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A STUDY TO DETERMINE THE ROLE OF COMPETITION IN CONTRACTING FOR THE MOVEMENT OF AIR FREIGHT WITHIN THE DOMESTIC MARKET

Captain John R. Forster, USA
Major Roland A. Hassebrock, USAF
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LSSR 9-80

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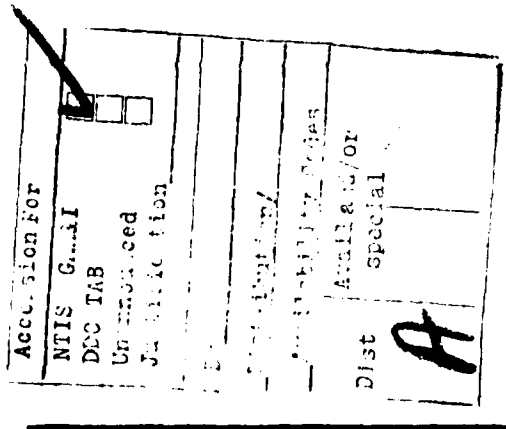

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As a result of the Airline Deregulation Act of 1978, the Civil Aeronautics Board (CAB), ceased setting rates which it had previously done under part 288 of its Economic Regulation. This forced the Military Airlift Command (MAC) to develop a new pricing method that would allow competition to determine price in the awarding of contracts for military air freight service. This study delimited the scope of the problem to only domestic military air freight service. The basis of this study was to determine a contracting method which could be used by MAC and satisfy the three objectives of: maintaining a flexible and sufficient Civil Reserve Air Fleet (CRAF), providing efficient peacetime domestic military air freight service, and permitting competitive market forces to determine price. The researchers' recommended method is that MAC should set rates using procedures previously employed by CAB. The contract should be a fixed price type with provisions for escalation tied to rising fuel costs. The solicitation procedure as now used should be continued with USC 2304(a)(16) cited as the exception for not using formal advertising. The study additionally presents possible areas of further study which might lead to alternative methods of acquiring these services.

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A STUDY TO DETERMINE THE ROLE OF COMPETITION IN CONTRACTING FOR THE MOVEMENT OF AIR FREIGHT WITHIN THE DOMESTIC MARKET

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Logistics Management

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MASTER OF SCIENCE IN LOGISTICS MANAGEMENT
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GLOSSARY OF TERMS

Air Carriers--a term used to refer to the combined operations of Certificated Route Air Carriers and Supplemental Air Carriers possessing fixed wing aircraft only (15:2).

Block Speed--"computed in accordance with Air Force airlift planning directives using the average cruise speed with 25 minutes added for takeoff, approach, and block in [29:2-4]."

Certificated Route Air Carrier--

> An air carrier holding a certificate of public convenience and necessity issued by the CAB authorizing the performance of scheduled service over specific routes. Certain nonscheduled, or charter operations may also be conducted by these carriers [3:95].

Civil Reserve Air Fleet (CRAF)--the CRAF is comprised of U.S. registered civil transport aircraft operated by Certificated Route Air Carriers and Supplemental Air Carriers. The number and type of aircraft required to support Joint Chiefs of Staff (JCS) approved contingency plans are determined by Military Airlift Command (MAC) and forwarded to the Director, Office of Emergency Transportation (OET), Department of Transportation (DOT), who in turn allocates civil aircraft to the CRAF by FAA registration number. Allocation is made to one of the four CRAF segments depending on the aircraft's operating characteristics.

CRAF participants must be capable of responding with committed aircraft and aircrews as outlined in contracts with MAC. Activation of the CRAF can occur in any one of three stages ranging from limited expansion of airlift capability committed to the Commander, MAC (Stage I) to emergency situations requiring additional airlift capability to meet major contingency airlift requirements (Stage II) and requirements resulting from a state of national emergency declared by the President (Stage III). Response time ranges from 24 hours for Stages I and II to 48 hours for Stage III (29:pp.2-1 to 2-4).

Domestic Air Carrier--"certified Air Carrier servicing routes within the continental United States [14]."

Express (Air)--

> Property transported by air under published air express tariffs filed with the Civil Aeronautics Board. The transportation by air of express is conducted on the basis of agreements between the Railway Express Agency and the air carriers [3:95].

Freight--"Property other than express and passenger baggage transported by air [3:96]."

Freighter--"An aircraft suited only to freight (or cargo), rather than passengers. Also known as regular or pure freighter [11:123]."

LOGAIR--"Air Force segment of the Military Domestic Air Freight Market [17]."

Mobilization Base Index (MBI)--the total value for all aircraft of a particular carrier (29:2-4).

Mobilization Value (MV)--measure of the value DOD places on an aircraft of a particular carrier (29:2-4).

QUICKTRANS--"U.S. Navy segment of the Military Domestic Air Freight Market [2]."

Supplemental Air Carrier--a classification of air carriers holding certificates of public convenience and necessity issued by the CAB, authorizing them to perform passenger and cargo charter services supplementing the scheduled service of the certificated route air carriers (1:139).

Ton-Mile--

> One short ton (2,000 pounds) transported one statute mile (5,280 feet): ton-miles are computed by multiplying the aircraft miles flown on each inter-airport hop by the number of tons carried on that hop [4:98].

U.S. Civil Air Carrier Fleet--a generic term used to refer to total aircraft operated by all aircraft operators certificated by the Federal Aviation Administration (FAA) for the transportation by air of persons, property, and mail. The fleet is comprised of five types of air carriers: Certificated Route Air Carriers, supplemental air carriers, commercial operators, air taxi operators, and travel clubs (4:58,139).

CHAPTER I

DOMESTIC MILITARY AIR FREIGHT DILEMMA

Background

Since 1952, DOD has coupled the acquisition of its domestic and international supplemental airlift requirements with the establishment of a Civil Reserve Air Fleet (CRAF) under contract to meet both DOD peacetime and emergency airlift requirements (28:1). The Civil Reserve Air Fleet is an integral part of the National Transportation Plan's standby programs and procedures for emergencies. Established by Executive Order No. 10999 in 1952, the plan requires the Office of Emergency Transportation of the Department of Transportation to allocate to the Department of Defense (DOD) specific aircraft, with designated capabilities, for use in direct support of the military airlift needs. The DOD, working with the nation's airlines, arranges for a contractual release of the CRAF aircraft for emergency service. To help develop the program, military airlift contracts are awarded only to those civil airlines that are members of CRAF. The civil carriers are thus encouraged to procure modern aircraft suitable for military use in emergencies (16:513).

Prior to 1961 a number of different contract methods were attempted which endeavored to incorporate CRAF requirements and varying forms of negotiation and competition. Many problems occurred during the period between 1952 and 1961. Before 1961, the competitive bidding; i.e., award to the lowest bidder, method was used. This method was said to place pressure on the supplemental carriers, which were then small businesses heavily dependent on military revenues, to enter bids below cost in order to avoid idle capacity (25:3). Following a disastrous airline crash in 1961 near Richmond, Virginia, in which seventy-four Army recruits died, a number of voices questioned the competitive award of transport contracts. This was one of several accidents involving the supplementals which led Najeeb E. Halaby, then head of the Federal Aviation Administration, to voice concern at a dangerous trend. Investigations by the Civil Aeronautics Board (CAB) and a House Armed Services subcommittee disclosed that the supplemental industry was in a questionable condition. The CAB concluded, for example, that the flight crew in the Richmond crash was "not capable of performing the function assigned tc it" and that the company's maintenance practices were "substandard" (22:108). Congressman Walter, a senior Democrat from Pennsylvania and Representative for many of the recruits killed in the crash, reinforced this view. Reporting on his own investigation of the

supplementals, he concluded that many of them were marginal and nearly bankrupt (22:108). These were not the only voices raised concerning what was viewed as destructive competition. Hearings held the previous year before the subcommittee on National Military Airlift of the House Armed Services Committee brought criticism from the airline industry itself. Most industry witnesses agreed with the subcommittee that the competitive bidding system then in use had caused military tariff rates to fall to levels that threatened an imminent decline in air safety (22:213).

As a result of Congressional interest and criticism, the CAB finally took action to resolve the apparent shortcomings of the competitive environment. The CAB chose to regulate the supplemental air freight industry through the establishment of minimum rates. The setting of minimum rates by the Board at a level which guaranteed a return on investment to carriers operating at or near, industry-wide average costs, was thought necessary to eliminate the possibility that competitive pressures could cause uneconomic bidding by carriers reliant on military contracts. The Board computed the rate on a unit-per-mile basis by averaging the costs attributed by the Military Airlift Command (MAC) carriers to military transportation with an adjustment for cost changes anticipated during the current term, and adding an after-tax return on investment (10.5 percent in 1979) (25:3).

By establishing these minimum rates, price was no longer a basis for the award of contracts.

> It is permitted to depart from allocation by price under 10 U.S.C. 2304(a)(16) . . . after making a determination that "it is in the interest of the national defense to have . . . a supplier available for furnishing . . . services in case of national emergency" [26:5].

This supported two of the recommendations made by a committee appointed by the Secretary of the Air Force in 1958, who had, among other issues, reviewed the Military Air Transport Service (MATS), forerunner to what is now referred to as MAC, responsibilities. CRAF-related committee recommendations included:

1. MATS procurement policy should require all commercial augmentation to be procured at Civil Aeronautics Board tariff rates.

2. Carriers should be committed to CRAF to receive peacetime business (21:11).

Since 1961, MAC has paid for services rendered by the CRAF airlift carriers in accordance with rates established by the Civil Aeronautics Board. CRAF airlift award procedures have been derived by applying a formula which determines the mobilization value of each type of CRAF aircraft. This formula provides a basis for evaluation of the cube weight, speed, and range characteristics of each type of CRAF aircraft offered against a common denominator (28:4). In addition, a policy designed to protect the

government from having airlines relying solely on government contracts was established. This policy requires participants to have at least 60 percent of their business with the commercial sector of the market. This participation is verified through certification procedures or audit of cost data submitted by the airlines to MAC (14).

By establishing the Boeing 707 as the common denominator, the calculations for mobilization value (MV) of a cargo aircraft are as follows:

$$WF = \frac{\text{weight of particular aircraft}}{\text{weight of 707}}$$

$$CF = \frac{\text{cube of a particular aircraft}}{\text{cube of 707}}$$

$$SF = \frac{\text{block speed of particular aircraft}}{\text{block speed of 707}}$$

$$PF = CF \times WF$$

$$MV = PF \times SF \times IF \times 10$$

where PF = payload factor,

SF = speed factor,

IF = incentive factor,

CF = cube factor,

WF = weight factor, and

MV = mobilization value.

Incentive factors of 100 percent for convertible aircraft, and 80 percent for freighters are included in the formula.

(See Appendix A for illustration of MV calculations.) Mobilization value formulas for passenger aircraft are computed similarly but use a 40 percent incentive factor.

An example of how awards have been made under the CAB-established minimum rates is as follows: the airlines submit their offers by volunteering set quantities of specific aircraft types. The rates are based on CAB-approved rates and, thus, the evaluation for award is through the process of converting aircraft offered by applying Mobilization Value. For this example, the Mobilization Values were extracted from MAC Request for Proposal (RFP) F11 626-78-R-0033). See Table 1.

TABLE 1

CALCULATIONS FOR MOBILIZATION VALUE

Aircraft	Block Speed (knots)	ACL[a] (tons)	MV
B-727C/QC	345	17.895	6.174
DC-9-30C	325	17.431	5.665
L-100-30[b]	245	21.755	5.330
L-100-20[b]	245	19.005	4.656
L-100-10/L-382[b]	245	15.920	3.900
L-188C	240	17.310	4.154

[a]Carrying capacity as used in DOD planning.

[b]ACL for the L-100 aircraft are based on CRAF planning factors and pallet height of 100 inches.

Applying this MV against the proposals of three offerors, the contracting officers arrive at the award distribution. If, therefore, there are three responses to this RFP: (1) 12 L-100-30, 9 L-188C; (2) 8 L-188C; and (3) 8 L-188C, and these meet the total requirements, then the percentage of total award would be as illustrated in Table 2.

TABLE 2

SAMPLE AWARD COMPUTATION

Carrier	No/Type of Aircraft	Mobilization Value	Total Mobilization Points	Percent of Total
1	12 L-100-30	5.330	63.960	60
	9 L-188C	4.154	37.386	
			101.346	
2	8 L-188C	4.154	33.232	20
3	8 L-188C	4.154	33.232	20
			167.810	100

This award distribution may, however, be further limited by the specific capability of a particular aircraft; i.e., the number of doors. Since some of the established routes do have specific configuration requirements, bidder #2, although by strict application of MV, should have received $10M (based on a $50M overall requirement), would only be awarded $8M because his L-188s only have one door and $8M is the maximum available for routes with this

established requirement. Therefore, although the application of MV does provide a basis for award with the intent of preserving the CRAF, the factors of route requirements, Federal Aviation Administration (FAA) certificates, and other restrictions for the company do have an additional bearing on the final award.

Thus MAC's method of contracting relies on neither competition nor negotiation of final price. Award of contracts is based generally upon proportional contribution to the CRAF.

While the contracting method was relatively straightforward to apply, there were related developments which had a potential impact on the military air freight market. Two of these developments will be highlighted. First, following a rapid buildup for Vietnam in which large numbers of contracts for commercial aircraft were awarded, the use of commercial carriers has decreased. Table 3 portrays the value of contracts with commercial carriers from 1963-1978.

While the dramatic reduction in CRAF contracts can be related to the resolution of the Vietnam situation, the relatively lower monetary value of these CRAF contracts during recent years was caused by two additional factors. These factors are: first, efforts of the DOD to reduce expenses by increasing the use of the Military Airlift Command (MAC) aircraft for peacetime lift; and second, the nature of outsized military equipment precludes its

TABLE 3

DOD CONTRACT AWARDS FOR COMMERCIAL AIR MOVEMENTS [16:515]
(Constant Dollars)

Fiscal Year	$ Million	Fiscal Year	$ Million
1963	254.0	1971	539.0
1964	238.3	1972	531.6
1965	277.3	1973	363.7
1966	438.6	1974	271.5
1967	734.3	1975	352.8
1968	743.0	1976	282.9
1969	669.5	1977	294.4
1970	608.5	1978	170.0

carriage by aircraft in much of the CRAF (16:516). This reduction in usage of commercial carrier had the potential of moving many contractors out of the market with a potential loss of aircraft to the CRAF.

A second development alluded to above is the problem of outsize equipment. At the World Wide Strategic Mobility Conference 1977 sponsored by the Joint Chiefs of Staff, the MAC Commander, General William G. Moore, emphasized:

> Our organic resources and the CRAF produce a lot of airlift capability. But continuing studies show that even with all of our civil aircraft in the CRAF, we don't have enough cargo capacity to meet the most demanding wartime contingencies. The shortage is in cargo capability to move the Army's large, heavy equipment, such as M-60 tanks, weighing over 50 tons each, armored personnel carriers, self-propelled guns, and

> the like . . . of the 225 long-range aircraft, only 130 are cargo capable. Even these cargo versions of the CRAF cannot move the Army's tanks and large guns, ... Future Army plans include more of these outsize pieces of equipment [6:p.II-B-6].

Therefore, utilizing contract award procedures which incorporated CAB minimum rates with awards going to bidders in proportion to their contribution might still result in a less than satisfactory CRAF.

On October 24, 1978, almost a year after Public Law 95-163, designed to deregulate the air freight market was implemented, President Jimmy Carter signed Public Law 95-504, the much publicized Airline Deregulation Act, into law. Its major thrust was to amend the Federal Aviation Act of 1958, to encourage, develop, and maintain an air transportation system which relies on competitive market forces to determine the quality, variety, and price of services (27:v). Additionally, Public Law 95-504 directs the Civil Aeronautics Board to encourage increased entry of both new carriers and existing carriers in new routes and markets to improve the competitive atmosphere. The CAB was also directed to streamline its decision-making process and make provisions for time-phased demise of the CAB by 1 January 1985, unless Congress takes action to the contrary (24:3).

As previously noted, the Armed Forces were exempted from the requirement of competitive pricing when it was in the best interest of National Security. The Deregulation

Act did not negate this exemption. However, Congress' direction to the CAB to streamline and prepare for its phased demise led to the review of a number of functions they were currently performing.

On 4 January 1979 in Economic Draft Regulation 370 (EDR-370) the CAB announced their intention to eliminate the minimum rate provisions which are now used as the price structure in Department of Defense air freight contracts for the commercial air carriers. The following justification was utilized:

> The board has reviewed its military ratemaking function under part 288 [of the FAA Act of 1958]. On the basis of this review, we propose for three principal reasons to amend Part 288 to terminate our exercise of authority over the prices of military charter service, Category A scheduled service, and substitute service, and to rescind three related provisions of our Economic Regulations. First, changes in the economic circumstances of the air charter industry appear to have eliminated any need to protect charter air carriers from competition through the regulation of military rates. The protection of supplemental carriers was in large part the justification for the adoption of Part 288 in 1961. Second, our experience with Part 288 has led us to question whether the regulation of current military air transportation is an efficient way to supply DOD with both current air transportation and commitments to the CRAF. Third, in a series of statutory changes, Congress has clearly signaled its intention to place the maximum reliance upon competitive market forces for the attainment of satisfactory service and price levels in air transportation [25:2].

Anyone with dissenting views or comments on the proposed changes was given until 12 March 1979 to make them known.

On 19 July 1979 Economic Regulation 1134 (ER-1134), Amendment Number 68 to Part 288, declared that in the future

the CAB would no longer set minimum rates. The regulation went on to comment on the correspondence it had received regarding its intent to cease rate making. About those comments the regulation stated:

> In response to the notice of proposed rulemaking, two air carriers (Trans World Airlines and Hawaiian Airlines) filed individual comments, and six carriers (Airlift International, Flying Tiger Line, Hawaiian Airlines, Seaboard World Airlines, Trans International Airlines, and World Airways), filed comments jointly. The Department of Defense filed an answer to the joint comments of the six carriers and to the comments of TWA . . . none of the commenters oppose adoption of the basic proposal. . . . The six air carriers commenting jointly state that they do not oppose termination of the Board's Part 288 rate setting function. However, they disagree with the Board's statement of historical and economic grounds for the proposed action [26:2].

Additionally, referring to the comments of Hawaiian Airlines:

> Hawaiian does not object to the substance of our proposal. However, it states it may "pursue long-term commercial charter commitments for its cargo fleet, and possibly withdraw these aircraft from CRAF, unless some assurance of stability in DOD Contract Pricing is perceived in the near future. . . . Hawaiian also states that the present Logair rate it receives from DOD is too low. . . ." [26:3].

The regulation went on to state that the problem of commitment to CRAF

> . . . might well be remedied if MAC simply purchased CRAF commitments separately from current transportation, instead of relying on carriers to provide the service as a by-product of their transportation operations. Such an approach, at a minimum, would provide DOD with information about the costs of providing CRAF commitments, and this would allow DOD to develop a purchasing strategy to obtain an optimum level of commitments to CRAF [26:11].

The Board made the 19 July 1979 ruling effective immediately to insure that DOD and the carriers providing service could begin negotiations without delay. Unfortunately, without the minimum rates, MAC had lost the integrating tool to tie together current air cargo requirements contracts and commitment to the CRAF. This was especially alarming at a time when certain airlines were considering leaving the CRAF and also stating that the established formula for computing minimum rates was too low.

As a result, the Air Staff has directed MAC to study the problem. A contract study of alternative methods for procuring and pricing commercial air transport services to meet peacetime and emergency defense needs was conducted (18).

Problem Statement

As a result of the Airline Deregulation Act of 1978, the Civil Aeronautics Board has ceased setting the minimum rates utilized by Military Airlift Command to price the variety of Department of Defense airlift contracts they award. Based on this change, a different method of contracting is required which will take into account the goals of increasing market competition and the requirements of the Civil Reserve Air Fleet.

Delimitation

Scope

The scope of this research was limited to the analysis of the problem of contracting for U.S. military air freight requirements in the domestic market.

Research Objective

The objective of the research was to determine a contracting method which will maintain a flexible and sufficient CRAF, provide efficient peacetime domestic military air freight service, and permit competitive market forces to determine price.

Research Questions

1. What is the government's definition of competition in light of the Airline Deregulation Act of 1978 as it applies to the domestic military air freight market?

2. What are the potential domestic military air freight requirements for future contracting to commercial air carriers?

3. Who are the eligible suppliers in the domestic military air freight market and what are their motivations for participating or not participating in the market?

4. What contracting method will incorporate the findings of research questions one, two, and three and meet the objectives of securing adequate competition while not degrading the present contribution to the CRAF?

Justification of Research

Throughout the research process the researchers were unable to find, through literature search, interview, and correspondence, specific research which has been accomplished on their delimited problem. A number of studies have been recently initiated on the subject of contracting for military air freight. One study recently completed addressed six alternative acquisition methods that could be used to assure a flexible and sufficient CRAF, provide efficient peacetime airlift services and permit competitive market forces to determine price (18). However, this study was intentionally or unintentionally directed at the international market with little evidence reflecting attention to the military domestic air freight market which was the area that the researchers felt also needed to be addressed. Numerous studies of the Civil Reserve Air Fleet have been accomplished, a number of which are included in the bibliography. Almost without exception, these studies indicate a shortage of long-range wide-bodied cargo aircraft. No known studies have been made of the short- and medium-range propeller-driven aircraft which currently are the sole supplier of the domestic military air freight market (19). These aircraft, specifically the L-100-30 and the L-188 Electra, are the only aircraft which can economically compete for the currently established requirements (19). In terms of the domestic military air

freight market's past levels of attention in relation to the CRAF, perhaps a recent quote from an Air War College professional study will prove enlightening. The author speaks of the CRAF in these terms: "The CRAF of the mid 1970's is an all jet force [30:26]." This is at a time when the bulk of domestic cargo was being moved by propeller-driven aircraft.

Additionally, a number of economic analyses of carriers which have been accomplished by organizations such as the CAB, have been used to justify treatment of all carriers existing within one market, the military air requirements market. The domestic military air freight market is, in fact, a separate and distinct market with its own unique requirements and suppliers (13). The generalizations made about competitive conditions in the military air cargo market are not necessarily true if applied to the domestic market.

Personal interviews conducted indicate that most studies of deregulation impact are being directed toward the international market rather than the domestic market (13; 14; 19). However, there are experienced personnel specifically within MAC that are now tasked with arriving at a contracting method whereby competition will be used as a basis for contract awards in the domestic military air freight market (14).

Plan of Research Report

In this chapter, the researchers have identified the problem of contracting for MAC commercial airlift service in a competitive environment and still preserving CRAF capability. To more fully understand the problem a brief background of events leading up to the current problem was provided. The researchers then chose to limit their study to the area of the domestic military air freight market which, from interviews with MAC officials and literature review, led them to believe would provide greater challenge to find competitive strategies for contract award. The objective and research questions were then defined.

In Chapter II the specific research design and methodology for answering the research questions are described. Competition has not been operationally defined in this chapter; however, a definition of competition was derived in Chapter III to guide the additional steps in this research.

Chapter III addresses subproblems including an analysis of the data and a discussion of the relationship to the solution of the specific investigative questions identified for each of these subproblems.

The final chapter sets forth the researchers' conclusions for each of the research questions, their recommendation of a contracting method in response to the

management question, and suggestions for further research to provide added insight to the subject area.

CHAPTER II

RESEARCH DESIGN

Introduction

The researchers, in attacking the problem of competitively contracting for the movement of domestic military air freight while at the same time preserving the CRAF, conducted an historical synthesis of data and information and also clarified the essential elements of the problem. In performing this synthesis, the researchers described the sources of information used and how these sources were used to achieve the stated research objective. To restate, from Chapter I, this objective is:

> To determine a contracting method which will maintain a flexible and sufficient CRAF, provide efficient peacetime domestic military air freight service, and permit competitive market forces to determine price.

To present the systematic outline that was followed in this study, this chapter addresses the specific areas of design, description of population and sample, survey plan, and instrument for each of the subproblems. Additionally, the instrument test plan which was used for all instruments is set forth. The subproblems used by the researchers are defined in terms of the specific research questions developed in Chapter I. Overall, the study was accomplished in a step procedure with responses from the previous

subproblems providing the foundation or information to pursue further subproblems. Finally the assumptions and limitations of the methodology are set forth at the end of this chapter.

Subproblem 1

Research Question

What is the government's definition of competition in light of the Airline Deregulation Act of 1978 as it applies to the domestic military air freight market?

Design of Study

In the initial exploratory research, the researchers found that, although it appeared from the data gathered that price competition is what was intended by the Airline Deregulation Act of 1978, there was confusion, for example, in how number of sources affected the definition of competition. Because of the critical nature of this definition in terms of answering the final research question, the researchers, through the survey method, secured this definition from a selected group of government authorities. After a critical evaluation of the respondents' definition of the term, the researchers formed an operational definition of competition which was then used in later stages of this study.

Description of Population and Sample

To avoid a widely diversified group of definitions that would have no critical bearing on this study, the researchers determined that many of the following individuals and agencies of government might be sources of a definition of competition as it applies to the current problem. They include Air Force contracting personnel, congressional leaders, requirement generation agencies such as Major Commands, ALCs, Navy Yards, and other government personnel and private organizations currently engaged in this subject. A judgement sample of selected population members was used due to time and other factors such as importance of source.

The criteria used in this selection process was whose definition would most likely be used as the standard for measurement when the question was asked, "Has competition been achieved in the award process for the military domestic air freight contracts?" Based on this, the researchers identified the MAC contracting officer because he will have to make the determination of fair and reasonable price; the Director of Contracts/Acquisition Policy at Headquarters USAF, due to the direction that this office has given to MAC regarding future acquisition of military air freight; and a GAO representative involved in the surveillance of this legislation, mainly due to this body's

involvement in reporting to Congress if their intent is being achieved.

Survey Plan

The researchers evaluated the advantages and disadvantages of structured versus unstructured questioning techniques as they affected their research problem. Based on this evaluation, they decided that to avoid bias or overly restricting the responses, the open response type question was best suited to the discovery needs of the researchers in their goal of arriving at an operational definition of competition. As a result of not only the previous contacts made during the early exploratory phase, but also direct contacts made in locating qualified sources, the researchers decided not to send copies of the interview guide, but in lieu thereof, to send only a letter which generally defined the area which would be questioned. This letter, signed by the researchers' thesis advisor, additionally explained the survey design, identified that the questions would be asked through use of the telephone, set forth the tentative date of the interview, and requested the interviewees' consent for the interview to be taped. The researchers contacted each respondent one week prior to the date of the interview to confirm that the respondent would be available for the interview. At this time, the researchers answered any general questions that the

respondent had so that he could better prepare for the questions asked during the structured interview. Through the advance letter and telephone contacts, the researchers assured themselves of achieving 100 percent response. Based on this decision to use the versatile personal interviews, the researchers designed the interview guide to be used.

Instrument

In the development of the actual questions to be used in this survey, the researchers first critically examined the original problem that initiated this research study. The problem facing the researchers was to arrive at a contracting method which would ensure maintenance of a flexible and sufficient CRAF, provide efficient peacetime air freight service and permit competitive market forces to determine price (28:1). With this understanding of the management question, they reviewed their stated research objective and evaluated the research question in terms of contribution to the solution of this management question. The researchers then developed the investigative questions which they felt were needed to secure the information required to answer this research question. This same procedure was utilized for the development of investigative questions on all subproblems. The investigative questions for this subproblem, shown below, were designed to fully solicit the opinions relative to competition in light of

the Airline Deregulation Act of 1978 and the other constraints of efficient peacetime air freight service and preservation of the CRAF.

1. What is competition?

2. Does the perception of competition differ between the operating levels within the government?

3. Is competition necessary to secure a more reasonable price?

4. Do competitive market forces imply more sources bidding for the government business?

The information required by the investigative questions was secured through the use of the structured interview guide. The instrument provided in Appendix B is designed for acceptability by the respondent and thus took full advantage of the positive aspects of the structured interview.

Subproblem 2

Research Question

What are the potential domestic military air freight requirements for future contracting to commercial air carriers?

Design of Study

This step of the study was directed to identifying what the requirements will be for both Logair and Quicktrans over the next five-year period. Five years was

selected based on the existing requirements of both the Navy and Air Force as set forth in the Five-Year Defense Plan. In addition to the peacetime domestic military air freight requirements of both Logair and Quicktrans, the researchers identified the requirements of both Stage II and Stage III of the CRAF activation plan. To avoid classifying this study, certain supported assumptions were used to avoid the reporting of specific classified information. Based on this identification of the present and forecasted requirements, the researchers translated these requirements into specific aircraft. To translate into specific aircraft the researchers examined the requirements generated such as maximum tonnage, pallet load, and airfield restrictions. This was then compared to available data on aircraft capability provided by sources such as the CAB, the manufacturers, and MAC as well as economic operating information provided by those same sources. The researchers tentatively identified aircraft capable of satisfying the requirements. Expert opinion from the School of Systems and Logistics as well as AFLC and MAC were then solicited to confirm the validity of this identification. This information was later used to compare with available commercial aircraft to form the basis for the research connected with subproblem 3. To gather data on these requirements, the researchers used both literature review to include classified documents as required, and a structured interview guide.

Description of Population and Sample

The judgement sample used for respondents to answer the second research question include: the Chief, Airlift Branch under the Directorate of Distribution, Headquarters AFLC; the Director, Movement Coordinating Department, Navy Material Transportation Office (NMTO); the Staff Traffic Management Specialist, Headquarters USAF; the Chief, Programs and Analysis Branch, Headquarters AFLC; and the Chief, Assistant for Civil Air Division, Directorate of Plans, Headquarters MAC. The researchers were aware that the basic requirements are generated at the individual bases, Air Logistic Centers (ALC), Navy shipyards and that they are in fact the population who generate the requirements. However, for convenience and because exploratory research indicated that the judgement sample is either responsible for consolidating the requirements of those other activities or evaluating them in the CRAF activation case, it was determined by the researchers that adequate responses could be obtained from this sample and that their responses would reflect the inputs of these other agencies.

Survey Plan

Structured interviews were used to secure the information needed to identify the requirements from this sample. Two separate interviews were constructed based upon the need to determine peacetime requirements and to additionally

evaluate the requirements of Stages II and III of the CRAF activation plan. To do this, our sample was broken into two parts with the first three individuals mentioned in the preceding paragraph providing the peacetime data requirements. The two remaining respondents provided the CRAF activation evaluation data. Because of some specific requirements already available to the researchers within existing contract documents for both Logair and Quicktrans (9:Sec.F; 10:Sec.F), and the solicitation documents (11:D-3, E-1; 12:D-3,E-1) for those areas, closed response questions on a structured questionnaire could have been used to secure information on specific dimensional and weight questions. However, to obtain the maximum information from the sample to aid in evaluating the validity of the requirements, it was decided that open response questions on a structured interview were more appropriate. This decision was based on the criteria that closed response questions would not only limit the responses, but eliminate the researchers' ability to secure additional information from those close to the problem. Again, as with subproblem 1, the selected respondents were sent a letter explaining the general area of questions and how the interview would be conducted (see Appendices C and D). The actual questions were not forwarded in order to avoid getting preformed opinions prior to the actual interview. However, in two cases, this method had to be altered in order for the researchers to secure the

needed responses. In these two cases, the respondents were provided an advance copy of the questions but the end result did not reflect the preformed bias that the researchers were guarding against and, therefore, did not prejudice the results of the interviews for this subproblem. The researchers, through the use of the information obtained by this plan, attempted to highlight any requirements that may be overly restrictive and not necessary in meeting the essential delivery requirements of peacetime air freight service. Additionally, had the information gathered by the researchers reflected a change in present perception on satisfying CRAF requirements, such would have been reported and used in formulation of the contracting method sought by the final research question of this study.

Instrument

The following investigative questions were identified as requiring answers. Certain of the questions were answered not only through the structured interview but also through the review of related reference material.

1. What are the essential Logair/Quicktrans requirements for peacetime air freight services? (Now and forecast through 1985).

2. Do these requirements identified as essential, differ from the requirements used to solicit contractual sources?

3. How do these requirements compare to the real needs of the using activity?

4. What is the basis for establishing the time requirements for delivery associated with the different routes?

5. How are the specific routes established?

6. Based on present routes and forecasted changes, what are the bases for the domestic CRAF?

7. Are the aircraft assigned to the domestic military air freight service also adequate for CRAF?

Based on the responses to the measurement questions developed on the basis of the above investigative questions and information gained through literature search, the researchers had the information necessary to compare both the emergency and peacetime domestic air freight requirements with the capabilities of existing aircraft.

Subproblem 3

Research Question

Who are the eligible suppliers in the domestic military air freight market and what are their motivations for participating or not participating in the market?

Design of Study

In this step of the research process, the researchers identified the specific airlines that now possess the type of aircraft identified in subproblem 2. After this

identification and because of the small number of airlines possessing these aircraft, the researchers determined that a census was appropriate to answer the research question. After this decision, the researchers attempted to determine through a formal written questionnaire the motivations of the airlines as to their desire to compete for domestic military air freight service as well as participate in the CRAF. Again, as in subproblem 2, the researchers were interested in both the emergency and peacetime participation of these firms. This step was critical to the research as it was designed to gather information from industry on what they are looking for in terms of motivating them to participate in the domestic emergency or peacetime air freight service contract. Through the survey the researchers identified a number of the variables which will cause firms to enter into or leave the domestic air freight market as well as attempted to quantify certain elements of cost relevant to the CRAF. This information provided a substantial basis for recommending a contracting method to solve the final subproblem.

Description of Population and Sample

The types of aircraft required for both peacetime domestic service and emergency CRAF were specified in subproblem 2. Airlines capable of providing those aircraft types are the population and were identified through

information available from AFLC, MAC, CAB, and other related sources. The decision to take a census was based on the results indicating that there was only a small number of airlines possessing the aircraft suitable to meet those requirements. The airlines possessing the aircraft as identified in subproblem 2 and are shown in Table 4. In addition to surveying these airlines, the researchers, in order to gain information about attitudes of other segments of the airline industry to Logair/Quick-trans and the CRAF chose to selectively sample other airlines who either possessed a number of cargo aircraft, were formerly under contract, or had the potential for entering the market in the future. These airlines and their rationale for selection are shown in Table 5.

TABLE 4

ELIGIBLE AIRLINES
(Criteria Type Aircraft)

Name	Types of Aircraft
Transamerica Airlines	L100-30/L188C
Hawaiian Airlines	L188C
Zantop International Airlines	L188C
Alaskan Airlines	L100-30

TABLE 5

SURVEYED AIRLINES

Name	Reason for Selection
Transamerica Airlines, Inc.	Currently under contract.
Hawaiian Airlines, Inc.	Currently under contract.
Zantop International Airlines, Inc.	Currently under contract.
Trans World Airlines, Inc.	Experience with international airlift service and respected within the industry.
Eastern Airlines, Inc.	Experience with international airlift service and respected within the industry.
Alaskan Airlines, Inc.	Experienced airline for military air freight service. Possesses aircraft currently used in domestic military air freight market.
Evergreen International Airlines	Currently participating in international contracts and past participant in the domestic military air freight market. Presently has viable aircraft assigned to CRAF.
Midwest Airlines	New potential airline for participation in the domestic military air freight market.

Survey Plan

Based upon aircraft determination and available sources, the respondents were surveyed by formal written questionnaire. In order to avoid possible interviewer bias and because of the sensitivity of dealing with the private sector, it was decided that no personal contact would be made with the respondents. The researchers mailed the questionnaires to the respondents assuring them through the means of a cover letter, that their responses would remain anonymous. A self-addressed, pre-post marked envelope was enclosed for return of the surveys. A follow-up phone call was made to the respondents only to insure that the surveys were received and to personally express the researchers' interest in the timely return of this information. It should be noted that, although the opportunity for anonymity was available, a majority of the firms, including all current participants, did identify themselves by cover letter.

Table 6 provides data as to number of returned surveys. The survey set forth in Appendix E utilized both open and closed questions to obtain the specific answers in terms of the intentions of the company to participate or not participate in the domestic military air freight contracts as well as the reasons and opinions of the companies pertinent to incentives and rewards they felt were necessary, not only to enter the market, but also to participate in the CRAF program.

TABLE 6

AIRLINE SURVEY RESPONSE

	Mailed	Returned	Percent Response
Current Participant	3	3	100
Potential Participant (possessing aircraft type)	1	1	100
Other	4	2	50
TOTAL	8	6	75

Instrument

As stated in the sampling plan, the formal written questionnaire was used to answer the third research question. The investigative questions used to formulate the measurement questions were:

1. Is the airline familiar with the domestic military air freight market?

2. Are airlines willing for a price (and what is that price) to place their aircraft in the CRAF while not securing a domestic military air freight contract?

3. Is there a dollar value attached to participation in CRAF?

4. Are the airlines willing to bid on domestic air freight contracts?

5. Why are some airlines unwilling to bid on domestic military air freight contracts?

6. What will be needed to motivate industry to participate in the emergency and peacetime domestic military air freight market?

Subproblem 4

Research Question

What contracting method will incorporate the findings of subproblems one, two, and three and meet the objectives of securing adequate competition while not degrading the present contribution to the CRAF?

Design of Study

The design of this final study effort is based on the information gathered through the previous subproblems. This information was provided to several contracting and acquisition experts selected by the researchers. With this information the experts were requested to develop a contracting method which they would use in meeting the research objective. The proposed contracting method was to address such areas as incentives, pricing, and type of contract that would ensure maintenance of a flexible and sufficient CRAF, provide efficient peacetime airlift service and permit competitive market forces to determine price. This information plus that previously gathered was then used by the researchers in formulating their approach in response to the management question. No attempts were made at

testing or validating this approach as this is one of the recommendations for follow-on study.

Description of Population and Sample

The population of contracting personnel capable of providing valuable input to this study is quite large. Due to the large volume of information which could be provided from this population and our limited capability to analyze it due to constraints such as time, a judgemental sample of contracting officers identified by the researchers was utilized. To avoid bias, this sample does not include the PCO or the ACO on the current contract but does include qualified contracting officers having at least ten years of contracting experience as well as general knowledge of this problem. By sampling such contracting personnel, the researchers provided an opportunity for the responses to be reflective of opinions that could be relatively objective and lacking personal bias based upon direct experience with contracting for military air freight service.

Survey Plan

Because the possible types of contracting methods are limited and well known to our sample, the majority of the guide consisted of closed response questions designed to isolate a single method. However, to assure that the researchers did not unintentionally eliminate a

respondent's original thoughts, they included some open response questions designed to motivate the respondents to set forth their opinions as to how they would apply a particular method. In similar fashion to other steps in this research effort, a mixed mode of communication was used to again take advantage of the positive aspects of both the personal and impersonal modes. More importantly, this method assures complete responses from the limited sample used.

Instrument

The interview guide and summary of the research objectives and findings relating to the first three research questions were provided to the respondents in advance of the interview. The interview guide as set forth in Appendix F is designed to answer the following investigative questions and thus provide the information necessary to answer the final research question.

1. With the information from the responses of subproblems 1, 2, and 3, how should competitive contracting for domestic military air freight service be accomplished?

2. Is there a need to split the acquisition of CRAF from the contracting for domestic military air freight service?

3. How could contracting for both emergency and peacetime domestic military air freight service be achieved with competition as the method for determining price?

4. What incentive structures could be used to secure greater participation by those qualified sources?

Survey Instrument Pretest

Each survey instrument was administered to selected representatives of groups and organizations such as AFIT faculty and students, AFLC, MAC, and personnel of the Air Force Business Research Management Center, depending on the expertise required for the particular instrument. This convenience sample of experienced personnel known by the researchers is admittedly not a representative sample, but did provide a sufficient response so that the interview guides and the questionnaire, before they were used in the formalized research effort, were clear, meaningful, and sequenced in such a manner as to create an environment of responsiveness (7:208). The sample survey instruments are found for each research question in Appendices B through F.

Summary of Assumptions

The following assumptions were made by the researchers in order to facilitate their study.

1. The requirement for a domestic CRAF is established and must be considered when contracting for domestic military air freight movement.

2. Individuals designated as heads of activities, organizations, and airlines, are knowledgeable and expert in their subject field and representative of the particular group of which they are a member.

Limitation

The major limitation of this research is a problem which exists in many if not most studies which depend upon a historical synthesis of information. Interpretation of the data and information gained as well as conclusions made is tinged by personal opinion and bias. This is not only true of information gained from literature search and survey of respondents, but is additionally found in the conclusions of the researchers themselves. It is hoped that this objective realization by the researchers limits the effects of bias in this study.

CHAPTER III

ANALYSIS OF SUBPROBLEMS

Introduction

This chapter addresses the analysis of each of the subproblems. To assure complete analysis of the data gathered through either the structured interview guide or the formal questionnaire, each of the investigative questions previously identified in Chapter II by subproblem is addressed. The analysis from the first three subproblems is summarized to form the basis for conducting the interview for subproblem four. Based on the summary of the analysis of subproblem four combined with the previous summary of the first three subproblems the researchers lead into the conclusions which, along with the researchers' recommendations, are presented in the final chapter.

Subproblem 1

The interviews with the personnel previously identified by position in Chapter II were conducted using the structured interview contained in Appendix B.

The interview guide was used to gather the specific information required to answer the research question of "What is the government's definition of competition in light of the Airline Deregulation Act of 1978 as it

applies to the domestic military air freight market?" The investigative questions identified in Chapter II are addressed individually as the basis for presenting the analysis of the data gathered on subproblem 1.

Questions and Analyses

Question 1. What is competition?

Analysis. Based on the responses, the researchers found that the principal contracting officer (PCO) at HQ MAC and the staff officer at HQ USAF expanded on the Defense Acquisition Regulation (DAR) definition by explaining basic peculiarities associated with participation in CRAF and the domestic military air freight market. However, all respondents were in agreement that the basic definition for competition is in accordance with the DAR as summarized below:

-- Two or more independent offerors

-- Sources are qualified to perform in accordance with the specifications

-- Written proposals are submitted based on a solicitation that adequately defines or describes what is required

Question 2. Does the perception of competition differ between the operating levels within the government?

Analysis. In analyzing the responses from the different operating levels, it was found that there was no real difference in the perception of competition. However,

both HQ USAF and HQ MAC stated that the present method of awarding contracts based on participation in the CRAF could be considered as a form of competition and therefore should be considered as such. Based on the peculiarities of the domestic military air freight market, the airlines' actual contribution to CRAF does force airlines to compete by contributing more to CRAF thus affording themselves a larger percentage of the award. The peculiarities include limited aircraft available to meet the Logair/Quicktrans requirements, the routes that must be flown, and the special certifications that must be obtained for flying domestic military air freight.

Question 3. Is competition necessary to secure a more reasonable price?

Analysis. Based on analysis of the responses, the researchers found that competition, using the basic DAR definition, is considered to be a vital element in effective pricing. The present contracts (F11626-80-C-0006 and 0007) for Logair/Quicktrans and the procedures leading up to contract award were cited by the respondents as examples of how the government has been able to secure reasonable prices using the CRAF participation as a "form of competition." Though there is only one company presently qualified to provide the L-100 aircraft required by these contracts,

it appears in the opinion of the respondents that this form of competition is adequate to secure fair and reasonable prices.

Question 4. Do competitive market forces imply more sources bidding for the government business?

Analysis. Competitive market forces were found not necessarily to imply more sources competing for award. The respondents did, however, state that restrictive specifications can result in unnecessarily eliminating otherwise acceptable sources which may have the potential to meet the basic requirements identified by the user. The researchers next evaluated the requirements for the domestic military air freight market and associated CRAF.

Subproblem 2

The interviews to answer the research question of "What are the potential domestic military air freight requirements for future contracting to commercial air carriers?" were conducted with the individuals previously identified by position in the description of the population for this subproblem. Because the researchers chose to not only identify the peacetime requirements, but in addition, to evaluate CRAF activation requirements, two separate interview guides were constructed and the sample broken down by their particular expertise to respond to the appropriate

interview. The two interview guides are contained in Appendices C and D.

In order to conduct the analysis to answer our basic research question, the investigative questions are addressed individually. Questions 1 through 5 relate to peacetime requirements while 6 and 7 refer to the emergency CRAF activation requirements.

Questions and Analyses

Question 1. What are the essential Logair/Quick-trans requirements for peacetime air freight services? (Now and forecast through 1985.)

Analysis. Among all parties interviewed, the consensus view was that, for the time frame addressed in the interview (through 1985), the requirements projected to exist will not change significantly from that reflected in the FY80 contracts. The researchers attempted to interject certain considerations such as a new handling system on the aircraft or a new weapons system such as the MX. Even when faced with these questions, the respondents continued to predict no major change. Of all things that might possibly contribute to a change, the MX was the only area on which there was some question; however, as one of those interviewed pointed out, requirements would probably only make themselves known somewhere toward the latter part of the five-year time frame.

An interesting side issue to this question came out when the interviewers were attempting to ascertain whether current shipments or requirements were excessive. In reviewing priorities of what was being moved, several of the interviewees volunteered the view that even though requirements would not substantially increase, they could not be decreased without substantial degradation to the military transportation system, and Logair/Quicktrans in particular. A view expressed was that if contractors were to perceive a future of diminishing revenues, they might actively seek out other business and leave the marketplace.

An assessment of all information involved led the researchers to state for purposes of this study that future requirements in the respondents' view will not be dramatically changed from those being met today; and there appears to be little chance of any substantial reduction on the part of the Air Force in requirements.

Question 2. Do these requirements (the requirements of the users) identified as essential, differ from the requirements used to solicit contractual sources?

Analysis. In analyzing this question, the researchers utilized not only the responses of the sample but additionally compared the responses to the Request for Proposal and the actual contract. In addition to the responses of the MAC contracting officer and NMTO Movement Coordinating

Department Director, questions were asked of the AFLC Airlift Requirements Chief, to ascertain the extent of the requirements validation. Those responses were of particular interest for two reasons. First, it is between their agencies that any requirements translation problems would most likely occur. Additionally, it is at these levels where challenges to individual base requirements will be most effective.

In the course of the interviews and examination of several source documents, it was found that, with only minor exceptions, the requirements generated at base level were valid and not excessive to meet mission needs. These requirements were accurately duplicated in the actual Requests for Proposals and the contract as awarded.

Question 3. How do these requirements (the requirements generated at base level) compare to the real needs of the using activity?

Analysis. In assessing this question, the researchers were concerned with whether AFLC, NMTO, and MAC challenged the users' forecasted rates, and any special requirements such as size or number of loading doors, which may have been generated.

It was determined that AFLC frequently challenges the requirement demands of the users. Specifically at AFLC headquarters a number of reports are kept which periodically

update usage. These reports provide both AFLC and MAC with specific information as to which bases and commands can more accurately forecast their requirements. Those who do not forecast well will receive more attention and more challenges to their requests than those who traditionally forecast with a high degree of accuracy. One document shown to the researchers by the AFLC Distribution Branch was a matrix called a cargo shipment table. The table portrays tonnages forecasted and actually moved from point to point. It clearly demonstrated why challenging was a necessary feature. Accuracy of predicted-to-actual relationships showed extreme variances with a number of bases over- or under-estimating their requirements by 50 percent or more. There are many reasons for this condition, and they are not necessarily the fault of the bases involved. It appeared that AFLC and MAC were well aware of this variance and challenged requirements when they felt predictions were subject to question.

It is noteworthy to point out that the MAC contract as currently written provides adequate flexibility to adjust to changing or modified requirements and to insure that these changes in demand can be handled through the existing contractual arrangement for both Logair and Quicktrans.

In addition to tonnage requirements, various handling specifications which relate to the type of aircraft being utilized such as number of loading doors and truck bed

height access, were reviewed and found to be consistent with what was being moved by Logair. The Navy Quicktrans requirement for truck bed height loading was questioned but was found to be appropriate due to the size of certain items that need to be handled and the handling equipment presently available.

Question 4. What is the basis for establishing the time requirements for delivery associated with the different routes?

Analysis. All respondents indicated that the time requirements for movement by Logair/Quicktrans are established under Military Standard Transportation and Movement Procedures (MILSTAMP) specified in DOD Regulation 4500.32R and more specifically the Uniform Material Movement and Issue Priority System (UMMIPS) as specified in DOD Directive 4410.6. No items may be moved on Logair/Quicktrans unless it is under MILSTAMP documentation, and MILSTAMP documentation requires a UMMIPS priority. It is these UMMIPS priorities which have specified delivery time frames which decide whether an item is a Logair/Quicktrans candidate (8). The AFLC respondent provided data to the researchers which indicated that items moved by Logair did in fact contain the proper priority designations. The usage by priority information provided was, to the researchers' knowledge, consistent with the types and priority of

items which are tasked to be moved on Logair. Specifically it was found that approximately 14 percent of the cargo to be flown by Logair originating at an ALC and delivered to its destination was rated at a 999 priority while approximately 42 percent was Transportation Priority (TP) 1, 40 percent TP 2 and 4 percent TP 3. A review of written documentation was not conducted on Quicktrans; however, in discussion with the selected respondent for Quicktrans, the researchers found that the results were similar in meeting the UMMIPS priority.

Question 5. How are the specific routes established?

Analysis. Through the response gained from the interview with the chief of the Airlift Branch, HQ AFLC, the researchers found that the establishment of the routes was based on such objectives and requirements as: (1) no more than one transfer of cargo, (2) service mission bases once daily from one ALC, (3) minimize service to bases less than 100 miles contiguous distance, (4) serve mission bases with minimum of 150 tons cargo requirements, (5) the payload requirements to be shipped to and from the mission bases, (6) the ground equipment available at the bases, (7) the goal of maintaining combat readiness of first line weapon systems, and (8) the availability of the type of

aircraft that can meet the 463L ground equipment capability and payload requirements.

The combination of these objectives and requirements serves as the basis for the present route structure. The route structure, as reflected in Appendix G meets these criteria and maintains the desired flexibility. Although the route structure in Appendix G reflects only the Logair routes, it does interface with the Quicktrans terminal points set forth in the present contracts and thus provides a total Logair/Quicktrans system supportive of the domestic movement requirements of Army, Navy, Air Force, Defense Logistics Agency, Reserve Units and Air National Guard.

Question 6. Based on present routes and forecasted changes, what are the bases for the domestic CRAF?

Analysis. The appropriate respondents in AFLC and HQ MAC indicated that the actual validation of the domestic CRAF and testing of its ability to meet emergency requirements has been done through regression analysis of ALC workload. This statistical method is used in determining a factor that is applied to the current number of regularly operating aircraft to establish the number of aircraft required for the domestic CRAF. This factor and much of the methodology in obtaining it are classified and to the best of the AFLC respondent's knowledge, the factor has not been provided to MAC to assist them in the contracting

process. It appears to the researchers that the factor is multiplied against the aircraft currently doing the workload and if the result is exceeded by the number of aircraft in the domestic CRAF, it is assumed that this segment is adequate. Analysis of this area indicates that the validation process is actually after-the-fact and does not guide the contracting process.

Question 7. Are the aircraft assigned to the domestic military air freight service also adequate for the domestic CRAF?

Analysis. The consensus of all respondents was that the current aircraft in the domestic CRAF will more than adequately meet any foreseeable emergency requirements. As an example where other aircraft have been used, they cited Project Nickel Grass (a 1973 DOD project in conjunction with the Yom Kippur War) in which other aircraft such as the 747 were utilized on the Logair routes. These aircraft, however, were only used on those routes which linked Aerial Ports of Entry (APOE) and were added for economic efficiency due to increased tonnage rather than for effectiveness. It was suggested by one of the respondents that the domestic CRAF could have done the job as effectively.

In order to address subproblem 3, the researchers were required to use the information gathered in

subproblem 2 to identify types of aircraft which are capable of satisfying the requirements of the next five years. Airlines possessing these aircraft would then become the population to be sampled of eligible suppliers of services.

To accomplish this, the researchers examined the contracting procedures used by MAC in soliciting sources. This review resulted in the discovery that the Request for Proposal (RFP) is widely distributed to most of the major airlines, small and independent carriers, and anyone else who expresses a desire to receive a copy of the solicitation. The solicitation is distributed to any airline regardless of the type of aircraft they possess, whether they are currently under contract, whether they are domestic or international, and whether certified or not. The marketplace, through the proposals returned in response to the RFP, establishes the types of aircraft which can meet the required specifications set forth in the RFP and that will allow performance of the contract at the lowest reasonable cost to the Department of Defense. For the past several years in which this process has been accomplished, consistently the L100-30 and L188 aircraft have been proposed. Only the DC-9-30 was found to be competitive with the L188, and no aircraft could meet those established requirements met by the L100-30. Based on these results, the researchers conclude that the most economical aircraft that can service the requirements as currently stated are

the L100-30 and L188 type aircraft and this outcome is substantiated by the response of the marketplace.

The researchers in this analysis have not inferred other aircraft were not capable of servicing the Logair/ Quicktrans contract, but are only reporting that from the information gathered, the aircraft presently used were the most economical based on existing requirements. This is an important distinction because if certain variables such as tonnage hauled or the route structure were to be changed, so in all likelihood might the type of aircraft. This could result in other aircraft such as the B-747 and B-727 cargo aircraft becoming more economical and viable for the established military domestic air freight market.

Subproblem 3

To answer the research question of "Who are the eligible suppliers in the domestic military air freight market and what are their motivations for participating or not participating in the market?" the researchers analyzed questionnaires returned by their sample. Differences in response between the two groups of respondents (current participants and all others) are noted in the analysis of each of the specific investigative questions. The questionnaire is contained in Appendix E.

Questions and Analyses

Question 1. Is the airline familiar with the domestic military air freight market?

Analysis. With the exception of one airline, all respondents indicated that they were familiar with the domestic military air freight market either as current participants or as recipients of annual Requests for Proposal. The one exception indicated some familiarity with the subject area. Further analysis of this response reflected that this airline was newly established and had not been in either the passenger or air freight market until recently.

Question 2. Are airlines willing for a price (and what is that price) to place their aircraft in the CRAF while not securing a domestic military air freight contract?

Analysis. This particular question elicited dramatically different reactions depending on the respondent. Two firms currently participating in the domestic air freight market and CRAF emphatically stated that they would not participate in a program where providing aircraft to the CRAF did not secure them a peacetime air freight contract. They also stated that such a contract would not be in the best economic interest of the government.

The one participant who did not take this position indicated that monetary incentives would be necessary to induce their participation and, in addition, they would require "war-risk indemnification." The airline provided an estimated price for this CRAF participation of between fifty and one hundred thousand dollars per L188 aircraft per year. In addition, one hundred fifty thousand dollars would be required for each flight crew required solely to meet surge requirements with less than sixty days lead time. For this consideration, the firm would be willing to offer its entire cargo fleet to the CRAF.

Those currently outside the program provided mixed responses with only one airline providing a figure estimating the cost of such participation. The cost figure was furnished by the same firm which was only somewhat familiar with the domestic military air freight market. While there were those who would appear to be willing to provide aircraft to the CRAF separately, perhaps this quote from one of the respondents best summarizes the majority opinion expressed by both participants and non-participants.

> I believe that [firm's name] interest in CRAF participation must be tied to a single negotiated contract providing primary air freight service. Competitive bidding for such services with a separate procurement for CRAF would seem to be a more expensive proposition for the government in the long run.

Question 3. Is there a dollar value attached to participation in CRAF?

Analysis. Current participants agreed that there were costs associated with being a member of the CRAF. One member called them minimal, and another called them potential, but not currently affecting the airline. The third current participant, however, felt there were definite costs involved and stated: "Speaking strictly to the aircraft involved in domestic CRAF, the figure would be in the range of $30,000." (This would be per aircraft per year.)

All current participants seemed to agree that the principal participation costs fit in two categories: equipment and systems modification, and storage of systems.

Nonparticipants' responses were once again divided, with those who were knowledgeable of the market indicating that CRAF participation did involve costs to the airlines. Their estimates were substantially lower than those of the participants. Those firms with less knowledge of the market were inclined to state that there were no additional costs associated with being a member of the CRAF.

Question 4. Are the airlines willing to bid on domestic air freight contracts?

Analysis. The responses from current participants in this area were split with two airlines indicating

satisfaction with current contracting methods and one expressing discontent with both the contracting method and pricing of domestic air freight contracts. Those satisfied felt it was a time-proven method which has, to quote one respondent, "survived both domestic and international contract negotiations with many carriers on the one hand and presumably a satisfied government customer on the other."

Even with the favorable response from the majority, there were several areas in which they felt improvements on present methods could be made. Criticisms were leveled at the areas of current contracting and pricing methods. Though there was no general consensus on the issues, two areas did provide a consistent thread of concern.

The first area was the redundancy of paperwork the contractors have experienced. Specific examples cited were in the fuels area with the Quicktrans contract being the best documented example. One contractor called the multiple documentation redundancy (his own words) "clerically staggering." Though they consider this paperwork a problem, the contractors made every effort to point out that they were not upset over current fuel pricing procedures.

A much more clearly identified concern was that of protection from these inflationary times and a requirement for a more timely mechanism for recovery of inflationary costs. This same concern was expressed by nonparticipants; however, none of the respondents provided specific examples

and there was little indication of dissatisfaction. As previously mentioned, the fuels pricing procedure when the government does not provide the fuel reimburses the contractor for the fuel cost incurred above the DOD-established rate.

Other general areas mentioned by the airlines were individual in nature. Several are listed below without comment or analysis to provide insight into airline concerns:

1. Return on investment must be compensatory to and time correlated with current costs of money.

2. Interest expense should be included as allowable costs of performing airlift.

3. The provision for allowability of taxes must include taxes in addition to federal if such taxes are incurred in performance of airlift.

One current participant was not satisfied with either the current method of contracting or the pricing of air freight contracts. Two extracts of the airline's responses are presented below which capture the essence of the complaint.

> [1]. Requirement for large number of 2 doors, 34000-pound aircraft is anacronistic and counter-productive to CRAF modernization, limiting eligibility to a small number of 21-year old L-188 aircraft with rapidly escalating maintenance costs. More generalized specifications of aircraft types would stimulate greater competition for government business.

2. "Pricing system is unresponsive to carrier cost differences on low aircraft utilization versus high aircraft utilization routes."

The respondent goes on to make suggestions to resolve some of this conflict. One suggestion is pricing by route or regional route "package;" however, it is clearly pointed out that the airline still desires the fuel cost escalation protection.

Nonparticipants expressed general satisfaction with the current method of contracting or contract bidding. The reasons given for their nonparticipation are covered in the next question.

Question 5. Why are some airlines unwilling to bid on domestic military air freight contracts?

Analysis. The "bottom line" on this question is that it is not economically feasible for them to do so. General responses were of the nature:

1. No excess aircraft available.

2. No participation due to types of aircraft required are fully utilized today in commercial market.

3. Carrier does not operate all-cargo aircraft.

The analysis of the responses demonstrated to the researchers that, were it profitable to operate in this market with present equipment, the airlines would not be adverse to bidding on Logair/Quicktrans contracts.

However, the profit would have to be competitive with that attainable in the private sector to obtain those assets which are already fully utilized. There was no indication that any airline would purchase additional assets strictly to serve the domestic military air freight market. Certain airlines did admit to expansion plans over the next five years and indicated that they might be interested in future Logair/Quicktrans contracts.

Question 6. What will be needed to motivate industry to participate in the emergency and peacetime domestic military air freight market?

Analysis. Industry does not generally express a desire to contract separately for provision of the CRAF, though some firms are willing to do so for a price. Those capable at this time of providing CRAF assets generally see no economic advantage to doing so on a separate contract basis. Industry, in a majority of cases, believes that the tie between military contract award and filling CRAF requirements is essential.

For peacetime service the government must compete with all other customers for the resources available in the marketplace. Should new more profitable markets for aircraft currently become available, the government, to secure required aircraft resources, must be prepared to either pay more or look for other aircraft types. One of the

respondents indicated that a more generalized specification of aircraft type would stimulate greater competition for the peacetime domestic air freight market. At the same time, should the commercial market suddenly develop aircraft excess to its need and responsive to the specifications, indications were that the airlines would not be adverse to bidding on government contracts. The economics of the marketplace seem to be the driving force behind motivating participation in the domestic military air freight market.

Summary of Subproblems 1 through 3

The following paragraphs summarize the analysis of responses to the first three subproblems.

Principal government agencies surveyed indicated that the definition of competition as provided by the DAR would be applicable to the market in question. The current method of providing aircraft to the CRAF as a means of proportionally awarding the domestic military air freight contract is one means of meeting the requirements for competition.

Requirements in terms of tonnage hauled, locations, and aircraft configuration will not change over the next five years. They are included as a portion of Appendix F. These requirements were analyzed and judged to be not overly restrictive. Currently the market has provided two aircraft

which most economically meet these requirements, the L188C and the L100-30. These aircraft will continue to be available over the next five years.

Though many firms are eligible, the economics of aircraft operation currently limit participation in the domestic military air freight market to firms operating the type aircraft noted in the preceding paragraph. Firms having these aircraft in sufficient quantity and additionally meeting the CAB certification requirement and MAC demand of at least 60 percent business in the commercial market, are the current three contractors, Transamerica Airlines, Inc.; Zantop International Airlines, Inc.; and Hawaiian Airlines, Inc. Additionally, one other airline, Alaskan Airlines, Inc., was judged to have adequate L100-30 aircraft to bid if they desired and would satisfy the other requirements.

General consensus is that current contracting methods are fair and meet both contractor needs and those of the government. There are those who do not agree with the consensus and feel that current contract requirements as specified in the Request for Proposal are overly restrictive and are not necessary (specifically, the two-door requirement). All respondents felt that the fuel price escalation protection provided under the current contract must be maintained.

A majority do not favor separating CRAF requirements from the current contracting for peacetime domestic military air freight service. One current operator is willing to do so and provide 100 percent of his fleet; however, the estimated price cited for this service was between $50,000 and $100,000 per L188C per year and $150,000 for any aircrew required without sixty days lead time.

The need for the profit incentive was evidenced by all respondents both currently providing the service and other airlines who admit they could consider entering the market if stronger monetary incentives were present.

The summary of analysis from the data gathered on the first three subproblems was used by the researchers in surveying experienced contracting officers to seek answers to the final subproblem. This subproblem states the research question of "What contracting method will incorporate the findings of subproblems one, two, and three and meet the objectives of securing adequate competition while not degrading the present contribution to the CRAF?" and is also analyzed using the investigative questions as the bases. The interview guide is contained in Appendix F.

Subproblem 4

Questions and Analyses

Question 1. With the information from the responses of subproblems 1, 2, and 3, how should competitive contracting for domestic military air freight service be accomplished?

Analysis. The responses from the contracting officers were mixed between formal advertising and negotiation; however, the majority preferred formal advertising. The arguments in favor of formal advertising were based on the opinion that the requirements of the government could be clearly, completely, and accurately stated and that these were not anticipated to change over the next five years. The respondents argued that the marketplace should be able to provide competitive prices without the present built-in protection afforded the contractors when the government sets rates. Additionally, in spite of the specifications the majority of the requirements could be met by at least two responsible bidders. It was also felt that by use of formal advertising any bias or perceived bias that only current participants are eligible for award would be eliminated.

A fixed price contract with an escalation clause tied to fuel costs was believed to be the most appropriate type of contract by a majority of the respondents. One

respondent did recommend a cost type contract, were peacetime and CRAF requirements to be separated, for the emergency requirements but agreed that the domestic peacetime requirement for military air freight service should be contracted with a fixed price type contract. The fixed price type of contract could be used whether advertised or negotiated; however, those preferring negotiation expressed a need to discuss the requirements with the very limited number of sources prior to award of any contract.

None of the respondents favored multi-year contracts due to the risk and increased contingencies that contractors would need to include in their proposals. It was pointed out, however, that contractors in other aerospace-related industries are accepting firm fixed price contracts for a three-year duration with no economic price adjustment clause. Additionally, although not recommending for use, one respondent suggested that multi-year contracts had the potential to entice investment by other firms currently outside the existing market and thus eliminate the present minimum competitive base. Multi-year contracting would mean the government might incur a very substantial cancellation cost if services were terminated, but this situation does not at present appear to be a likely circumstance.

Question 2. Is there a need to split the acquisition of CRAF from the contracting for domestic military air freight service?

Analysis. Only one respondent felt that the splitting of requirements would be advantageous. This respondent felt that the CRAF needs could be secured through the use of a Cost Plus Incentive Fee (CPIF) type contract and that the combination of a fixed price type for the peacetime service and a cost type for the emergency service would be less expensive and just as reliable as the present method now used to secure both Logair/Quicktrans and domestic CRAF. His opinion was that the costs involved under a cost type contract for the CRAF would be minimal and fall drastically after the first year as the basic requirements would not change and thus cost would only relate to additional administrative effort. Continuing, he pointed out that the first year would not be expected to create high costs based on his belief that most airlines that would participate would make investments or have made investments prior to any initiation of IFB or contract award. In most of the responses, it was clear that there was no basis to even consider the use of cost type contracts. Whether evaluating peacetime or emergency, there was no high risk factor and plenty of history was available to both parties.

Those respondents who felt there was a need to secure both requirements under the same contract expressed some interesting thoughts relative to using the marketplace to provide competition while at the same time providing incentives for CRAF participation. Their suggestions provided input to the next investigative question.

Question 3. How could contracting for both emergency and peacetime domestic military air freight service be achieved with competition as the method for determining price?

Analysis. The proposals for including both emergency and peacetime effort under one contract ranged from a system of allocation with preference given to the low bidder, to a method providing a bonus structure for participation in the CRAF with award based strictly on lowest price. An imaginative solution was proposed by one of the respondents on the problem of maintaining the CRAF while still contracting for the domestic service through the formal advertising procedure. This respondent suggested a formula that would be included as a separate line item in the Invitation for Bid (IFB). This line item would invite the bidders to bid on the needed CRAF as an incentive in the form of an insurance policy. The unit price for this line item, which would be a factor in the determination of overall low bid, would be divided by 360 to determine daily

price for each aircraft committed to the CRAF. As the committed aircraft were used for other purposes the price for this item would be reduced by the daily rate (5). In other words, for each day that the committed aircraft were in use the government would pay nothing, but for those days that the aircraft was idle the government would pay the daily rate in return for the availability of that aircraft should it be required for CRAF. The competitive marketplace would again be used to provide reasonableness for the rates established; however, they would cover only those allowable costs as determined by MAC.

The potential advantages of this proposed method included: (1) allowing competition to set the prices, (2) providing adequate protection to the bidders so that they would commit resources to CRAF, (3) identifying the cost of CRAF, (4) avoiding unnecessary expenditure for the CRAF commitment, and (5) avoiding the present rate setting method which does not provide true competition.

Question 4. What incentive structures could be used to secure greater participation by those qualified sources?

Analysis. All respondents, whether favoring the acquiring of service through the procedures of formal advertising or negotiation, agreed that there is a need for a special economic escalation clause for fuel. Other

types of incentives besides those provided in response to the previous question were determined to be nonessential or of minimal benefit in securing these services. For example, to put an incentive on schedule would reward a contractor to get to the next delivery point faster. Because of government requirements, early delivery may create delays or even loss of service if the government did not have shipments ready for the contractor to transport. This may also conflict with other areas such as energy policy. Increased speed will in all likelihood increase fuel consumption, all other factors being equal.

In discussing incentives on cost, the respondents stressed that the most likely means to reduce cost were by lowering profit or cutting corners on maintenance or crew ratio, neither of which would benefit the company or the government. Although one response did recommend an incentive tied to performance, the majority of the respondents did not feel it was required because the performance parameters specified were being met without additional motivation. By including performance incentives, the government might expose itself to arguments relative to which party caused a delay and be inviting claims under the disputes clause.

Summary of Subproblem 4

A majority of contracting officers surveyed felt that it was within the capabilities of MAC and the contractors to establish domestic military air freight service using formal advertising as a contracting method with the contract being fixed price and containing an escalation clause for fuel price increases. These contracts would be let on an annual basis.

General consensus was that there would be little advantage in separating the acquisition of domestic military air freight service and CRAF assets into two contracts.

Incentives other than the escalation clause for fuel were generally not recommended; however, one respondent did propose an incentive formula for providing aircraft to the CRAF which would only be paid when the contractor's committed assets were not being utilized.

This subproblem provided the recommendations of experienced contracting personnel on how to best provide for both a flexible and sufficient CRAF and peacetime domestic military air freight service. In the next chapter the researchers use this information, the analysis of the first three subproblems, and other supplemental data, to arrive at their recommendations relative to the basic research objective.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Introduction

In their quest to answer the management question of "Is there a contracting method that will maintain a flexible and sufficient CRAF, provide efficient peacetime domestic military air freight service, and permit competitive market forces to determine the price?" the researchers have relied upon a number of sources of data. In Chapter III surveys of various experts in the fields of government contracting, transportation, commercial airlines, and emergency requirements were analyzed. Additionally, the continuous literature search which began with the initial definition of their problem and has continued throughout the research process was another valuable source. As much as possible, the researchers have sought to report this information without drawing their own conclusions. In this chapter, the researchers' conclusions are stated for each of the basic research questions which have been identified as requiring answers in order to address the management question.

Following the conclusions, the researchers set forth their recommendation for answering the management

question in the form of a recommended contracting method which they feel will satisfy the government and contractors' needs. The chapter concludes with recommendations for additional research or study which may provide further insights into the general research area.

Conclusions

The following conclusions are those of the researchers and are set forth in specific response to each of the research questions.

Research Question 1

What is the government's definition of competition in light of the Airline Deregulation Act of 1978 as it applies to the domestic military air freight market?

The definition of competition used by those government agencies principally affected by the Deregulation Act of 1978 is the one currently established in DAR 3-807.7. Within DOD, and more specifically the Department of the Air Force, the method used to satisfy the competition requirement is through the awarding of contracts based upon their commitment to the CRAF. The recent study by Mr. John Wilson Perry supports this interpretation as well as the specific tie to the use of CRAF as a form of competition (18).

Research Question 2

What are the potential domestic military air freight requirements for future contracting to commercial air carriers?

The requirements for future domestic military air freight service by commercial carriers will remain basically stable over the next five years. There will be little or no appreciable increase or decrease in total workload or cargo configuration.

Present requirements are valid in light of MILSTAMP guidance but are considered somewhat restrictive as to type of aircraft which can be used due to physical requirements as set forth in the Request for Proposal.

Requirements for CRAF are classified and are not directly specified to either the contracting officer or the contractors. It is not known by either party at the time of contracting whether the CRAF requirements have been met; however, based upon the interviews with those who determine CRAF requirements, it appears that the methods which are still used today have satisfied the requirement for the CRAF.

Research Question 3

Who are the eligible suppliers in the domestic military air freight market, and what are their motivations for participating or not participating in the market?

The eligible suppliers of the market are those airlines who own the specific aircraft which can operate under current constraints such as route structure, certifications, payloads, Request for Proposal specifications, government pricing procedures, and high fuel costs. Air craft which appear to be able to operate most economically within these constraints are the L100-30 and the L188C. Based on this research study, the airlines owning this type of aircraft and who in addition can meet the 60/40 percent of business requirement are Transamerica Airlines, Zantop Airlines, Hawaiian Airlines, and Alaskan Airlines. The first three airlines noted in the previous sentence currently participate in the market.

The principal motivation of all firms participating or not participating in the domestic military air freight market is profit. If with current assets, higher profits can be obtained in the commercial sector, those assets will move to that sector. The reverse will occur if the airlines believe they can get a better return on their investment by performing government contracts.

The airlines do not generally object to current contracting procedures or specifications. However, specifications which reduce the number of eligible types aircraft and accounting procedures which do not recognize certain cost the airlines are incurring may be prohibiting entry

of newer and more modern aircraft into the domestic market and the CRAF fleet.

Though most airlines stated that they saw no advantage to contracting for peacetime service and CRAF requirements separately, there is little doubt that, were appropriate monetary incentives provided, this separation could be accomplished.

Research Question 4

What contracting method will incorporate the findings of research questions one, two, and three and meet the objectives of securing adequate competition while not degrading the present contribution to the CRAF?

The contracting method that satisfies the objectives and is in consonance with the data gathered from the first three subproblems was derived from the responses of the contracting officers. The conclusion is a contract secured through the use of formal advertising. This contract should be a fixed price type contract containing an escalation clause for fuel price increases. The contract would be used to secure both domestic military air freight service and CRAF assets. Incentives other than the fuel escalation clause are not generally desirable; however, consideration should be given to the formula suggested by one contracting officer to include as a separate line item an incentive for CRAF participation tied to unutilized capacity.

Recommendations

It would follow from the above that the researchers would recommend that the procedure using formal advertising be followed in awarding a fixed price contract with an escalation clause for fuel when seeking a domestic military air freight contract. After further evaluation of all the data gathered, however, the researchers concluded that this approach was not feasible. The following reasoning supports this view:

1. Requirements cannot be clearly, completely, and accurately stated. It is true that the basic specifications which are used in determining the types of aircraft are firm and the routes requiring service are well established, but because of uncertainty of daily requirements, the contracts must include clauses for expansion of both peacetime and airlift emergencies as well as CRAF activation. In reality, the makeup of the routes is not completely known in advance. The timetable of flight operations is made up daily, and therefore is not available in advance. Additionally, under current procedures, the CRAF requirements cannot be accurately specified in advance, even for Stage II.

2. The marketplace is not sufficiently responsive to rely on it alone to provide fair and reasonable prices. Unless the specifications are changed and there is an increase in the number of responses to the solicitations,

the marketplace does not provide sufficient bidders to allow true competition to determine final price. At present, there is only one responsible source for the L-100-30 aircraft and only two additional firms bidding on the routes designated for the L-188C aircraft (considering split of one- and two-door). The researchers feel that the firms possessing the required aircraft would be substantially immune to the stimulus of competition in proposing price under formal advertising.

3. Formal advertising is not an effective tool to eliminate the perceptions that some airlines may have regarding the difficulty of entering the market, since it allows no discussion relative to the requirements. Profit levels and restrictive specifications were found to be reasons why other airlines are not entering the domestic military air freight market. No evidence was gathered from the research to indicate that potential or past participants felt that the contracting method prejudiced their opportunity for award. The requirements as to exact type of aircraft is of concern, but the negotiation procedure used under 10 USC 2304(a)(16) is not.

4. Formal advertising may produce lower prices for preferred routes, but the offsetting increases for the undesirable routes will probably not produce any net savings for the aggregate route network. The main concern in this regard is not so much the higher price bid on the less

desirable routes, but the possibility of obtaining no bid on certain routes. This is not to say that such provisions, as suggested by the respondents during the interviews, of tying award to the allocation of such routes would not be effective, but it is felt that such a procedure would be less effective and would force the bidders to add additional contingencies to their bids. Thus, this countering tactic would raise the otherwise lower price that could be expected if no such restriction were placed on the award.

Based on the reasons set forth above as well as the conclusions drawn from the data collected the researchers recommend that:

1. Negotiation under the authority of 10 USC 2304 (a)(16) be continued as the contracting method based on the need to divide current requirements among several contractors in order to insure that their assets are available in the event of a national emergency.

2. A fixed price type of contract should be used. This contract should include an escalation clause for fuel or a method such as the one presently used in which the government provides the fuel or reimburses the carrier for actual fuel costs incurred above a DOD-established rate.

3. The pricing method similar to that now used be continued with MAC setting the rate using the rules and procedures previously established by the CAB under part 288 of its economic regulations. This rate setting

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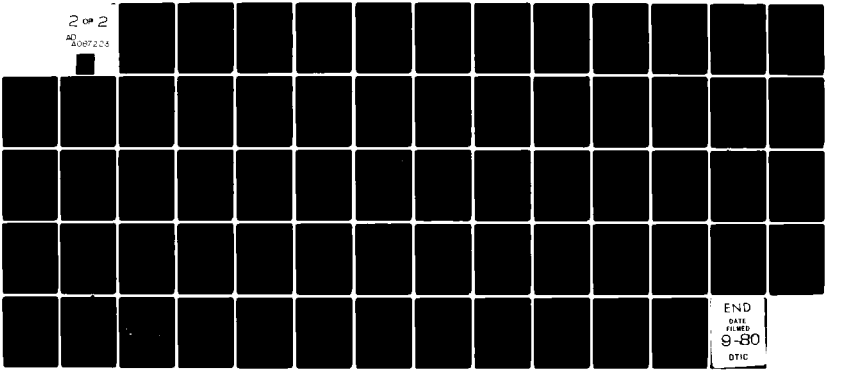


authority should be exercised with extreme caution to avoid the bias MAC may have as an interested party to the contract. The allocation of awards continues to be tied to CRAF participation but greater flexibility should be emphasized in order to include types of aircraft other than the L-100-30 and L-188C presently providing the domestic service. Additionally, if there is a need to modernize the fleet, a more definitive statement of CRAF requirements should be made available in order that MAC can better establish Mobilization Value (MV) points and incentivize modernization of the aircraft. The contract period should remain at one year thus providing carriers with continued business through periods of "slack" and eliminate the need to add additional contingencies because of the inflationary economy.

Recommendations for Follow-on Study

The researchers' recommendation of a contracting method is based on the data gathered and analyzed within the confines of this study. However, it is evident from the varied responses, as well as the continuing studies being accomplished in this area, that there may be a better method to contract for military air freight services and specifically domestic military air freight service while maintaining a flexible and sufficient CRAF. As such, the following list represents areas in which further research

may provide insights in order to increase the number of responsible sources. With increased capability, the marketplace may then be able to set competitive prices which will be considered fair and reasonable, not only in terms of an effective peacetime military air freight service, but also in terms of providing the CRAF necessary in case of national emergency.

1. What are the real costs associated with CRAF, and can such services be secured by other means independent of a contract for domestic military air freight service?

2. What pricing incentives should be used to enhance the amount of business awarded to the low bidder without jeopardizing CRAF participation?

3. Is the 60 percent commercial business requirement beneficial to the national defense, or is it an unnecessary restriction affecting overall costs and limiting competition?

4. How much longer can existing aircraft feasibly serve the market? What aircraft in the future might be needed?

5. How realistic are the CRAF requirements and should the CRAF be periodically exercised?

6. Can the Logair/Quicktrans requirements be satisfied with inhouse capability and only supplemented by existing cargo hauling companies. What effect would this have on CRAF?

7. What test procedure should be used to validate the recommendation of this research study?

8. What inducements can be provided to modernize the aircraft while meeting the constraints set by the 463L cargo handling system?

The researchers have recommended a solution to the management question but in so doing have identified further areas of study which, when addressed, will add further insight into the overall area of military air freight service and the Civil Reserve Air Fleet.

APPENDICES

APPENDIX A

COMPUTATION OF FACTORS RELATING TO ESTABLISHMENT OF MOBILIZATION VALUES FOR SELECTED AIRCRAFT

TABLE OF FACTORS--PAYLOAD

Aircraft	Cube	Weight	$\sqrt{\text{Cube Factor}}$	X	Weight Factor	=	Payload Factor
B747	22,200	88.75 T	4.744	X	2.465	=	3.420
DC-10-40	14,908	61.05 T	3.185	X	1.696	=	2.324
DC-10-30	13,012	68.40 T	2.780	X	1.900	=	2.298
DC-10-10	14,592	37.35 T	3.118	X	1.038	=	1.799
DC-8-63	6,480	37.85 T	1.385	X	1.051	=	1.206
DC-8-62	5,040	32.30 T	1.077	X	.897	=	.983
DC-8-61	6,480	28.00 T	1.385	X	.778	=	1.038
DC-8-55	4,680	33.70 T	1.0	X	.936	=	.967
DC-8-54	4,680	30.50 T	1.0	X	.847	=	.920
B707	4,680	36.00 T	1.0	X	1.0	=	1.0
DC-8-33	4,680	26.50 T	1.0	X	.736	=	.858

TABLE OF FACTORS--SPEED

Aircraft	Block Speed/3500 NM	Factor
B747	465K	1.022
DC-10-30/40	460K	1.011
DC-10-10	455K	1.0
DC-8-63	455K	1.0
DC-8-62	455K	1.0
DC-8-61	455K	1.0
DC-8-55	455K	1.0
DC-8-54	455K	1.0
B707	455K	1.0

MV COMPUTATIONS (CONVERTIBLES)

Aircraft	Payload Factor	X	Speed Factor	X	Incentive Factor	X	10 = MV
B747	3.420	X	1.022	X	100%	X	10 = 34.952
DC-10-40	2.324	X	1.011	X	100%	X	10 = 23.496
DC-10-30	2.298	X	1.011	X	100%	X	10 = 23.233
DC-10-10	1.799	X	1.0	X	100%	X	10 = 17.990
DC-8-63	1.206	X	1.0	X	100%	X	10 = 12.060
DC-8-62	.983	X	1.0	X	100%	X	10 = 9.830
DC-8-61	1.038	X	1.0	X	100%	X	10 = 10.380
DC-8-55	.967	X	1.0	X	100%	X	10 = 9.670
DC-8-54	.920	X	1.0	X	100%	X	10 = 9.200
B707	1.0	X	1.0	X	100%	X	10 = 10.000
DC-8-33F	.858	X	1.0	X	80%	X	10 = 6.864

APPENDIX B

INTERVIEW GUIDE, SUBPROBLEM 1

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

As a result of the Airline Deregulation Act of 1978, the Civil Aeronautics Board made a decision to cease its rate-making functions for the Department of Defense. This action caused the Air Force to search for new contracting and rate-setting procedures which would meet Department of Defense contract airlift requirements and, at the same time, be competitive.

A thesis team at the Air Force Institute of Technology is working on a part of this problem specifically concerned with the military domestic air freight market. In their research design, a number of surveys are required. You have been identified as being able to provide key input into one of these surveys. The survey is designed to define competition in general and within the context of the specific problem and the Department of Defense environment.

Your thoughtful advanced consideration to this topic is solicited. The survey will be conducted by telephone and, with your consent, will be taped to insure accuracy. The interview should take no longer than fifteen minutes. A tentative date for interview has been set for 7 February 1980. However you will be called in advance to confirm exact time and date that will be convenient for you.

Your cooperation will be greatly appreciated by the survey team and the staff here at the School of Systems and Logistics, AFIT. The output of this research has the potential of contributing significantly to improving Department of Defense air freight contracting procedures in the years to come. If you have questions, please contact Major Roland Hassebrock at AUTOVON 785-4437 or the undersigned at AUTOVON 785-3809.

Sincerely

JACK L. McCHESNEY, Lt Col, USAF
Assistant Chief, Dept of Contracting
Management
School of Systems and Logistics

Good morning, Mr. _____, (Short introduction of the interviewer). As you are aware, Mr. _____, we are writing a thesis dealing with the impact that the Airline Deregulation Act of 1978 has on the military in contracting for domestic military air freight service. You were selected for this interview based on your expertise. To assure that we maintain a high degree of accuracy in this interview, we would like to record our conversation, unless, of course, you have some objection. To begin our interview then:

1. How would you describe the primary mission of your organization?

2. What is your job? What does this entail?

3. How long have you been in this position?

4. Are you familiar with the problem addressed in our letter of request for this interview? How? (Direct work with the problem, reading on the subject, indirect contact, etc.?)

The final objective of our research, Mr. _____, is to determine a contracting method that will ensure maintenance of a flexible and sufficient CRAF, provide efficient peacetime air freight service and permit competitive market forces to determine price. Based on this, I would like to ask you the following questions. Please be as

complete as you feel necessary so that your position is fully represented.

5. How would you describe or characterize a contracting situation in which there was adequate competition?

6. If one of your organization's goals or objectives was to improve competition in your contracting, how would you assess or measure the degree of competition?

7. In your opinion, why should we strive for competition?

8. What factors affect (enhance or limit) the degree of competition in the contracting process?

9. Putting this together then, what is the definition of competition that you use in your duties of contacting or checking on the contracting effort?

10. Is this definition in common usage throughout your organization?

11. In light of your definition, do you feel that competition can be attained as prescribed by the Airline Deregulation Act of 1978? (Add as required, information as related to our research objective.)

Thank you very much for your cooperation. Your comments should be very helpful to us in our research effort. (If required, we will reassure respondent that responses will be treated as anonymous in our report.)

APPENDIX C

INTERVIEW GUIDE, SUBPROBLEM 2 (PEACETIME)

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

As a result of the Airline Deregulation Act of 1978, the Civil Aeronautics Board made a decision to cease its rate-making functions for the Department of Defense. This action caused the Air Force to search for new contracting and rate-setting procedures which would meet Department of Defense contract airlift requirements and, at the same time, be competitive.

A thesis team at the Air Force Institute of Technology is working on a part of this problem specifically concerned with the military domestic air freight market. In their research design, a number of surveys are required. You have been identified as being able to provide key input into one of these surveys. The survey is designed to specifically identify essential Logair and Quicktrans requirements for peacetime air freight service but additionally to relate these to the bases for CRAF. The thesis team will also be interested in any information that you can provide relative to other studies that may have been accomplished on the present Logair/Quicktrans operations.

Your thoughtful advanced consideration to this topic is solicited. The survey will be conducted by telephone and, with your consent, will be taped to insure accuracy. The interview should take no longer than fifteen minutes. A tentative date for interview has been set for 11 February 1980. However you will be called in advance to confirm exact time and date that will be convenient for you.

Your cooperation will be greatly appreciated by the survey team and the staff here at the School of Systems and Logistics, AFIT. The output of this research has the potential of contributing significantly to improving Department of Defense air freight contracting procedures in the years to come. If you have questions, please contact Major Roland Hassebrock at AUTOVON 785-4437 or the undersigned at AUTOVON 785-3809.

Sincerely

JACK L. McCHESNEY, Lt Col, USAF
Assistant Chief, Dept of Contracting
Management
School of Systems and Logistics

Good morning, Mr. _____, (Short introduction of the interviewer). As you are aware, Mr. _____, we are writing a thesis dealing with the impact that the Airline Deregulation Act of 1978 has on the military in contracting for domestic military air freight service. You were selected for this interview based on your expertise. To assure that we maintain a high degree of accuracy in this interview, we would like to record our conversation, unless, of course, you have some objection. To begin our interview then:

1. How would you describe the primary mission of your organization?

2. What is your job? What does this entail?

3. How long have you been in this position?

4. Are you familiar with the problem addressed in our letter of request for this interview? How? (Direct work with the problem, reading on the subject, indirect contact, et.?)

The final objective of our research, Mr. _____, is to determine a contracting method that will ensure maintenance of a flexible and sufficient CRAF, provide efficient peacetime air freight service and permit competitive market forces to determine price. Based on this, I would like to ask you the following questions. Please be as

complete as you feel necessary so that your position is fully represented.

5. Can you identify any studies that show advantages or disadvantages for the present system based on established requirements; i.e., present delivery service vs. increase storage of inventory? If not, do you know where such information can be obtained? If so, what is your opinion of the findings?

6. What criteria is used in the formulation of routes? Where would we find the supporting rationale for this criteria?

7. What criteria is used to formulate present aircraft requirements in terms of type and number of aircraft?

8. Are there any routes or bases on which specific sized aircraft could not be handled? Which routes/bases? Why?

9. What are some major changes you foresee which could drastically impact on operations as they currently are performed?

a. Any new handling system being considered? (All Services)

b. Any terminal changes?

c. Any other new acquisition such as the MX Missile, CX Transport and the FF Ship that will have an effect?

d. Escalating cost of fuel?

10. What do you visualize the LOGAIR (QUICKTRANS) requirements will be in the future? (Encourage narrative.)

11. What proportion of total items shipped by LOGAIR/QUICKTRANS is high priority under the UMMIPS criteria? Is there any documentation available for our review?

12. What are the bases for their priority and have they been evaluated? If so, what were the results in terms of need? If not, what is your opinion as to the service provided compared to essential needs of the activity?

13. What are your requirements during escalated or emergency (wartime) situations projected to be? Are they substantially higher than normal activity?

Thank you very much for your cooperation. Your comments should be very helpful to us in our research effort. (If required, we will reassure the respondent that responses will be treated as anonymous in our report.) Thank you.

APPENDIX D

INTERVIEW GUIDE, SUBPROBLEM 2 (EMERGENCY)

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY AFC
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

As a result of the Airline Deregulation Act of 1978, the Civil Aeronautics Board made a decision to cease its rate-making functions for the Department of Defense. This action caused the Air Force to search for new contracting and rate-setting procedures which would meet Department of Defense contract airlift requirements and, at the same time, be competitive.

A thesis team at the Air Force Institute of Technology is working on a part of this problem specifically concerned with the military domestic air freight market. In their research design, a number of surveys are required. You have been identified as being able to provide key input into one of these surveys. The survey is designed to identify how the domestic CRAF requirements are developed. The team is also interested in your view relative to the type of aircraft that you feel will best satisfy these emergency requirements and any changes you foresee in the near future.

Your thoughtful advanced consideration to this topic is solicited. The survey will be conducted by telephone and, with your consent, will be taped to insure accuracy. The interview should take no longer than fifteen minutes. A tentative date for interview has been set for 13 February 1980. However you will be called in advance to confirm exact time and date that will be convenient for you.

Your cooperation will be greatly appreciated by the survey team and the staff here at the School of Systems and Logistics, AFIT. The output of this research has the potential of contributing significantly to improving Department of Defense air freight contracting procedures in the years to come. If you have questions, please contact Major Roland Hassebrock at AUTOVON 785-4437 or the undersigned at AUTOVON 785-3809.

Sincerely

JACK L. McCHESNEY, Lt Col, USAF
Assistant Chief, Dept of Contracting
Management
School of Systems and Logistics

Good morning, Mr. _____, (Short introduction of the interviewer). As you are aware, Mr. _____, we are writing a thesis dealing with the impact that the Airline Deregulation Act of 1978 has on the military in contracting for domestic military air freight service. You were selected for this interview based on your expertise. To assure that we maintain a high degree of accuracy in this interview, we would like to record our conversation, unless, of course, you have some objection. To begin our interview then:

1. How would you describe the primary mission of your organization?

2. What is your job? What does this entail?

3. How long have you been in this position?

4. Are you familiar with the problem addressed in our letter of request for this interview? How? (Direct work with the problem, reading on the subject, indirect contact, et.?)

The final objective of our research, Mr. _____, is to determine a contracting method that will ensure maintenance of a flexible and sufficient CRAF, provide efficient peacetime air freight service and permit competitive market forces to determine price. Based on this, I would like to ask you the following questions. Please be as

complete as you feel necessary so that your position is fully represented.

5. How are the CRAF requirements determined for the continental U.S.? (Address ton mile and route structure.)

6. Based on these requirements, how are they presently being tied to number and type of aircraft?

7. What are some major changes you foresee which could drastically impact on operations as they currently are performed?

a. Any new handling system being considered? (All Services)

b. Any terminal changes?

c. Any other new acquisitions such as the MX Missile, CX Transport and the FF Ship that will have an effect?

d. Escalating cost of fuel?

8. Looking at the routes as now established, what changes do you foresee in meeting domestic CRAF requirement?

Thank you very much for your cooperation. Your comments should be very helpful to us in our research effort. (If required, we will reassure the respondent that responses will be treated as anonymous in our report.) Thank you.

APPENDIX E

FORMAL QUESTIONNAIRE, SUBPROBLEM 3

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

As a result of the Airline Deregulation Act of 1978, the Civil Aeronautics Board made a decision to cease its rate-making functions for the Department of Defense. This action caused the Air Force to search for new contracting and rate-setting procedures which would meet Department of Defense contract airlift requirements and, at the same time, be competitive.

A thesis team at the Air Force Institute of Technology is working on a part of this problem specifically concerned with the military domestic air freight market. In their research design, a number of surveys are required. You have been identified as being able to provide key input into one of these surveys.

The survey is designed to identify the airline industries' viewpoint on such matters as the nature of the military domestic air cargo market, deregulation's impact on that market, and impact on the CRAF. Additionally, due to your unique position in this structure, the team would like your assistance in taking a forward look into the future of the LOGAIR and QUICKTRANS markets.

The survey which is enclosed with this letter is the result of extensive prior research by the team, and its completion will result in adding extensive knowledge to their final output. It is realized that completion of the survey may be time-consuming and require some research on your part. Hopefully, adequate time is available for you to complete the survey and meet their completion date of 21 March.

Due to the nature of the research and the vital impact of the industry survey on the team's final recommendations, it would be greatly appreciated if all questions were answered as completely as possible. In an effort to get your complete and open responses to this questionnaire, the team has chosen not to identify questionnaires with the respondents, thus assuring that the responses will remain anonymous in their final report.

Your cooperation will be greatly appreciated by the survey team and the staff here at the School of Systems and Logistics, Air Force Institute of Technology. The output of the research will contribute substantially to the knowledge of the students involved in this study, and may contribute valuable information to those currently engaged in contracting for defense air freight service. If you have any questions, please contact Maj Roland A. Hassebrock of the thesis team (513-255-4437) or the undersigned at (513-255-3809). The enclosed self-addressed envelope is provided for you to forward your responses. Please return no later than 21 March 1980.

Sincerely

JACK L. McCHESNEY, Lt Col, USAF
Assistant Chief, Dept of Contracting Management
School of Systems and Logistics

1 Atch
Survey

QUESTIONNAIRE

Please use reverse or additional pages as necessary for each of the following questions.

1. (a) Are you familiar with the Domestic Military Air Freight Market (LOGAIR/QUICKTRANS)? _____

   If the answer is no, please pass this questionnaire on to a member of your organization who is.

   (b) If the answer was yes, please circle the source of that familiarity.

   (1) Current participant (please state number of years of participation) _____

   (2) Former participant (please state number of years of participation) _____

   (3) Potential participant

   (4) Other (please explain) _____

_____

_____

_____

2. *(Current participants only).* Based on total revenue earned, what percentage of your present operations is devoted to the Domestic Military Air Freight Market?

   _____

3. (a) What is your opinion of the Military Airlift Command's (MAC's) present method of contracting for LOGAIR/QUICKTRANS? (Use fiscal year 1980 request for proposal)

_____

_____

_____

(b) What general changes if any would you recommend in the present contracting methods? (Please illustrate)

(c) What changes if any would you recommend in present pricing of airlift contracts? (Please illustrate)

4. *(Non-participants only).*
   (a) List reasons why you are not currently participating in the LOGAIR/QUICKTRANS Market.

   (b) What inducements would be necessary to achieve your positive response to future requests for proposal?

5. (a) Does participation in the CRAF (Civil Reserve Air Fleet) entail additional costs to your airline?

   (b) If yes, what are the types of costs which you attribute to this participation? (i.e., personnel training, equipment modification, etc.)

(c) Approximately how much per year is this cost per aircraft? (Please state a range if no single figure appropriate)

_____

6. (a) If you were to cease participation in the LOGAIR/ QUICKTRANS Market, would you continue to provide aircraft to the CRAF?

_____

(b) List your reasons for that decision.

(c) Would you consider providing aircraft to the CRAF on a separate contract basis and if so what percent of your fleet would you be willing to provide?

_____

(d) (If you answered yes to 6c), what types of incentives would motivate you to do so?

_____

_____

_____

_____

_____

_____

(e) If monetary incentives are necessary, in current dollars for your participation in CRAF, what would you think is a reasonable figure per aircraft tail number, per year?

L188 _____

L100-30 _____

DC-9 _____

Other (please state types aircraft) _____

_____

_____

_____

7. In your opinion, what do you think has been the major impact of the Airline Deregulation Act on the Domestic Military Air Freight Market?

_____

_____

_____

8. If requirements for Domestic Military Air Freight transport remain relatively stable over the next five years, do you foresee any changes in your operational capability that would affect your participation? (i.e., retirement of aircraft, etc.) Please explain.

9. Please provide us your views on any other areas of our subject which you feel need to be addressed.

APPENDIX F

INTERVIEW GUIDE, SUBPROBLEM 4

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (ATC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

As a result of the Airline Deregulation Act of 1978, the Civil Aeronautics Board made a decision to cease its rate-making functions for the Department of Defense. This action caused the Air Force to search for new contracting and rate-setting procedures which would meet Department of Defense contract airlift requirements and, at the same time, be competitive.

A thesis team at the Air Force Institute of Technology is working on a part of this problem specifically concerned with the military domestic air freight market. In their research design, a number of surveys are required. You have been identified by the researchers as being able to provide key input into the last of these surveys, and the most critical, to meeting their research objectives. This survey is designed to arrive at recommendations for a contracting method that will provide efficient peacetime domestic air freight service, maintain a flexible and sufficient civil reserve air fleet and permit competitive market forces to determine price.

To aid you in understanding the background of this effort, as well as to provide an analysis of the information gathered from the previous surveys, a summary of the research objectives and finding relating to the three research questions are provided (Atch 2). Please consider these findings in forming your responses to the questions in the interview guide (Atch 1).

I understand that you have already agreed to participate in this interview and to discuss your responses with the members of the thesis team. If you have any questions or need assistance in completing this effort, please do not hesitate to contact me at AUTOVON 785-4437. Your cooperation is greatly appreciated by the thesis team and the staff of the School of Systems and Logistics, AFIT.

Sincerely

JACK L. McCHESNEY, Lt Col, USAF
Assistant Chief, Dept of Contracting Management
School of Systems and Logistics

2 Atch
1. Interview Guide (3 pgs)
2. Summary (3 pgs plus Atch A & B)

ATTACHMENT 1

1. Are you familiar with the method presently used by MAC in contracting for domestic military air freight service known as Logair/Quicktrans? _____

2. If your answer to Question 1 was yes, please indicate the source of your familiarity.

   _____ Past experience in contracting for this service?

   _____ Presently involved in contracting for Logair/ Quicktrans?

   _____ Only through this research study?

   _____ Other? _____

   _____

3. Based on the Summary of information gathered on the first three research questions, what type of contract do you feel would be more appropriate for securing efficient peacetime domestic air freight service? maintain a flexible CRAF, and permit competitive market forces to determine price?

   _____ Firm Fixed Price? (FFP)

   _____ Fixed Price Incentive Fee? (FPIF)

   _____ Cost plus Fixed Fee? (CPFF)

   _____ Cost plus Incentive Fee? (CPIF)

   _____ Cost plus Award Fee? (CPAF)

   _____ Other? _____

   _____

   Why did you select this type? _____

   _____

   _____

   _____

4. Using the analysis provided by the researchers, do you feel this contracting should be accomplished through Formal Advertising or Negotiation? _____

   Why? _____

5. If you suggest negotiation, what exception would you cite from those defined under 10 USC2304(a)(1) through (17) DAR Section III, Part 2 and implementing Regulations?

   (Please explain--use reverse if necessary.)

6. Is your choice of contract type in Question 3 applicable for both the air freight service and CRAF as one contract, or do you feel these requirements should be separated?

   (Please explain.) _____

7. If you chose an incentive type contract, what incentive structures do you propose?

   (Please explain.) _____

8. What economic clauses do you feel should be included based on our present economy and the type of contract you recommended? _____

_____

_____

_____

_____

9. If you suggested separating the air freight service from the CRAF requirements, what features of your contracting method would assure participation in the CRAF by those qualified sources? _____

_____

_____

_____

_____

10. With the information you have been provided and the definition of competition from the DAR, what other suggestions do you have as to a method that could be used in contracting for efficient peacetime air freight service while maintaining a flexible and sufficient CRAF? _____

_____

_____

_____

_____

_____

_____

_____

ATTACHMENT 2

Summary of Analysis

The following paragraphs summarize the analysis of responses to the first three research questions.

Question 1

What is the Government's definition of competition in light of the Airline Deregulation Act of 1978, as it applies to the domestic military air freight market?

Summary

Principal government agencies surveyed indicated that the standard definition as provided by the DAR would be applicable to the market in question. The current method of providing aircraft to the CRAF as a means of proportionally awarding the domestic military air freight contract is one means of meeting the requirements of competition.

Question 2

What are the potential domestic military air freight requirements for future contracting to commercial air carriers?

Summary

Requirements in terms of tonnage hauled, locations and aircraft configuration will not change over the next five years. They are included for your information

in Attachment A. These requirements were analyzed and judged to be not overly restrictive. Currently the market has provided two aircraft which most economically meet these requirements, the L188C and the L100-30. These aircraft will continue to be available over the next five years.

Question 3

Who are the eligible suppliers in the domestic military air freight market and what are their motivations for participating or not participating in the market?

Summary

Though many firms are eligible the economics of aircraft operation currently limit participation to firms operating the type aircraft noted in the preceding question. Firms having these aircraft in sufficient quantity and additionally meeting the CAB certification requirement and MAC requirement of only 40 percent of business in military market, are the current three contractors Transamerica Airlines, Inc., Zantop International Airlines, Inc., and Hawaiian Airlines, Inc. Additionally, one other airline, Alaskan Airlines, Inc., was judged to have adequate L100-30 aircraft to bid if they desired and would satisfy the other requirements. The three current operators as well as other airlines operating over a wide spectrum of the

industry and having the potential to provide the service, were surveyed.

Generally all respondents felt that current contracting methods were fair and met both their needs and those of the government. One current respondent did not agree with the consensus and felt that current contract requirements as specified in the RFP were overly restrictive and were not necessary (specifically the two-door requirement). All respondents felt that the fuel price escalation protection provided under the current contract must be maintained.

A majority did not favor separating CRAF requirements from the current contracting for peacetime domestic military air freight service. One current operator was willing to do so and provide 100 percent of his fleet; however, the estimated price tag for this service was between $50,000 and $100,000 per L188C per year and $150,000 for any aircrew required without sixty days lead time.

The principal motivation of all operators is profit. This incentive was strongly provided by all respondents both currently providing the service and all other airlines who admitted they would enter the market if strong monetary incentives were present.

A sample of the responses to various interview questions are provided in Attachment B so that you can better visualize respondents' feelings regarding the three research questions.

ATTACHMENT A

Sample of Specific Requirements Used for Determination of "Responsive" Offeror

General Aircraft Requirements
(Cargo Configuration Only)

Must be turbine-powered and possess the Section 4010 and 418 certification from the FAA. Additional aircraft requirements relative to Logair/Quicktrans are attached hereto. These requirements were extracted from the '79 request for proposals and are incorporated as Part 1 and Part 2 of this attachment.

Hauling Capability for Specified Routes

-46,000 pound min. ACL capable of carrying eight 108" x 88" or sixteen 54" x 88" 463L pallets.

-34,000 pound min. ACL capable of carrying seventeen 54" x 88" 463L pallets or eight 108" x 88" plus one 54" x 88" 463L pallet.

Configuration Requirement for Specified Routes

-For the 34,000 pound min. ACL aircraft some must have a two, and some, one cargo door configuration. If two-door, the one cargo door must be at least 80" high and 140" wide with the other door meeting minimum specification of 80" x 98". For the one-door aircraft, the cargo door must have a minimum size of 80" high x 136" wide.

-The 46,000 pound min. ACL aircraft must be configured such that it will allow truck bed height, straight-in loading and a cargo door size of 108" high x 120" wide.

PART I

Specifications for Aircraft
Used in Logair Operations

1. For the performance of the contract the Contractor shall furnish turbine-powered cargo configured aircraft meeting the specifications set forth below.

a. Seats for Government Sponsored Personnel.

(1) The Contractor shall provide two (2) permanently installed passenger seats at no extra cost for Government sponsored personnel authorized aboard the aircraft as specified in FAR 121.583.

(2) The seats shall be located in the heated portion of the aircraft and shall be upholstered with foam rubber or other material providing equivalent comfort. The seats will be kept clean in the same manner as those used for normal passenger operations.

(3) A reading lamp, separately controlled, shall be located near the passenger seats to provide adequate lighting for work in flight by Government sponsored personnel.

(4) The Contractor shall provide an adequate oxygen supply and shall maintain clean oxygen masks in the area of the passenger seats for use by passengers when required.

(5) Contractor shall assure that Government sponsored personnel are properly instructed by the Contractor's crew prior to take-off relative to:

(a) The physical location and method of opening emergency exits.

(b) The coordinated action required of crew members and passengers in the event of a forced landing or ditching.

(c) The location of other emergency equipment such as emergency radio, first aid kits, etc. (Distribution of handbills alone will not be considered adequate to cover the foregoing.)

b. Mechanized Loading System. All aircraft shall be equipped with an aircraft cargo loading system consisting of roller type conveyors, and longitudinal guide

and restraint rails with locking mechanisms which meet FAA pallet load restraint requirements when secured to the aircraft floor. The Contractor shall assure that the loading system provided is completely compatible with the 463L pallets (54" x 88" or 108" x 88"). Supplemental tiedown devices will be provided by Air Force bases as necessary for additional restraint of cargo. Spring loaded ball transfer type conveyor plates of adequate size to accommodate the 463L pallet will be provided at each usable cargo loading door. Design of the ball transfer plates will be such as to facilitate ease of transfer of the pallet from the conveyorized ground handling equipment to the plate and then into final position in the aircraft. A positive means for securing a pallet or pallets to the ball transfer plate will be incorporated into design of the system. If required, a ball and roller entrance assembly for each usable cargo door will be carried aboard the aircraft at all times as an integral part of the loading system. The Contractor shall perform appropriate maintenance on conveyors and ball transfer plates, and aircraft floors to assure ease and safety of personnel in moving pallets of cargo to final position in aircraft. Aircraft shall be equipped with restraint nets or curtains in the belly compartments in order to provide a removable cargo compartment divider which will permit loading of soft-packaged goods in the belly compartments of the aircraft.

c. Electrical Power and Lighting. All aircraft shall be equipped with a receptacle to provide power for electrically energized guidance systems as set forth in paragraphs (1) or (2) below. In addition, all aircraft shall be equipped with a cargo compartment lighting system that will provide sufficient illumination for ground loading operations.

(1) Aircraft power required is 28 VDC, 200 AMPS mili-second peak load and 100 AMPS continuous load, equipped with a cannon receptacle. The electrical receptable shall be three (3) contact on connector mating end, straight shaped, enclosing shell, aluminum base alloy, resistant to corrosion, polarized, nonlocking type, two (2) mounting holes .205 inch diameter spaced, 3 3/4 inch center-to-center in accordance with Specification MIL-C-7974.

(2) Aircraft power required is 115 VAC, 60 or 400 cycle, single phase, equipped with a polarized receptacle. The receptacle shall be compatible with MS 24663 plug.

(3) Aircraft shall be equipped with a "power failure indicator light" warning system in the aircraft cockpit which will provide the crew with a visual indication of failure of and/or insufficient power to the receptacle required in (1) or (2) above.

d. General.

(1) All aircraft shall be equipped with a metal or leather pouch permanently attached to airframe inside the aircraft to transport all cargo documents which the Contractor shall maintain and for which the Contractor shall be responsible.

(2) All aircraft shall be equipped with safety chains on aircraft ladders and have escape ropes at each door adequately secured to the aircraft to insure prevention of ground accidents.

PART II

Specifications for Aircraft
Used in Quicktrans Operations

1. For the performance of this contract the Contractor shall furnish turbine-powered, cargo configured aircraft meeting the specifications set forth below:

a. Seats and Accommodations for Government Sponsored Personnel.

(1) The Contractor shall provide two (2) permanently installed passenger seats for Government sponsored personnel authorized aboard the aircraft in flight as specified in FAR 121.583. The seats shall be located in the heated portion of the aircraft so as to permit consistent heat of 72 degrees Fahrenheit throughout the area and shall be upholstered with foam rubber or other material providing equivalent comfort. The seats will be kept clean in the same manner as those used for normal passenger operations.

(2) A reading lamp, separately controlled, shall be located near the passenger seats to provide adequate lighting for work in flight by Government sponsored personnel.

(3) The Contractor shall provide two (2) blankets (minimum size 55 x 63 inches) for each seat. These blankets are to be maintained in a sanitary condition by the Contractor.

(4) The Contractor shall provide an adequate oxygen supply and shall maintain clean oxygen masks in the area of the passenger seats for use by passengers when required.

(5) Contractor shall assure that Government sponsored personnel are properly instructed by the Contractor's crew prior to take-off relative to:

(a) The physical location and method of opening emergency exits.

(b) The coordinated action required of crew members and passengers in the event of a forced landing or ditching.

(c) The location of other emergency equipment such as emergency radio, first aid kits, etc. (Distribution of handbills alone will not be considered adequate to cover the foregoing.)

b. Mechanized Loading System.

(1) All aircraft shall be equipped with a cargo pallet loading system which shall include door and sill protection, ball transfer plates (side loading aircraft only), retractable pallet locks and side guides. The system shall be compatible with 54 x 88 inch (half) and 88 x 108 inch (full) pallets of 463L design and flexible or rigid commercial type pallets in these sizes. The system shall be capable of accepting any mix of these designs or sizes. The loading system design shall:

(a) Accept a minimum of 16 54 x 88 inch pallets.

(b) Withstand and restrain a minimum 3500# load on 54 x 88 inch pallet.

(c) Withstand and restrain a minimum 7000# load on 88 x 108 inch pallet.

These weights include weight of pallets and nets combined. Pallet restraint criteria must meet FAA requirements.

(d) Permit movement of fully loaded pallets (half or full) over ball mat (side loading aircraft only) and rail system without incurring damage to pallets or aircraft system and without necessity of removing locks.

(e) Side loaded aircraft shall have skid strips on the ball transfer plates which will prevent pallets from contacting ball retaining cover when ball support springs are fully compressed. Springs in ball transfer plates must meet a minimum 65 pound compression test. This does not relieve Contractor's responsibility to install heavier springs if required to meet minimum requirements specified in paragraphs (b) and (c) above.

(2) On side loaded aircraft a ball transfer plate shall be provided at each door area and the system shall permit loading and locking through either door and unlocking and unloading of the same pallet through either the same or opposite door.

(3) On aircraft employing two side doors, the rear door opening controls should be accessible from the ground or inside the front door area.

(4) Contractor shall provide a tail stand for all side loading aircraft. An adjustable ramp support unit will be furnished by the Contractor to support the loading ramp on end loading aircraft.

(5) The loading system furnished with tail loading aircraft shall accommodate the maximum number of pallets of the sizes indicated in paragraph (1) above or any mix of these sizes and types.

(6) Except for the forward and the rear compartment each compartment must have a minimum 5000 pound capacity.

(7) Aircraft capabilities shall permit loading of a half pallet up to 50% of the compartment limit while the other half pallet in the same compartment may vary from 0 to 50% of the total compartment capability.

c. Aircraft Tiedown Provisions

(1) Tiedown provisions will comply with those approved by FAA for the type of aircraft concerned and as specified in the aircraft operating manual.

(2) Provisions will be adequate to secure all cargo to prevent damage of cargo and to insure safety throughout the flight.

(3) Tiedown provisions will be suitable for individual tiedown of high density and nonstackable cargo units.

(4) The Contractor's aircraft system must have a minimum of forty (40) tiedown rings to facilities tying down large and/or heavy items such as engines or other material oversize to a pallet which must be secured separately to the aircraft (including the capability to secure oversize/heavy cargo to the air frame in the center of the pallet loading system). When additional units such as shackles are required in order to attach straps, chains or binders to the aircraft locks or tiedown points, the Contractor must supply them. If seat tracks must be used to achieve the 40 tiedown positions, seat track D ring devices must be provided by the Government. However, sufficient

seat tracks must be available with pallets in position to achieve proper tiedown. The system and tiedown capability must conform to restraint standards acceptable to the FAA.

(5) Palletized cargo will be secured to the Government pallets with Government furnished pallet nets. If additional tiedown equipment is necessary to secure the load to the pallet, the Government will furnish it. In addition, sufficient quantities of tiedown equipment will be provided by the Government for separate tiedown of heavy items such as engines or other material oversize to a pallet which must be secured separately to the aircraft.

(6) Contractor will conduct inspection of aircraft prior to all originating flights to insure that cargo compartments are in suitable condition to accommodate Government cargo.

d. Aircraft Lighting. Lighting system must be an integral part of the aircraft equipment and provide adequate interior lighting for ground loading and unloading operations.

(1) The lighting system will consist of a minimum of 200 watts total, with bulbs so spaced as to provide adequate lighting in the main cargo compartment. All bulbs will be protected by bulb guards (except in those aircraft that have recessed lights which provide the equivalent protection of bulb guards).

(2) A minimum of one (1) 25 watt bulb will be provided in each subcompartment.

(3) One (1) or more bulbs will be located at or near each cargo loading door to provide light for loading and unloading operations through the cargo door.

e. General.

(1) All aircraft shall be equipped with a metal or leather pouch permanently attached to the airframe inside the aircraft, or the Contractor shall provide a heavy canvas bag to transport all cargo documents.

(2) All aircraft shall be equipped with safety chains on aircraft ladders and have escape ropes at each door adequately secured to the aircraft to insure prevention of ground accidents.

(3) The Contractor will provide sufficient aircraft handling and loading manuals for all terminals which will clearly instruct terminal personnel as to proper operation of the loading system, tiedown requirements for all types of freight, and electrical and air start hook-up procedures. One copy of this manual will also be provided to the management office of the terminal contractor, the ACO and OPCON.

(4) The Government may, at its discretion, utilize 463-L or commercial type pallets and bulk load aircraft to meet requirements for oversized freight.

ATTACHMENT B

Sample of Responses to Questions Used to Resolve Subproblems 1 Through 3

I. Subproblem 1

A. Question 5 from Interview Guide: How would you describe or characterize a contracting situation in which there was adequate competition?

Responses

1. Prerequisites would be that you have two or more sources capable of providing required services and that you have adequately described your requirement without being overly restrictive.

2. To have competition you would have to have two or more firms who are independently bidding for the business by the offeror of the most favorable terms.

3. Definition set forth in DAR as it describes price and technical competition. This includes number of offerors, independent proposals, percentage of available sources.

B. Question 9 from Interview Guide: ...what is the definition of competition that you use in your duties of contracting or checking on the contracting effort?

Responses

1. Since we do have three "responsive" offerors responding to the request for proposal as to the 34,000 pound min. ACL aircraft we do have competition. However, since the L-100-30 only has one company presently operating this aircraft and responding to the solicitation we don't really have competition in terms of the definition of two or more sources.

2. What is used in airlift industry is the types and number of aircraft carriers are willing to commit to CRAF and that then determines percentage of business they will be awarded. This is the limit of competition. When a uniform rate is used there is a degree of competition or a competitive factor that does exist. Thus, if a carrier does improve operation by lowering overall cost he will make greater profit.

3. No different than that as set forth in DAR.

II. Subproblem 2

A. Question 7 of Peacetime Guide: What criteria is used to formulate present aircraft requirements in terms of type and number of aircraft?

Responses

1. Type of aircraft that gives us closest capability to move what we need to move with minimum limitations (see present contract for details) and also that can be moved on MAC aircraft. The specific equipments and containers that must be moved dictate a tail loading or front end loading aircraft and prohibit side loading aircraft. Do not establish number of aircraft only requirements for flow time.

2. Size of cargo, weight limitations during high temperature operating months, load sequencing and 463L material handling equipment, and aircraft that can best serve the trunk and feeder route system and also provide the same benefit for CRAF.

3. The tonnage requirement and other specifics as set forth in contract establish the type of aircraft.

B. Question 9 of Peacetime Guide: What are some major changes you foresee which could drastically impact on operations as they currently are performed?

Responses

1. Present capability should satisfy any future plans as they are now known.

2. If we continue to get funding cuts that limit number of days for operational service we may need more stock in the pipe lines.

3. See little change in terms of requirements to be shipped, geographic area to be served, and material handling equipment. The frequency of operation may change due to funding restrictions.

C. Question 5 of Emergency Guide: How are the CRAF requirements determined for the continental U.S.?

Responses

1. By use of a regression analysis technique taking the peacetime flying hour program against the depot level workload (total receipt and issue). Then we use this factor by ALC and apply it times the wartime flying hour program to arrive at this requirement. This analysis did result in approximately a 95 percent correlation.

D. Question 6 of Emergency Guide: How are the CRAF requirements being tied to number and type of aircraft?

Responses

1. Not tied to the specific aircraft. The aircraft are determined by the Logair/Quicktrans requirements and the additional tonnage estimated for the CRAF is used to arrive at the number of aircraft.

III. Subproblem 3

A. Question 3a from Questionnaire: What is your opinion of the Military Airlift Command's present method of contracting for Logair/Quicktrans? (Use fiscal year 1980 request for proposal.)

Responses

1. Current method is satisfactory and has proven effective over a considerable period of time.

2. Equitable. All carriers participate in costing, rates, etc.

3. Unresponsive to domestic CRAF enhancement objectives. Pricing system unresponsive to carrier cost differences on low aircraft utilization versus high aircraft utilization routes.

B. Question 3b from Questionnaire: What general changes, if any, would you recommend in the present contracting methods?

Responses

1. More generalized specification of aircraft types would stimulate greater competition for government business.

2. Contract for space on scheduled air service.

3. Eliminate inordinate amount of documentation as to the use of government fuel.

C. Question 3c from Questionnaire: What changes, if any, would you recommend in present pricing of airlift contracts?

Responses

1. Inclusion of interest expense as cost of performing airlift and inclusion of all taxes, not just federal, in the tax provision.

2. More timely recovery mechanism for inflationary costs.

3. Competitive pricing by route but with continued protection against fuel cost escalation.

D. Questions 6a and 6b from Questionnaire: If you were to cease participation in the Logair/Quicktrans market, would you continue to provide aircraft to the CRAF? List your reasons.

Responses

1. No, no economic incentive.

2. Yes, many carriers participate in CRAF without MAC contracts.

3. No, certainly not in stages I and II, stage III however, is different since we will all be in it together.

E. Questions 6c and 6d from Questionnaire: Would you consider providing aircraft to the CRAF on a separate contract basis and, if so, what percent of your

fleet would you be willing to provide? What types of incentives?

Responses

1. One hundred percent, monetary.

2. No. Only acceptable method of participation for government or carrier is exercising the equipment with a real time system so that equipment is compatible and personnel are trained to function within the system.

3. No. Competitive bidding for such services with separate procurement for CRAF would seem to be a more expensive position for the Government in the long run.

4. Yes (30%). Investment for tax credit or guaranteed loan to purchase convertible or freight aircraft.

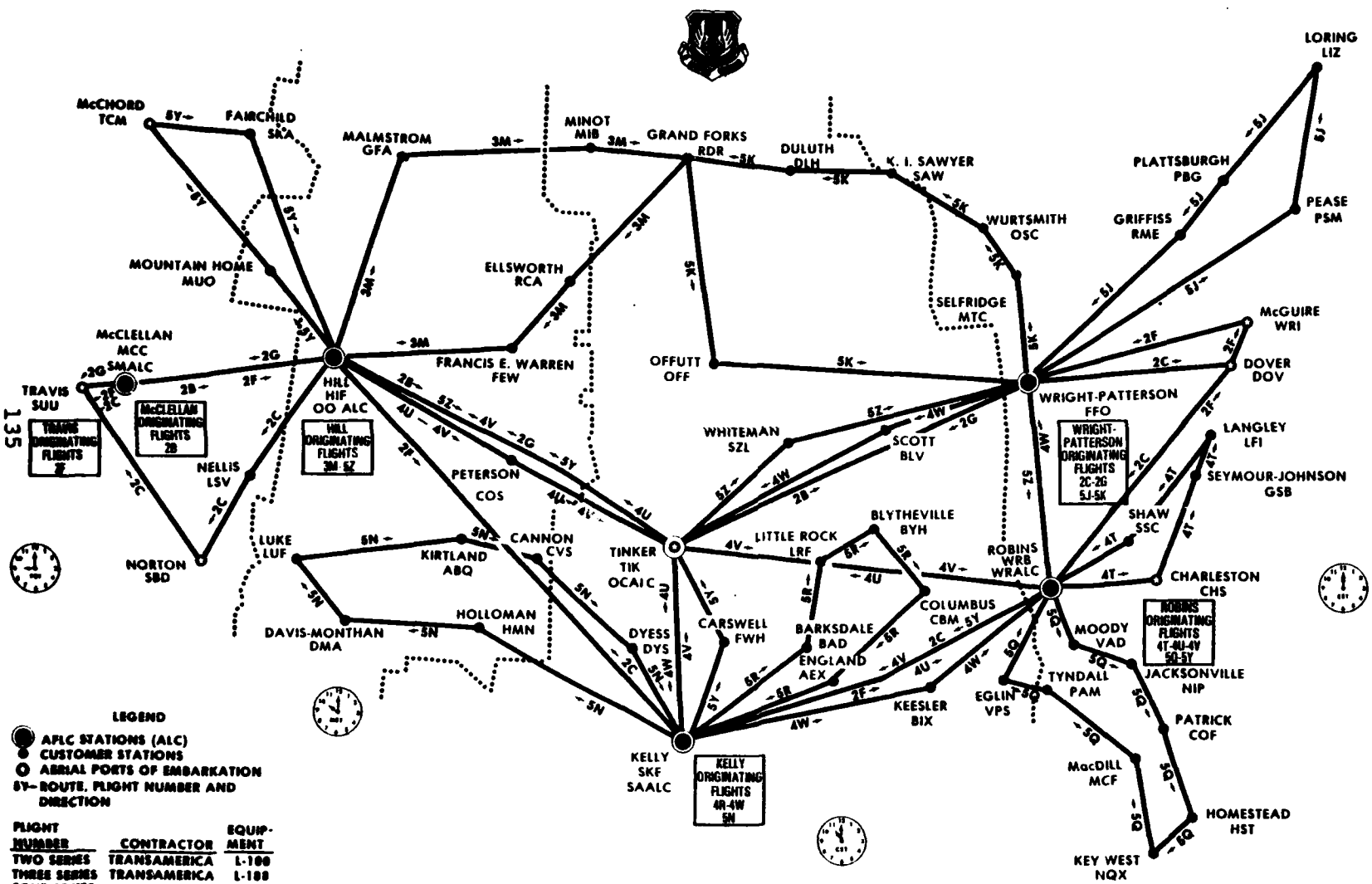
APPENDIX G

LOGAIR ROUTE STRUCTURE

LOGAIR

UNITED STATES AIR FORCE LOGISTIC AIRLIFT
ROUTE STRUCTURE

EFFECTIVE 1 FEBRUARY 1980



LEGEND

- AFLC STATIONS (ALC)
- CUSTOMER STATIONS
- AERIAL PORTS OF EMBARKATION
- 8Y– ROUTE, FLIGHT NUMBER AND DIRECTION

FLIGHT NUMBER	CONTRACTOR	EQUIPMENT
TWO SERIES	TRANSAMERICA	L-100
THREE SERIES	TRANSAMERICA	L-188
FOUR SERIES	HAWAIIAN	L-188
FIVE SERIES	ZANTOP	L-188

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