



COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

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RELEASED  
MARCH 20, 1979

The Honorable John M. Murphy  
Chairman, Committee on Merchant  
Marine and Fisheries  
House of Representatives

HSE 02700

ABC 5

Dear Mr. Chairman:

Your January 31, 1978, letter asked us to validate certain claims made by the Department of Defense (DOD) concerning improved service and savings being achieved under its Competitive Rate Program (CRP). You also asked that we look into forwarder operations and determine whether or not the rates offered under CRP are compensatory.

In our July 7, 1978, response we advised you of our preliminary findings with respect to the DOD claims. At that time, we also told you that we had been denied access to forwarder records which are essential in determining whether or not the rates were sufficiently high to return forwarders' costs.

Your August 7, 1978, letter requested us to continue our investigation into the forwarders' rate levels. We later met with the committee staff and agreed to an alternative approach to develop the desired information.

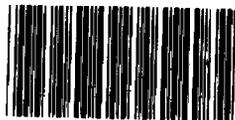
In the interest of more timely reporting, we have decided to divide our audit effort into two separate phases:

- The validation of DOD claims.
- The evaluation of rate levels.

Rather than waiting several months to complete work on the latter phase, we are reporting at this time on the first phase. We hope to issue another report by July 1979 which will deal solely with forwarder rates.

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COMPUTATION OF SAVINGS ACHIEVED  
ON PAST SHIPMENTS

DOD estimated that rate reductions obtained under CRP for traffic moving to and from Okinawa and Germany during the period January 1, 1975, through July 31, 1977, had resulted in savings of about \$25 million. The estimate was based on a comparison of forwarders' charges under CRP--actually billed or computed from information on the memorandum copy of the Government bill of lading--and the estimated costs that would have been incurred under the previous procurement method (the so-called "me-too" concept).

For the period January 1, 1975, through April 30, 1977, the forwarders had filed two sets of rates--one for CRP and the other for the me-too concept. In estimating what the forwarders' charges would have been for shipments through April 1977, DOD used these me-too rates and applied them to the tonnage actually moved. This application gave DOD an estimate of what the costs would have been if CRP had not been instituted. The estimated cost for each shipment was compared to the forwarders' charges and the difference between the cost and the charges was considered savings. It is important to note that DOD had scheduled information on each and every shipment moved during the period. Rather than employing sampling techniques, it had analyzed all shipments.

For the remainder of the period in question--May through July 1977--DOD used time series analysis (a trend line developed from approximately 5 years of me-too rates) to project what the rates would have been in the absence of CRP. DOD employed a computer program to develop this trend line. The projected rate given by the trend line was compared to the forwarders' charges on each shipment and the difference was identified as cost avoidance or savings.

We manually computed the trend line and obtained about the same results as the computer-developed program. Therefore, we concluded that the computer program was correct.

To test the accuracy of DOD's computation, we traced a significant number of shipments to insure that the forwarders' charges had been correctly scheduled and the appropriate rate was used to establish what the forwarders' charges would have been in the absence of CRP. In our opinion, the method

DOD used to determine savings is sound and its estimate of savings achieved for the period January 1975 through July 31, 1977, is accurate.

METHOD USED TO PROJECT SAVINGS  
ON FUTURE SHIPMENTS

In addition to its estimate of savings already realized as a result of CRP, DOD has stated that expanding the program worldwide on May 1, 1978, would save about \$54 million annually on future shipments.

DOD's estimate of savings was computed by projecting the forwarder rates that could be expected if CRP had not been instituted. Since no CRP rates had been filed at the time of DOD's estimate, it was also necessary to establish rates anticipated under CRP. This was done by taking the estimate of rates expected if CRP had not been implemented less 17 percent--the reduction experienced during the trial of CRP on Okinawa traffic. The two sets of rates were then applied to tonnage projections to determine the total estimated savings.

Using the least squares trend line technique, a trend line was developed using a computer program to project the rates that could be expected if CRP had not been implemented. The trend line was based on approximately 5 years of historical rates.

Once this noncompetitive rate was established, it was necessary to develop CRP rates since no such rates had been offered at the time DOD made its savings estimate. In developing these rates, DOD used the noncompetitive rate less 17 percent. This was the reduction experienced when CRP was tested on traffic between the continental United States and Okinawa. We compared the CRP rates computed by DOD with those later filed by the forwarders and found the 17 percent to be conservative. In most instances, the CRP rates actually filed were less than those DOD used to calculate future savings.

We manually computed the trend line and attained about the same results as the computer-developed trend line. Therefore, we conclude the computer program was correct.

The methodology DOD used for estimating future savings was acceptable and the dollar savings projected represented a valid estimate at the time DOD made its

calculations. However, the estimate is based on the assumption that all traffic was tendered to and handled by forwarders offering the lowest CRP rate. At the time we made our analysis, not enough payment records were available for us to determine how frequently other than low bidders were used. To the extent that tonnage was tendered to higher cost forwarders for one reason or another, the estimate would have to be revised downward.

#### METHOD USED TO MEASURE SERVICE IMPROVEMENTS

In addition to dollar savings, DOD officials claimed that implementing CRP had significantly improved service. They said (1) transit times were reduced by an average of 5 percent, (2) required delivery dates were met 88 percent of the time contrasted to 57 percent prior to initiation of CRP, and (3) the frequency and amount of loss and damage was reduced.

After reviewing documentation supporting these claims, we found some problem with the methodology used to measure the improvements in service.

#### Transit time

DOD's claim of improved transit time was based on analysis of transit times shown on a sample of paid Government bills of lading received from the military finance centers. The bills covered 2,271 of the 44,585 shipments which moved during the period May 1 through October 31, 1977. The sample represented all shipments for which complete payment and movement data was available at the time DOD made its analysis.

The transit time actually experienced on each of the 2,271 shipments was compared to average transit time published in DOD's Personal Property Traffic Management Regulations for the origins and destinations involved. These average times in the regulation were established on the basis of information developed on shipments moved in the 1973 and 1974 time frame. It was necessary for DOD to use the times shown in the regulation because it did not maintain transit time information on shipments moving just prior to May 1977. The regulations contained the latest data available on shipments moved under the me-too concept.

The differences in transit times actually experienced and those shown in the DOD regulation averaged 2-1/2 days--the actual transit time being the shorter. This represented the 5-percent reduction in the overall transit time claimed by DOD.

Statistics on actual transit times experienced after CRP were accurate and well-documented. However, instead of comparing actual transit times just prior to CRP with those experienced after, DOD used averages established some 3 or 4 years earlier to measure improvement. Therefore, in the absence of more current data on transit times being achieved just prior to CRP, we cannot say that all or any part of the improvement in transit time resulted solely from implementing the program.

#### Delivery dates

From its sample of 2,271 shipments made under CRP, DOD found that 257--about 12 percent--missed the desired or required delivery date. This means the delivery date was met on 88 percent of the shipments in the sample, and DOD used this figure to evaluate delivery performance under CRP.

To establish the frequency that delivery dates were met prior to CRP, DOD took the total number of shipments worldwide during calendar year 1974--the latest available information--and divided it into the number of shipments which had met the required delivery date. The result--57 percent--represented the overall percentage of shipments which arrived on time. DOD's claim of improvement in meeting delivery dates was based on the comparison between this figure and the 88 percent experienced after CRP was instituted.

We have several problems with the methodology used by DOD. First, it compared current performance with service received some 3 or 4 years ago. Therefore, we don't know whether or to what extent CRP influenced the improved service. Factors such as changes in participating forwarders and improved operating techniques in the past few years could have had an impact on the frequency of ontime deliveries.

Second, DOD compared current performance on specific channels with worldwide averages. It could be that channels other than Germany and Okinawa caused these averages of on-time deliveries to be distorted. Using DOD's methodology, there is no way to tell whether service actually improved between two specific points as a result of CRP.

Frequency of loss and damage

DOD claimed that there was a lower frequency of loss and damage incidents under CRP. This claim was based on a comparison between the ratio of loss and damage experienced worldwide in 1974 and the ratio experienced on shipments moved under CRP between November 1976 and October 1977. The ratios were developed by dividing the number of loss and damage occurrences reported by the total number of shipments involved.

DOD says that loss or damage claims were filed on 13 percent of its shipments worldwide in 1974. In contrast, only between 8.7 percent and 9.7 percent of the shipments moving under CRP in the period cited above had loss or damage occurrences reported.

We were unable to verify the accuracy of the 13-percent worldwide ratio because the documents containing the data were no longer available. With respect to the ratio on current CRP shipments, DOD officials indicate that it is probably inflated since it represents reported incidents, not claims actually filed. The officials say that claims are not always filed for every incident reported and that, in the final analysis, the ratio of loss and damage on shipments after CRP would be something less than the 8.7 percent to 9.7 percent mentioned earlier.

We have other problems with the methodology used by DOD. As with transit time and delivery dates, DOD used dated information to compare performance before and after CRP. The time lapse makes it impossible to say with any assurance that CRP was the only or primary reason for improvement.

Also, DOD compared loss and damage experience worldwide with the frequency of such incidents on a few specific channels. For various reasons, these channels historically could rank very high or very low in terms of loss and damage. Perhaps something about these channels makes shipments vulnerable to loss and damage. Therefore, any comparison of specific channel performance to worldwide averages cannot, in our opinion, be relied on to accurately measure performance.

AGENCY COMMENTS

We discussed our findings with DOD officials. They agreed that we made a fair and accurate presentation of the facts and they had no major disagreements with our findings. They stressed that they did the best job they could with the

information that was available at the time the DOD estimates were prepared.

CONCLUSIONS

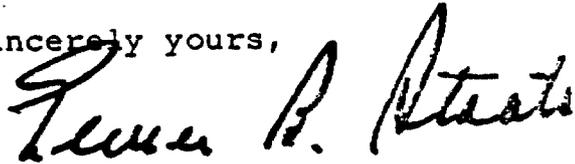
We believe the methodology DOD used to calculate savings resulting from CRP was acceptable, and its estimate of dollar savings was as accurate as possible considering the information available at the time of preparation. The estimate of savings is contingent on the tonnage being handled by the forwarders offering the lowest CRP rate. To the extent that higher cost forwarders are actually used, the estimate of savings would have to be revised downward.

With respect to claims of improved service, we have problems with the methodology used to measure such improvements. For that reason, we are unable to verify DOD's claim of improved service.

As arranged with your office, this report will be released for distribution to interested parties in 30 days unless you publicly announce its contents earlier.

We will be glad to discuss our findings in detail if you desire.

Sincerely yours,



Comptroller General  
of the United States