent with presigned skeletonized Government Bills of Lading to be used for transshipment of freight to POA and CONUS destinations.

2. shall supply Agent with blank Government documents as are necessary for the successful transshipment of freight.

3. shall request Navy purchasing offices to supply Agent with a copy of each purchase order in which Agent is designated transshipment responsibility.

B. Agent:

1. shall complete and/or prepare all shipping documents. Normally, information required for preparation will be available to Agent from 1348-1s, purchase orders, shipping labels or container markings applicable to each shipment.

2. shall book the TP1 and 2 freight with a commercial airline or MAC (as designated by NAVMTO) and deliver containerized freight to the airline in conformance with validated booking.

3. shall arrange for foreign custom clearance (as appropriate) and delivery of air freight from the destination air terminal to ultimate consignee as directed by NAVMTO.

4. shall provide fiberboard containers at Agent's cost with the Government having the option to buy or furnish from its stock.

5. shall be responsible for the performance of packing/packaging and restricted articles certification, as required, from information contained in 1348-1s or purchase orders. Compliance with IATA, CFR 49, AFR 71-4 or IMCO is required as appropriate. Reimbursement of costs to Agent will be actual cost (supported by invoice).

6. shall remove excess dunnage from incoming shipments to facilitate containerization and reduce air freight charges. Such dunnage will include pallets, excess exterior packing, straps, etc.

7. shall send to NAVMTO on each work day a copy of shipping documents within 12 hours after delivery of freight to and receipt by the carrier. (All yellow copies of GBL will be returned to NAVMTO).

8. shall telephone cognizant component of NAVMTO not later than 1600 hours daily and provide a report of shipment of all material shipped, identified by TCN. Exceptions: Guam-morning after shipment, Oakland-morning of shipment, Norfolk-as shipment occurs.

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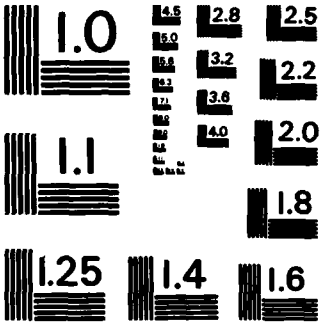

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9. shall prepare and transmit to NAVMTO a daily log of incoming vendor calls indicating the name of vendor, shipment point or origin, pieces, weight and cube and the name of the inland carrier selected or designated to transport the material to the Agent or other designated point. All shipments which fall within the Navy Challenge Program, i.e., weight, cube, requisition date, or transportation costs, will be referred to NAVMTO for routing instructions.

10. shall prepare and transmit to NAVMTO by 1500 daily a log of shipments received at their facility. (NSC Oakland shipments are exempt from this requirement).

11. shall prepare and transmit to NAVMTO a listing of all shipments (Packing List) made to each destination, by 1500 daily.

12. shall unfrustrate shipments by obtaining a transportation control number in a timely manner to include, if required, calling the vendor.

13. shall maintain records for complete line item traceability and financial accountability. The following documentation is required to be produced, transmitted and/or held by the Agent.

a. Packing List by individual line item shall be transmitted daily to NAVMTO Rep, MTMCWA, Oakland. Elements of the list will include: : (1) airbill/bill of lading number, (2) date shipped, (3) type of containers, (4) container number (when applicable), (5) tare weight, (6) GBL numbers, (7) destination airport/distribution point, (8) Flight/truck number, (9) pieces, (10) weight, (11) cube, (12) TCN numbers, (13) consignee, and (14) TAC number.

b. Complete GBL data elements will include container TCN(s) as indicated on respective packing list(s).

c. Proof of overseas delivery via commercial air will be passed to NAVMTO Rep, Oakland within 48 hours after overseas delivery.

14. shall consolidate, document on DD 1384 (TCMD), prelode and deliver TP3 freight to MOTBA for subsequent surface transportation to POA.

IV. LIABILITY. The terms and conditions which govern Government Bills of Lading shall also govern this agreement.

V. RIGHTS IN TECHNICAL DATA AND COMPUTER SOFTWARE.

A. The Government will receive unlimited rights within DOD in computer software reasonably required to be originated or developed under this service agreement, or generated as a necessary part of performing this agreement. The Government will receive a copy of all documentation relating to Agent furnished software and enhancement thereto. This documentation will include, but is not limited to, detailed system specifications including: input/output formats, general program specifications, system data flow and related general information. The Agent will review the documentation furnished to the Government twice each contract year in order to ensure that all software changes/enhancements have been furnished to the Government.

VI. BILLINGS.

A. Shipments via Commercial Air.

All terminal services, i.e., pickup, delivery, assembly/consolidation and documentation, will be advanced to commercial air carrier on the Airwaybill identified as "Terminal Transfer" charges. The Airwaybill will be supplemented by an Agent invoice listing the terminal transfer charges by each item.

B. Handling costs for shipments moved via MAC or surface will be billed on Public Voucher Form 1034.

C. Military Facilities.

Agent will prepare TCMDs for shipments routed via MSC, MAC, QUICKTRANS, or CONTRUCK.

1. Shipments to Travis AFB will be routed via facilities of Navy contract carrier or as otherwise authorized by NAVMTO.

2. Intra-state California shipments will be routed as directed by NAVMTO.

VII. TERMS OF AGREEMENT.

Services under this agreement will commence 1 July 1981. This Agreement may be terminated by either party upon written notice of not less than 90 days. The provisions of Defense Acquisition Regulation (DAR) Clauses 7-1902.16, 7-1909.5 and 7-1910.3 are hereby incorporated into this Agreement.

Upon termination of this Agreement, NAVMTO agrees to pay handling charges only for the material that is turned over to NAVMTO or a new Agent.

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