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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

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LOGISTICS AND COMMUNICATIONS
DIVISION

JAN 19 1976

B-133025

The Honorable
The Secretary of Defense

Dear Mr. Secretary:

2 As a follow-on to our review of fuel savings and other benefits by diverting passengers from chartered to scheduled overseas flights, we reviewed the Military Airlift Command's (MAC's) use of chartered cargo aircraft. In examining an 8-month period 1/ we found 42 instances in which it appeared MAC could have used the carrier's regularly scheduled commercial service instead of chartered aircraft. We estimate the Department of Defense (DOD) could have saved as much as \$425,000 by shipping this cargo on scheduled flights. In addition, the airlines would have saved about \$172,000 in operating costs, including about one million gallons of jet fuel.

BACKGROUND

3 MAC contracts with commercial air carriers as needed for supplemental airlift of cargo from MAC's domestic aerial ports to overseas military terminals. Rates for this service are established by the Civil Aeronautics Board (CAB). MAC contracts move cargo in planeload lots on a charter basis and, in some instances, in less than planeload lots in blocked space on scheduled flights.

Cargo moving on scheduled flights is palletized at the MAC aerial port by Air Force personnel and then turned over to the contract carrier. The contract carrier is responsible for draying the cargo to the commercial air terminal at origin and for delivering the cargo from the commercial terminal to the appropriate military terminal in the overseas area.

1/Information for July 1974 was not available from the MAC computer. Information for the final quarter of fiscal year 1975 was not used because of abnormal workloads related to the Vietnamese refugee airlift--Project New Life--thus the use of the 8-month period.

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Rates per ton-mile for such cargo are the same as the one-way charter rates for cargo moved in planeload lots.

SAVINGS THROUGH SHIPPING
BY SCHEDULED FLIGHTS

During the period August 1974 through March 1975, Flying Tiger Line, Pan American World Airways, and Seaboard World Airlines flew 42 one-way chartered cargo missions to 4 destinations which were also served by the same airlines scheduled commercial cargo service. (See enc. I.) DOD could have saved about \$425,000 in shipping costs by moving this cargo on the carrier's regularly scheduled flights. These savings would have been possible as a result of lower minimum weight requirements for cargo pallets moving on commercial flights and charges being based on the distance to the destinations of the pallets rather than the ultimate destinations of charter flights.

Weight requirements

The cargo versions of the DC 8 and B 707 aircraft--the types used on MAC charters--can carry 18 and 13 pallets of cargo, respectively. For rate-setting and payment purposes, CAB uses payload weights of 45 tons and 36.5 tons for these aircraft. These weights are referred to as the "available cabin load". Although MAC used all available pallet positions on its charter flights, as shown below, its average pallet weights and, consequently, its total cargo weight per flight were below the charter weight for which it was required to pay.

<u>Type</u> <u>air-</u> <u>craft</u>	<u>Minimum</u> <u>charter</u> <u>load</u> <u>(pounds)</u>	<u>Pallet</u> <u>positions</u> <u>available</u>	<u>Average pallet weight</u>	
			<u>Required</u> <u>(note a)</u>	<u>Achieved</u> <u>by MAC</u> <u>(note b)</u>
DC 8	90,000	18	5,000	3,524
B 707	73,000	13	5,615	3,065

a/Required in the sense that 18 or 13 pallets times these weights equals the available cabin load on which payment is based.

b/MAC's overall average pallet weight was 3,469 pounds.

Thus, MAC shipped only 3,469 pounds on an average pallet but paid for either 5,000 pounds or 5,615 pounds, depending on the type of aircraft.

On the other hand, if MAC uses scheduled flights, CAB requires DOD to ship a minimum of two pallets averaging 3,750 pounds. This 3,750-pound minimum is much closer to MAC's overall average pallet weight of 3,469 pounds. Consequently, the amount of unused capacity for which DOD must pay is much lower than under the charter contract.

Actual destination charges

DOD is required to pay for the full available cabin load from origin to final destination on chartered flights; however, cargo may be offloaded at intermediate enroute stops. On the Osan, Korea, route, for example, only 56 percent of the initial tonnage loaded at McChord Air Force Base, Washington, was actually destined for Osan. The remaining cargo was offloaded at Elmendorf, Alaska, or Yokota, Japan. Therefore, DOD was paying for unused capacity between Elmendorf or Yokota and Osan on these charter flights. Had the cargo been shipped by scheduled carrier, charges would have been based on the distance each pallet moved instead of the final destination of the aircraft.

Computation of DOD savings

Considering the opportunities for economy cited above, DOD could have saved about \$425,000 if it had shipped the cargo from the 42 charter flights by scheduled service. The estimated cost for each method of shipment is shown below.

<u>Method of shipment</u>	Estimated cost (note a)
Charter flights	\$1,527,906
Scheduled flights	<u>1,102,907</u>
Savings	<u>\$ 424,999</u>

a/Estimated costs are based on the CAB's approved military cargo rates, effective January 17, 1975. Costs are shown in detail in encs. II and III.

FUEL CONSERVATION

A total of about one million gallons of jet fuel could have been conserved by eliminating the charter flights shown below.

<u>Destina- tion</u>	<u>Type of aircraft</u>	<u>Fuel use per hour in gallons (note a)</u>	<u>Average flight time (hours)</u>	<u>Number of flights</u>	<u>Fuel used (gal- lons)</u>
Osan AB, Korea	DC 8	2,190	13.2	23	664,884
Ching Chuang Kang AB, Taiwan	DC 8	2,190	14.1	2	61,758
Yokota AB, Japan	DC 8	2,190	11.0	3	72,270
Rhein Main AB, Ger- many	DC 8	2,190	7.6	5	83,220
Rhein Main AB, Ger- many	B 707	2,015	7.5	<u>9</u>	<u>136,012</u>
Total				<u>42</u>	<u>1,018,144</u>

a/Based on average fuel consumption data provided by Flying Tiger Line for DC 8s and Pan American World Airways for B 707 aircraft.

Airline officials said our fuel savings estimates were conservative because they did not include return-flight fuel for MAC one-way charters. According to these officials, while the returning aircraft may have carried some commercial cargo, the total quantity of back-haul cargo is within the capabilities of their scheduled flights. Since these flights would not have been undertaken without the MAC charter, the fuel savings should be increased by the return-flight fuel. We agree with the airline position but show the conservative estimate because our review did not encompass a determination of expected savings on return flights.

SAVINGS IN CARRIER FLIGHT COSTS

For each charter flight, the air carriers incur direct expenses for fuel, oil, aircraft supplies, flight equipment

maintenance, and crew costs. Estimated costs for the 42 flights approximate \$597,000, as shown in enclosure IV.

The carriers could save these costs by eliminating the charter flights and carrying cargo on their scheduled flights. The total cargo carried by the respective airlines would remain unchanged. While the carriers' income would be reduced by the \$425,000 savings to DOD, this reduced revenue would be more than offset by the \$597,000 cost reduction to the carriers. The carriers' savings would be about \$172,000, less the drayage expenses they would incur to bring cargo into their aerial ports and to deliver it at destination. However, our estimate on the reduced costs to the carriers is conservative since it does not take into account the savings they would realize by eliminating return flights.

Flying Tiger, Pan American, and Seaboard World officials told us they are in favor of substituting their scheduled service for their MAC charter flights. They said their scheduled flights have the capacity to meet DOD requirements.

DEPARTMENT OF DEFENSE AND AIR FORCE COMMENTS

We discussed our report with DOD and Department of Air Force representatives. They generally agreed with the concept of diverting cargo from charter flights to commercial flights flown by the same carriers. However, they stressed that MAC's own aircraft are underutilized and, consequently, the amount of cargo moving by commercial airlift is limited.

We understand the Air Force's concern over utilization of the MAC fleet, and our conclusions and recommendations are directed only to that cargo which moves by commercial airlift.

CONCLUSIONS AND RECOMMENDATIONS

Shipment of DOD cargo on scheduled flights in lieu of chartered (one-way) aircraft provides an opportunity for DOD and air carriers to realize substantial savings. It also provides a means of reducing fuel consumption. We therefore recommend that, to the extent possible, DOD move its cargo on scheduled commercial flights instead of charter flights.

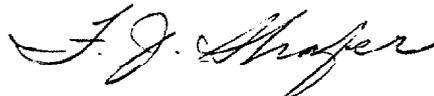
Section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a

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written statement on actions he has taken on our recommendations to the House and Senate Committees on Government Operations not later than 60 days after the date of the report, and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Office of Management and Budget; the Chairman, Senate and House Committees on Government Operations, Appropriations, and Armed Services; and the Secretary of the Air Force.

Sincerely yours,



F. J. Shafer
Director

Enclosures - 4

ROUTES FLOWN BY CHARTERED CARGO CARRIERSWITH PARALLEL COMMERCIAL ROUTESAUGUST 1974 TO MARCH 1975

<u>Carrier</u>	<u>Charter route</u>	<u>Parallel commercial route (note a)</u>	<u>Number of charter flights (note b)</u>
Flying Tiger Line	McChord AFB, Washington--Osan AB, Korea	Seattle, Washington--Seoul, Korea	23
Flying Tiger Line	McChord AFB, Washington--Ching Chuang Kang AB, Taiwan	Seattle, Washington--Taipei, Taiwan	2
Flying Tiger Line	McChord AFB, Washington--Yokota AB, Japan	Seattle, Washington--Tokyo, Japan	3
Seaboard World Airlines	Dover AFB, Delaware--Rhein Main AB, Germany	New York, New York--Frankfurt, Germany	5
Pan American World Airways	Dover AFB, Delaware--Rhein Main AB Germany	New York, New York--Frankfurt, Germany	9
Total			<u>42</u>

a/Under the method of commercial shipment considered in the survey, the carriers are responsible for pickup from and delivery to the designated MAC aerial ports.

b/Only one-way charter flights, which constitute the bulk of MAC's cargo charter activity, were considered in the survey.

COSTS OF CHARTERED CARGO AIRCRAFT

AUGUST 1974 TO MARCH 1975

<u>Destination</u>	<u>Type air craft</u>	<u>Mileage</u>	<u>Chartered load (tons) (note a)</u>	<u>Chartered ton-miles</u>	<u>Cost per flight (note b)</u>	<u>Number of flights</u>	<u>Total cost</u>
Osan AB, Korea	DC 8	5,620	45.0	252,900	\$41,739	23	\$ 959,997
Ching Chuang Kang AB, Taiwan	DC 8	6,300	45.0	283,500	46,789	2	93,578
Yokota AB, Japan	DC 8	4,930	45.0	221,850	36,614	3	109,842
Rhein Main AB, Germany	B 707	3,990	36.5	145,635	24,036	9	216,324
Rhein Main AB, Germany	DC 8	3,990	45.0	179,550	29,633	5	148,165
<u>Total</u>						<u>42</u>	<u>\$1,527,906</u>

a/Based on CAB's minimum charter loads and does not reflect tonnage actually carried.

b/Based on the current CAB-approved rate of \$.16504 per ton-mile for one-way military chartered cargo flights. Only one-way flights were used in the survey.

ENCLOSURE II

ENCLOSURE II

COST OF CARGO SHIPPED ON CHARTERED FLIGHTSIF SHIPPED BY COMMERCIAL FLIGHTSAUGUST 1974 TO MARCH 1975

<u>Chartered destination</u>	<u>Trip mileage</u>	<u>Total pallets</u>	<u>Total tons (note a)</u>	<u>Total ton- miles</u>	<u>Total cost (note b)</u>
Osan AB, Korea (note c):					
Elmendorf AFB, Alaska	1,460	18	37.300	54,458	\$ 8,988
Osan AB, Korea	4,160	16	33.560	139,610	23,041
Yokota AB, Japan	4,930	396	755.106	3,722,672	614,390
Osan AB, Korea	690	226	435.839	<u>300,729</u>	<u>49,632</u>
				<u>4,217,469</u>	<u>696,051</u>
Ching Chuang Kang AB, Taiwan (note c):					
Yokota AB, Japan	4,930	36	67.500	332,775	54,921
Ching Chuang Kang AB, Taiwan	1,370	24	45.000	<u>61,650</u>	<u>10,175</u>
				<u>394,425</u>	<u>65,096</u>
Yokota AB, Japan	4,930	54	101.856	<u>502,150</u>	<u>82,875</u>
Rhein Main AB, Germany:					
B 707	3,990	117	225.847	901,130	148,722
DC 8	3,990	88	167.291	<u>667,491</u>	<u>110,163</u>
				<u>1,568,621</u>	<u>258,885</u>
Total				<u><u>6,682,665</u></u>	<u><u>\$1,102,907</u></u>

a/Based on minimum required weight of 3,750 pounds per pallet. However, for 15 flights, the average pallet weight exceeded 3,750 pounds. In these instances, actual average pallet weight was used.

b/Based upon CAB-approved rate of \$0.16504 per ton-mile for military cargo shipped by scheduled flight.

c/Because of limitations in our source data, each enroute stop of a chartered flight had to be calculated as a separate commercial flight. For example, there was one flight from McChord AFB to Osan AB by way of Elmendorf AFB. This flight carried 18 pallets of cargo from McChord AFB to Elmendorf AFB but only 16 pallets from Elmendorf AFB to Osan AB.

SAVINGS IN CARRIER FLIGHT COSTS FROM
ELIMINATING CHARTERED CARGO FLIGHTS

<u>Destination</u>	Variable cost per mile (note a)	Number of miles	Number of flights	Total costs
Flying Tiger Line:				
Osan AB, Korea	\$2.8143	5,620	23	\$363,776
Ching Chuang Kang AB, Taiwan	2.8143	6,300	2	35,460
Yokota AB, Japan	2.8143	4,930	3	<u>41,623</u>
				440,859
Pan American World Air- ways:				
Rhein Main AB, Ger- many	2.8226	3,990	9	101,360
Seaboard World Airlines:				
Rhein Main AB, Ger- many	2.7643	3,990	<u>5</u>	<u>55,148</u>
<u>Total</u>			<u>42</u>	<u>\$597,367</u>

a/Based on costs provided to the CAB by the airlines for fuel, oil, aircraft supplies, flight equipment maintenance, and crew costs.