

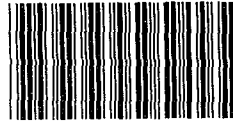


UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D C 20548

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LOGISTICS AND COMMUNICATIONS  
DIVISION



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BC - 0058

MARCH 28, 1979

B-163928

The Honorable Harold Brown  
The Secretary of Defense

AGC 00005

AGC 00378

Dear Mr. Secretary:

This report discusses our review of the [military services' accountability and management controls over fuel supplied by the Defense Logistics Agency in Korea and the Philippines]. We identified a lack of control and accountability for fuels and are making recommendations which, if properly implemented, should correct these conditions.

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We tested the controls over selected fuel shipments received by the U.S. Army Petroleum Distribution System, Korea; the U.S. Naval Supply Depot in the Philippines; the 2nd Infantry Division and Pusan Supply Point, Eighth U.S. Army, Korea; and Clark Air Force Base, Naval Air Station, and Naval Public Works Center in the Philippines. We talked with responsible officials, reviewed regulations and documents, and we participated in taking physical inventories of fuel. Our review covered the period of operations from October 1977 to June 1978.

OVERVIEW

We found weaknesses in management controls over transactions and documents used to support monthly accountability reports at the Naval Supply Depot, Philippines, and at the Army Petroleum Distribution System, Korea (PDSK). At the Naval Supply Depot, we identified 465,000 gallons of fuel which were not accounted for when we attempted to reconcile fuel receipts and issues with inventories. Also, inventory records did not accurately reflect quantities of fuel onhand because they were not current. In addition, personnel (1) failed to record or improperly measured receipts, (2) used improper inventory taking procedures, and (3) allowed fuel control documents to be altered without appropriate explanation.

Military related  
Federal property management  
Records  
Crude oil

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At PDSK, inventory levels were questionable because unreliable equipment, supplies, and methods were used to determine them. Also, standard operating procedures for preparing monthly bulk petroleum terminal accounting summaries did not exist and receipts from customers were not always obtained.

Also, fuel in-transit in Korea from PDSK to the receiver--as much as a million gallons at any one time--was not accounted for by either the supplier or the receiver. Also, losses during transit of the fuel above the allowable tolerances generally were not investigated.

One large customer--the 2nd Infantry Division--did not properly document or have adequate control over its receipt and issue of fuels or inventories. Initially, we found that 432,000 gallons of fuel were either not accounted for or not supported by receipt or issue documents when we attempted to reconcile fuel records with physical inventories. Using the figures shown on the accountability reports for January 26 to June 14, 1978, we found that the inventories reported as of January 26, 1978, were misstated by 110,000 gallons. Later, after (1) an extensive and time-consuming research for valid documentation, (2) acceptance of issues to and from the Division's two service stations based on reconciliations not supported by official documents, and (3) finding and verifying additional unrecorded and/or unreported receipt and issue documents, we concluded that the inventories were misstated by 60,000 gallons.

The Division records were, in our opinion, so inadequate that it was not possible for us or the Division to make an accurate, supportable accounting of its fuel. Some other problems noted were minor in relation to the quantities of fuel involved; however, they may be indicators of system-wide weaknesses which could provide opportunities for mismanagement and fuel diversion. Many of the problems have been discussed in our prior reports. (See enc.)

Local officials took some actions which, if properly implemented, should improve the management, control, and accounting for fuels at the activities reviewed. (See pp. 10 and 11.) In addition, we are making a number of additional recommendations, which if effectively implemented, should result in needed improvements to the management of fuels in the Department of Defense. (See p. 13.)

BACKGROUND

The Defense Fuel Supply Center is designated as the integrated material manager for bulk petroleum within the Department of Defense and is responsible for worldwide supply and distribution, including fuel for ground, sea, and air vehicles and equipment. The Defense Fuel Supply Center primarily provides fuel for the Army, Navy, and Air Force and has worldwide responsibility for wholesale bulk petroleum products until delivery to point of sale. Fuel contract requirements for the Philippines and Korea in 1978 were 263 and 109 million gallons, respectively.

In the Philippines, the Naval Supply Depot is responsible for managing fuels for Defense Fuel Supply Center and for providing fuel to Air Force and Navy units, including U.S. ships at sea. Fuel is stored at Naval Supply Depot in 110 tanks with capacity, including interconnecting pipelines, of about 108 million gallons.

PDSK is responsible for managing fuels in Korea for the Defense Fuel Supply Center and providing fuels to authorized United Nations Command/U.S. Forces, Korea, customers. Fuels are stored and distributed from seven Army-owned-and-operated terminals. There are 81 tanks with bulk petroleum storage capacity of about 39 million gallons.

NAVAL SUPPLY DEPOT AND PETROLEUM  
DISTRIBUTION SYSTEM, KOREA, RECORDS

The Defense Fuel Supply Center uses monthly Bulk Petroleum Terminal Accountability Reports, submitted by the Naval Supply Depot and PDSK to carry out its managerial responsibilities. Those reports were generally supported by receipt and issue documents. However, in analyzing those reports, we identified weaknesses in controls over transactions and documents.

We took physical inventories of all fuels onhand at the Naval Supply Depot on May 21, 1978. Using receipt and issue documents from May 1 to 21, we reconstructed the inventory balances to May 1, 1978. We compared this with fuels recorded as onhand in the Naval Supply Depot records as of May 1, 1978. Our comparison is presented below:

<u>Fuel</u>	<u>GAO</u>	<u>Navy</u> (gallons)	<u>Navy overages</u>
Aviation gasoline	691,404	705,306	13,902
Jet propulsion:			
Fuel #4	6,009,906	6,018,012	8,106
Fuel #5	21,621,012	21,730,758	109,746
Motor gasoline	1,183,518	1,194,522	11,004
Diesel	36,106,812	36,332,772	225,960
Navy special fuel	<u>7,071,213</u>	<u>7,167,972</u>	<u>96,759</u>
 Total	 <u>72,683,865</u>	 <u>73,149,342</u>	 <u>465,477</u>

These differences were explained by:	<u>Gallons</u>
--Failure to update inventory records to accurately reflect reduced quantity of fuels in pipeline interconnecting storage tanks.	321,048
--Erroneous inventory measurements, which caused water to be measured and recorded as fuel.	100,691
--Unaccounted for difference (this was within permitted tolerances).	<u>43,738</u>
 Total	 <u>465,477</u>

In other instances, the Naval Supply Depot:

- Failed to record or improperly measured receipts of fuel.
- Did not notify inventory takers of fuel movements underway during a weekly inventory taking.
- Altered fuel control documents without appropriate explanations.

We also found that the closing inventories reported by PDSK included quantities for the Trans-Korean pipeline, which consistently exceeded the pipeline capacity.

Trans-Korean Fuel Pipeline Quantities

<u>1978</u>	<u>Recorded</u>	<u>Capacity</u>	<u>Inventory overstatement</u>
	----- (gallons) -----		
February	5,777,268	5,641,744	135,524
March	5,732,412	5,641,744	90,668
April	5,574,826	5,641,744	106,082
May	5,737,412	5,641,744	95,668
June	5,741,148	5,641,744	99,404

After our review, PDSK said that the pipeline capacity was recalculated to be 5,685,708 and that we had not considered 51,600 gallons of fuel in the Korean Oil Company pipeline, which PDSK had accounted for. Assuming these quantities were correct, the errors in the pipeline inventories ranged from an understatement of approximately 5,000 gallons to an overstatement of 40,000 gallons.

Also, PDSK

--used unreliable gauging equipment and supplies to determine the amount of fuel in some storage tanks and

--did not have standard operating procedures for preparing bulk petroleum terminal accounting summaries, as military regulations require.

Because of these errors, inventories were both overstated and understated on monthly reports of fuel transactions, and incorrect fuel information was reported to the Defense Fuel Supply Center.

FUEL IN-TRANSIT TO MILITARY  
SERVICE CUSTOMERS

PDSK officials estimated that approximately 1 million gallons of fuel are in-transit and unaccounted for at any one time. This fuel is in-transit in tank cars from PDSK terminals to various organizations of the Eighth U.S. Army for periods of between a few days to a month or more. At the time of shipment, PDSK drops accountability for the fuel. Upon receipt, the Army activity is supposed to account for the quantity it receives. Any difference between quantity shipped and quantity received within the transportation loss tolerance is not accounted for nor is it required to be.

We found that gains or losses above the allowable limit have not been investigated by either PDSK or the Eighth Army customers. Examples of these conditions are shown in the following table.

In-transit Gains and Losses

Type of fuel	Dates		Quantity		Gain/ loss (-)	Over toler- ance
	<u>Shipped</u>	<u>Received</u>	<u>Shipped</u>	<u>Received</u>		
			(gallons)			(percent)
Gasoline	3/03/78	3/08/78	10,108	9,087	-221	342
Gasoline	5/03/78	5/13/78	8,976	9,851	875	1,844
Jet	3/14/78	3/19/78	10,101	9,953	-148	196
Jet	5/06/78	5/18/78	9,913	10,015	102	104
Diesel	1/19/78	1/20/78	10,173	10,260	87	70
Diesel	3/22/78	3/23/78	10,157	10,256	99	94

The Army is billed for the quantity shipped and there is no systematic matching of receipt and shipment documents by either PDSK or the Eighth Army which would act as an independent control to identify these gains or losses.

Regulations do not require Eighth Army customers to return signed receipt documents to the shipping terminals; however, in order to insure an audit trail, PDSK published procedures instructing customers to do so. However, many signed receipts were not returned. Officials at one terminal estimated that as of July 14, 1978, over 3.7 million gallons of fuel issued were not supported by signed receipts.

The failure to obtain signed receipts for all fuel shipments provides no assurance that the fuel was received by the proper customers. Additionally, the failure of the Eighth Army to control and match receipt and shipment documents prior to payment eliminates accounting control, thereby permitting payment without any assurance of receipt of the quantities paid for. Furthermore, this failure, in our opinion, avoids one of the basic tenets of the stock fund concept, which is to bring about a state-of-cost consciousness on the part of the military departments. Such a state cannot be attained if accounting controls are absent from the transactions.

Without proper accountability requirements, we believe-- and PDSK and Eighth Army officials concurred--that there are opportunities for diversion of in-transit fuel.

CONTROLS OVER FUEL AFTER RECEIPT  
BY MILITARY SERVICES CUSTOMERS

The 2nd Infantry Division, Eighth U.S. Army, operates its own petroleum supply point, with a storage capacity of over 1.7 million gallons. It is responsible for the management, receipt, and issuance of petroleum products to the Division and to other support units and activities.

At the time of our review, accountability reports and supporting records at the Division, which reported receiving over 9.4 million gallons of various fuels between November 1977 and May 1978, were generally unsupportable. A number of receipt documents were missing and the quantities did not agree with those shipped to the Division by PDSK. Many documents supporting issues were inaccurate, unsigned, improperly prepared and, in some instances, missing. Reported ending inventory quantities frequently differed from those used at the beginning of the subsequent period.

Using the Division reported physical inventories as of June 14, 1978, and the receipts and issues reported on the accountability reports, we reconstructed the inventory balances to the period ending January 26, 1978. We found the diesel fuel and gasoline reported inventories were overstated by approximately 106,500 gallons. This indicated a loss or unaccounted fuel; whereas the reconstructed inventory for jet fuel, a highly volatile fuel, showed a gain of slightly over 3,000 gallons. These losses exceeded the tolerances allowed by Army regulations and the gain in jet fuel is abnormal because of its volatility.

Since the results using the reported figures showed a net loss of over 100,000 gallons, we reconstructed the inventories for the same period using the physical inventories taken by us and the receipt and issue documents which the Division identified as the documentation supporting its accountability reports. This indicated that the Division's fuel inventories as of January 26, 1978, were overstated by 289,000 gallons. This represents a reported overstatement or loss of 123,000 and 237,000 gallons of fuel and gasoline, respectively, and a reported understatement or gain of 71,000 gallons of jet fuel.

Because of the significance of the indicated losses, we and the Army performed extensive and time-consuming research in an effort to find and identify additional receipt and issue documents or obtain credible explanations.

In an effort to account for and reconcile these differences, we attempted to identify receipts and issues which had not been recorded or that had been recorded erroneously. The Division had reported issues of 5,359,271 gallons; however, we could only identify documents for 4,987,883 gallons. Subsequently, in response to further inquiries, we identified 300,347 gallons of fuel issued to the two Division service stations without prescribed documentation. We found the Division had no documentation for the remaining reported issues of 71,041 gallons of gasoline and jet fuel. In addition to this, we later found unrecorded documents for the issuance of 71,921 gallons of diesel fuel.

A comparison of quantities shipped by PDSK and gallons received by the Division from November 1977 to May 1978 showed that the Division did not have receipt documents for 172,192 gallons of fuel. After further search, the Army subsequently located and furnished documents representing 129,280 gallons. The Army could not document the remaining 42,912 gallons.

In addition to our inability to reconcile physical inventories with available documentation, we found numerous instances where beginning inventories on monthly fuel reports did not agree with ending inventories previously reported. The Division stated the ending inventory was obtained by physically measuring the quantity of fuel in the storage tanks. Two examples are shown in the following chart.

<u>Inventory</u>	<u>Diesel</u>	<u>Gasoline</u>
	(gallons)	
Closing balance as of 02-23-78	1,063,573	247,943
Opening balance as of 02-24-78	<u>940,731</u>	<u>240,459</u>
Difference	<u>122,842</u>	<u>7,484</u>

Regulations require that the beginning inventory on the fuel reports be the ending inventory for the prior period.



In the above example, from February 24, 1978, to March 30, 1978, the Division reported a diesel fuel handling loss of 1,732 gallons by using the beginning inventory of 940,731 gallons. However, if it had used a beginning inventory of 1,063,573 (the ending inventory of February 23, 1978), the computed loss would have been 124,574 gallons. This quantity would have exceeded the allowable loss by 111,526 gallons, requiring an investigation to determine the cause of the shortage. Division officials were unable to explain why these discrepancies existed.

Based on these efforts to establish the inventories prior to our physical inventories and to validate receipts and issues, it was, in our opinion, possible to report a variety of transactions and inventories depending upon which set of figures the reporting organization chose to use at the time of reporting.

The Division also used several questionable practices in accounting for receipt and issue of fuel. For instance:

- Many receipt documents were not signed and did not indicate quantities received as required by regulations.
- Discrepancy reports had not been prepared as required when fuel received differed from amount shipped.
- Fuel was transferred to an Army gas station by the Division without formal issue documents.
- Fuel tankers were dispatched to field units without formal issue documents to account for fuel issued to the tanker.
- Some issue documents lacked necessary signatures or data on quantity.
- Some fuel issue documents for charging customers were processed untimely.

Some of the problems we found were also noted by PDSK during its inspections of the Division's fuel activities in August 1977 and January 1978.

#### OUR PRIOR REPORTS

Prior reports listed in the enclosure identified the need for increased emphasis on fuel accountability and

control. Many of the deficiencies found in our current review were similar to those reported earlier. These include lack of conformance to prescribed accounting procedures and weaknesses in controls over transactions and related documents.

Recommendations made to the Secretary of Defense in prior reports included:

- Directing the Secretary of the Army to enforce the Army's existing procedures for fuel control and accountability.
- Having the Army Audit Agency perform an Army-wide audit of ground vehicle petroleum management.

As noted in a previous Defense response to us, the management of a commodity as important as petroleum warrants priority attention at all levels of responsibility. The Deputy Assistant Secretary of Defense responded to our July 1977 report on the continuing need to establish guidelines for controlling and accounting for ground vehicle fuels stating that "the principal problem lies in inadequate command attention. This is manifest in the failure to detect and correct noncompliance with existing procedures."

AGENCY COMMENTS AND ACTIONS

Naval Supply Depot and Army Petroleum Distribution System, Korea, officials concurred with many of our findings and have taken corrective action or agree to do so. To correct problems noted, Naval Supply Depot officials:

- Removed about 422,000 gallons of fuel, valued at \$152,000 from its inventory records to adjust for water in storage tanks which had been recorded as fuel and reflected the correct quantities of fuel in pipelines interconnecting the tanks.
- Held training classes on proper procedures for taking inventory of fuel and directed that these procedures be followed.
- Directed that fuel receipts be properly measured and recorded.
- Directed that fuel documents disclose who made any alterations and why.

- Changed forms and procedures to facilitate entering current information on its fuel inventory records.

In addition, PDSK said it would:

- Use the calculated capacity of the pipeline as a management tool for evaluating the calculated linefill. Deviations will be investigated to determine causes.
- Replace deficient gauging equipment and supplies.
- Revise standard operating procedures for gauging.
- Prepare a standard operating procedure for preparation and modification of monthly accounting summary reports.

Subsequent to our review, the 2nd Infantry Division claimed that they made a complete reconciliation of bulk petroleum accountable records and that the reconciliation indicated that their recordkeeping procedures were sufficient to permit them to reconstruct reliable data for the 6-month period from December 1977 to May 1978. They further stated that when adjusted by receipt and issue documents, inventories were within allowable handling losses.

We reviewed the 2nd Infantry Division's reconstruction methodology and performed selected tests to determine the degree of reliability we could place on the Army's work. We believe that the Army's reconstruction of fuel inventories cannot be relied upon as completely reflecting the receipts and issues during this period. The Army, in reconstructing the inventory, did not confirm receipts with PDSK shipments but instead relied on an unofficial receipt log maintained by 2nd Division personnel. Also, 2nd Division personnel said they identified and obtained missing issue documents by using their informal log books without verifying that the quantities issued had been reconciled with customers' receipt logs. In addition, our test of the reconstruction showed a mathematical error in receipts for jet fuel, that when adjusted, resulted in a gain over the allowable tolerance.

Additionally, in the Division's reconstruction, gains or losses should have been computed on a monthly basis and not on a 6-month total. By doing the reconstruction monthly, reports of survey would have been required for the gasoline

losses and investigation considered for large overages. An example of these conditions is shown in the following table.

	<u>Gasoline</u>	<u>Diesel</u>	<u>Jet fuel</u>
		(gallons)	
Beginning inventory as of May 1978	286,865	1,058,969	12,290
Receipts	<u>129,180</u>	<u>212,575</u>	<u>139,392</u>
Total	416,045	1,271,544	151,682
Issues	<u>122,490</u>	<u>326,119</u>	<u>128,382</u>
Ending inventory as of May 25, 1978	293,555	945,425	23,300
Physical inventory	<u>276,964</u>	<u>966,719</u>	<u>28,104</u>
Gain or loss (-)	<u>-16,591</u>	<u>21,294</u>	<u>4,804</u>
Allowable loss	-4,160	-6,357	-1,517

The unexplained loss of 16,591 gallons of gasoline and the gains of 21,294 gallons of diesel and 4,804 gallons of jet fuel in 1 month indicates that the Army's attempts at reconstruction resulted in excessive gains and losses for the month of May which raises serious questions on the reliability of the entire reconstruction. In requesting the Eighth Army's authority to prepare revised Inventory Adjustment Reports for the 6-month period (December 1, 1977, through May 25, 1978), the Division stated that, as a result of a GAO audit, an indepth review and analysis has been completed and it has been determined that the original monthly reports for the period were inaccurate, and the reconstruction of monthly Inventory Adjustment Reports is not feasible because of

--questionable accuracy of monthly physical inventories and

--an inability to precisely identify inventory transactions to the correct month, based upon the monthly inventory cutoff dates.

Accordingly, the 2nd Division therefore concluded that reconstructed monthly Inventory Adjustment Reports could not withstand the test of an audit.

RECOMMENDATIONS

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In view of the unexplainable significant gains that resulted from both Army and our reconciliations, we recommend that you require division commanders or similar levels in the other military departments and agencies to investigate and review gains as well as losses that exceed the prescribed tolerance.

To insure that corrective actions agreed to by the Navy Supply Depot, Subic Bay, and the Petroleum Distribution System, Korea, officials are implemented effectively, we recommend that these activities be audited internally within the next 6 months.

To improve accountability and control over in-transit fuel, we recommend that you direct the Director, Defense Logistics Agency, to revise the system and procedures for fuel accountability to require that title of and accountability for in-transit fuel remain with the Defense Fuel Service until receipt and acceptance by the military departments or activities.

To improve the Army's management of, accountability for, and control over fuel it receives, we recommend that you direct the Secretary of the Army to:

- Revise the Army's system and procedures to establish controls that will require an accurate accounting for and maintenance of all receipt and issue documents from initial receipt of fuel from Defense Fuel Service to ultimate issue to the user.
- Require that all personnel responsible for the receipt, accounting for, or control of fuel receive adequate training in the
  - techniques of and use of equipment for taking physical inventories;
  - preparation, control, and maintenance of documentations;
  - recording and summarization of transactions; and
  - preparation of accountability reports, discrepancy reports, and billings to recipients of fuel.

As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement of actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee 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 would appreciate being advised of the actions as well.

We are sending copies of this report to the Director, Office of Management and Budget; the Chairmen, Senate and House Committees on Armed Services; and the other Committees mentioned above.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "R. W. Gutmann".

R. W. Gutmann  
Director

Enclosure

REPORTS ON PETROLEUM MANAGEMENT

"Continuing Need to Establish Uniform Guidelines for Controlling and Accounting for Ground Vehicle Fuels,"  
LCD-77-220, July 20, 1977.

"Lessons in Management: Problems in Petroleum Procurement and Distribution in Southeast Asia," LCD-76-215, March 15, 1976.

"Improvements Needed in Controls and Accounting for Ground Vehicle Petroleum," LCD-75-218, May 20, 1975.

"Bulk Fuels Need to be Better Managed," LCD-74-444, April 8, 1975.

"Investigation of the Handling and Control of Petroleum Products in Southeast Asia," B-163928, July 28, 1970.

"Investigation in Thailand of the Systems for Distributing Petroleum, Oil, and Lubricants and for Processing Related Documentation," B-163928, January 9, 1969.