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UNITED STATES GENERAL ACCOUNTING OFFICE
INTERNATIONAL DIVISION
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FEB 6 1973

Commander in Chief, Pacific
Camp H. M. Smith
Aiea, Hawaii 96701

Dear Sir

In November 1972, the General Accounting Office completed a limited survey to see how well the military services were managing tire rebuild programs in Korea and Vietnam. Our objective was to see whether savings could be realized by increasing the use of recapped tires and cutting back on new tire usage.

During our survey we visited major Army, Air Force and contractor activities in Korea and Vietnam where tires were being maintained, turned-in and inspected, recapped, and disposed of. We reviewed procedures and records, interviewed responsible officials and made selective tests to observe first-hand how the tires were being managed.

Our survey showed that there is little command level supervision over tire inspection, rebuild and disposal activities. If the commands were to correct even the most obvious discrepancies noted by GAO, substantial savings could be realized. In Korea alone, these savings would be in the range of \$600,000 or more annually--a sum equal to about one-third of the total now spent for tires in Korea.

Poor management of tire programs has been a topic of GAO reports in the past. Our most recent report--"Opportunity for Improving Results of Tire-Rebuilding Programs in Europe" (B-159200) dated January 8, 1971--pointed out significant management weaknesses which, when corrected, resulted in substantial savings in Europe. Since the conditions in Europe seemed universal, we suggested system-wide improvements to ensure the use of recapped tires wherever possible.

The Department of Defense (DOD) agreed and designated the Army as the integrated manager for a DOD rebuild program. In that capacity, the Army proposed a DOD-wide management system with uniform standards and reporting procedures to ensure maximum rebuilt-tire utilization. The Army implemented this proposed system for all major commands in early FY 1971, but the other services have not yet done so.

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The two major components of this system are (1) acceptance of a 75-percent criterion for rebuilt tire utilization, and (2) a semiannual report reflecting tire usage and the extent of retreading accomplished. Such a system with a definitive target and a method of informing all management levels of the program's effectiveness is essential if real savings are to be obtained.

The system, as implemented by the Army, has been successful to a degree as evidenced by the fact that the percentage of recaps used to meet total requirements (worldwide) has risen from 40 percent for the first half of FY 71 to 69 percent for the second half of FY 72. Savings attributed to the program for the same period totaled \$19.2 million. Even so, the huge potential in rebuilt tires has hardly been tapped. Review of the individual command performances shows a great disparity in participation ranging from a few really active elements which contribute the bulk of the performance to a major portion of elements contributing token or no participation at all in retread activity. This disparity may explain why so many of the same management weaknesses found in Europe several years ago still exist in Korea and Vietnam today.

The results of our surveys in Korea and Vietnam are discussed below.

KOREA

Need for improved surveillance and inspection of tires

We found that the Army and Air Force in Korea had not established adequate surveillance and inspection procedures for classifying tires turned in by using units. As a result, many serviceable and recappable tires were being sent to property disposal activities and sold as scrap rubber at a fraction of a cent per pound. We estimated that between \$250-300,000 annually could be saved if all recappable tires (for which in-country recap capability presently exists) were properly classified at time of turn-in. In addition, a substantial one-time savings could be realized by recapturing serviceable and recappable tires now in the various property disposal holding activities in Korea.

U.S. Army management of tires in Korea

During FY 1972, the U.S. Army in Korea used about 34,700 tactical and commercial tires valued at about \$1.8 million. Nineteen tire sizes, which the Army recaps in-country, accounted for 26,700 of the total

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number consumed^{1/}. Of this total only 54 percent valued at about \$125,000 were recapped tires. These tires had been recapped by a Korean company under a contract let by the Army's Korea Procurement Agency (KPA).

Inadequate tire inspections at
turn-in points

Army Regulation 750-36 stresses the need for diligent inspection procedures at all levels of command to recapture all repairable tires. Our survey disclosed that the Army command in Korea had not set up adequate procedures for classifying tires turned in by using units. As a result, the 75-percent recap goal was not being reached and many serviceable and recappable tires were being disposed of.

There are two Army tire turn-in points in Korea--the 20th Support Group for commercial tires and Camp Carroll Depot for tactical tires. Camp Carroll only recently became a turn-in point replacing the ASCOM Depot which was phasing out. In visiting turn-in points we expected that Army personnel would be inspecting and making disposition on tires received from using units. This would involve having available appropriate Army inspection instructions, personnel with tire inspection expertise, and necessary equipment such as tire spreaders. We found that this was not the case. Army personnel were not making inspections of turn-in tires. Instead, they had delegated this responsibility to the Korean contractor that was performing the recapping services.

We observed a contractor inspection and pickup of tires at the 20th Support Group, ASCOM Depot and noted that the inspection was quite cursory. The contractor was selecting only those tires that looked like they were in relatively good condition. Tires rejected by contractor were automatically processed to PDO by ASCOM personnel.

Recappable tires observed
in property disposal yards

We followed up our observation of contractor inspection procedures by visiting Army Property Disposal Offices (PDO) at ASCOM and Pusan, Korea. We wanted to get a feel for how many recappable tires were being disposed of. At the ASCOM PDO we were accompanied by a KPA tire inspector and the local national ASCOM tire inspector. The results of our inspection are shown below.

^{1/} The 8,000 tires consisted mostly of high dollar value tires used on construction type equipment. There is no present capability for recapping these tires in Korea and only one of these tire sizes, the 29.5 x 29, is shipped back to the United States for recapping. The potential for overseas recapping of these tires is discussed on page 7 of this report.

<u>Tire size</u>	<u>Inspected</u>			<u>Considered recappable</u>	
	<u>Lot size</u>	<u>Number</u>	<u>% of lot</u>	<u>Number</u>	<u>% of sample</u>
Various - Commercial	780	150	19.2	116	77.3
700 x 16 - Military	216	34	15.7	30	88.5
1100 x 20 - Military	<u>384</u>	<u>55</u>	<u>14.3</u>	<u>38</u>	<u>69.0</u>
	<u>1,380</u>	<u>239</u>	<u>17.3</u>	<u>184</u>	<u>77.0</u>
Various	Unknown <u>1/</u>	67	Unknown	52	77.6
Various	Unknown <u>1/</u>	20	Unknown	15	75.0
900 x 16	Unknown <u>1/</u>	<u>21</u>	Unknown	<u>12</u>	<u>57.1</u>
		<u>108</u>		<u>79</u>	<u>73.1</u>
TOTAL		<u>347</u>		<u>263</u>	<u>75.8</u>

1/ Large tire piles—not segregated by size.

The high percentage of tires considered recappable indicated a breakdown in procedures and practices for recapping tires. Appropriate technical inspections had not been made prior to sending the tires to the disposal yard. In addition to the tires inspected, we noted that many of the vehicles in the PDO were equipped with new or serviceable tires. We also saw two large piles consisting of tires with the wheels still attached. Many were still inflated and appeared quite serviceable.

We also observed and photographed large numbers of apparently recappable tires during our visit to the Pusan PDO. We were accompanied by an Army tire inspector during our inspection.

In our sample, at the ASCOM PDO, we found that excessive tread wear was a major reason for rejecting tires as non-recappable. About half of the tires inspected were turned down because tires were not taken off the vehicles with enough tread thickness left to permit recapping.

It seems to us that this problem could be remedied by adopting procedures making the vehicle operator specifically responsible for assuring that tires are removed from the vehicle in time for recapping. Standards for the tire tread thickness needed for recapping are readily available so vehicle operators should be required to apply this criteria in operating his vehicle.

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Tire changes normally occur when a vehicle is scheduled for periodic maintenance. In surveying how tires are replaced at motor pools in Korea, we noted another problem the Army was having in having replacement tires available. We found that vehicles were being put back into service after maintenance without replacing tires that should have been removed and turned in for recapping. The reason for this was that supply personnel in the motor pool were not properly keeping stock records and did not have accurate information on numbers and sizes of tires required, issued, and on hand. This resulted in zero balances for certain tire sizes and the practice of releasing vehicles for further operations until the next maintenance cycle. The practical effect of this practice is that the vehicles are driven for another 2,000 to 4,000 miles and by that time the tires are worn down to a "bald" state where recapping is not possible. This presents a safety hazard as well as additional costs because the tires are then turned in to PDO yards and disposed of as scrap rubber.

Tires sold for nominal value
as scrap rubber

Nearly all of the tires turned in to the PDO have been sold as scrap rubber at only a fraction of a cent per pound. During the past year about 2.2 million pounds of tires were sold for about \$10,000. In contrast, savings of about \$7,800 could be realized just by recapping the 263 tires that we inspected at the ASCOM PDO.

U.S. Air Force tire
management in Korea

The Air Force has not adopted the Army policy of meeting 75 percent of its annual tire requirements with recaps. However, Air Force Technical Order 36Y32-1-11 states that recaps should be used whenever possible.

Low utilization of recapped tires

The Air Force in Korea uses approximately 8,000 passenger, truck and bus tires annually at a cost of about \$350,000 to \$400,000. During FY 1972 only about 17 percent, or 1,400, of the total requirement was met with recapped tires. This low percentage can largely be attributed to weaknesses in the supply turn-in procedures. Had the Air Force achieved a 75-percent recap level, savings of \$100-150,000 could have been realized.

Vehicle maintenance personnel at each base are responsible for deciding whether or not turn-ins are recappable. If the tires are not identified and reported as recappable, they are automatically sent to the Redistribution and Marketing (R&M) yard since base supply personnel do not

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inspect and classify tires. Even those reported as recappable may be disposed of because of the Air Force computerized method of determining recapping disposition. When reparable tires are reported, a status card is processed through the computer. If the due-in and on-hand balance at that time is equal to or excess to the demand level, the computer automatically issues instructions to condemn all of the reported tires. If the due-in and on-hand balance is below the demand level, only the number of reported tires needed to reach demand level will be recapped with the balance being transferred to R&M. This procedure prevents maximum use of recappable assets because tires transferred to R&M are normally sold as scrap through the U.S. Army Property Disposal Agency at very low prices. Thus, the Air Force method of determining tire disposition results in the unnecessary disposal of reusable tire assets while new tires are later ordered to fill recurring demands.

GAO inspection of recappable tires

We visited the R&M yard at Osan AB on October 6, 1972 accompanied by the Chief of the Tire Shop, 51st Transportation Squadron. He randomly selected for inspection 20 tires of various sizes that were readily accessible in the tire pile and classified 15 as recappable--three were new tires. The Tire Shop Chief told us that he routinely obtains tires from R&M and installs them on his vehicles without repairs. In addition, tires in excellent condition have been pulled from vehicles and trailers that have been processed to R&M.

Need for interservice coordination in contracting for recapping services

In a June 1971 interservice logistics review in Korea, GAO noted that both the Air Force Korea Procurement Center (KPC) and the Army Korea Procurement Agency (KPA) were obtaining recapping services from the same Korean contractor^{1/}. Because of the method of contracting and smaller volume, the Air Force (KPC) was paying from 40 to 60 percent more than the Army (KPA) for the same services. At the conclusion of this review Army and Air Force officials in Korea told us that they would get together and eliminate this uneconomical contracting practice.

During our current survey, we found that the Army and Air Force were still contracting separately for recap services and that the Air Force was now paying between 205 to 316 percent more than the Army for recapping the same tire sizes. As a result, for the period July 1, 1971 thru October 4, 1972, the Air Force paid about \$28,850 for recapping services, almost

^{1/} This situation was reported to the Congress in the GAO report "Opportunities to Consolidate Support Functions in the Pacific to Reduce Military Costs," B-160683, dated May 11, 1972.

\$18,000 more than these services would have cost under the Army contracts. About a year and a half after our initial review, consolidation of tire recapping requirements had not been accomplished. The reasons given for not merging requirements on one contract were that the Air Force had not designated a tire pickup and delivery point and had not decided on the method of transportation to be used.

At our exit conference, Air Force officials informed us that consolidation of its requirements under the Army contracts would be accomplished by December 1, 1972.

Opportunities for savings by
establishing additional
recapping capabilities

There is currently no recapping capability for certain types of low volume high cost tires being used in Korea. In addition, only one type tire, the 29.5 x 29, is shipped back to United States depots for recapping. These are primarily tires used on construction and earthmoving equipment and on larger type trucks. In fiscal year 1972 Army units consumed about 8,000 of these tires at a cost of about \$1.2 million.

During our survey we explored the possibility of establishing a recapping capability in Korea for these tires. Our analysis indicates that it would be cost effective to set up recapping capabilities for certain high volume sizes of these tires as shown in the following schedule.

<u>Selected tire sizes</u>	<u>75% of FY 1972 usage</u>	<u>Cost of new tires</u>	<u>Total</u>	<u>Estimated cost of recapped tires</u>	<u>Total</u>	<u>Estimated savings</u>
17.5 x 25	969	\$165	\$159,885	\$49.50	\$47,965	\$111,920
1400 x 24	800	183	146,400	54.90	43,920	102,480
1400 x 20	417	174	72,558	52.20	21,767	50,791
1100 x 15	360	86	30,960	25.80	9,288	21,672
1200 x 20	306	79	24,174	23.70	7,252	16,922
1600 x 24	<u>251</u>	296	<u>74,296</u>	88.80	<u>22,288</u>	<u>52,008</u>
	<u>3,103</u>		<u>\$508,273</u>		<u>\$152,480</u>	<u>\$355,793</u>

If requirements for 75 percent of the above sizes of tires could be recapped in-country, savings could run as high as \$356,000. Furthermore, tire recapping equipment is not particularly expensive considering the savings that are obtained. For example, the Army established a plant in Vietnam with an annual capacity in excess of 100,000 tires for a cost of about \$280,000. Most of the capital costs were recouped in only one year's operation.

Recommendations and agency
action in Korea

At the conclusion of our field work we advised the Commander, U.S. Forces Korea that increased emphasis on the tire program was needed in order to achieve maximum savings. With regard to the Army, we suggested that he consider

- use of U.S. personnel for (1) initial inspection and classification of tires as recappable or scrap and (2) verifying later the contractor's rejection of tires considered not recappable.
- inspect all tires now in the PDO yards to retrieve serviceable and recappable tires.
- have qualified inspectors periodically visit the PDO yards to recapture all serviceable tires.
- consider the feasibility of various methods of developing an in-country capability for these larger tires such as:
 1. Establishing a Government recap shop for over-size tires.
 2. Contracting for this service with the additional equipment required provided to the contractor as Government-furnished equipment.

On December 21, 1972, U.S. Forces, Korea advised the Commander in Chief, Pacific that they concurred with the GAO conditions and conclusions and that EUSA was taking the following corrective action.

1. In a message to KORSCOM, dated November 20, 1972, G4, Headquarters, Eighth U.S. Army, directed that immediate action be taken to make a 100-percent on-site inspection by qualified personnel of tires in disposal activities for the removal of tires determined economical for recapping. The segregation and inspection of tires in the disposal activities was initiated on 11 December 1972.

2. The above message also directed that procedures and inspection criteria be published requiring all units to initiate maintenance at the Direct Support Unit prior to turn-in of tires to the PDO. A study is presently under way to determine the controls needed and to develop procedures to be followed. It is anticipated that these procedures will be published by 1 March 1973.

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3. The feasibility of developing an in-country capability for the repair and recapping of low-volume high cost tires was under study. The USAKPA is coordinating with KORSCOM, the Air Force and local industry in Korea, Japan, and Taiwan to determine the cost effectiveness of contracting for these services. The use of Government-furnished equipment and costs involved in establishing a Government shop are being considered. Based upon these studies, a program for the repair and recap of these large size tires will be determined.

With regard to the Air Force we suggested that the following steps be taken to insure that the maximum number of tires are recapped and at reasonable prices:

- consolidate tire recapping requirements under the KPA contracts.
- consider establishing a central inspection and classification point for tires turned in by maintenance shops.
- insure that all tires classified as recappable are recapped.
- retrieve all serviceable and recappable tires now in the R&M yard.

U.S. Forces Korea advised CINCPAC of the following Air Force corrective action.

1. The USFK Procurement Coordinating Board had designated the repair and recapping of tires as a single service procurement item with the U.S. Army Korea Procurement Agency (USAKPA) as the single service procurement assignee. USAKPA contracts for tire repair and recapping services have been modified to incorporate requirements of the U.S. Air Force.

2. A central inspection and classification point for tires has been established at both Kunsan AB and Osan AB. Kunsan will service Kwangju AB and Osan will service all units supported by Osan Base Supply. This encompasses all 314th Air Division-managed tires. The dual collection points were required due to complications in maintaining compatibility with the Air Force standard supply system. Each central collection point has an inspector designated by name.

3. Procedures have been established within base supply to insure all "excess management notices" on tires are manually reviewed before processing tires to Redistribution and Marketing. This review will take into consideration the canceling of dues-in and the increasing of demand levels. Additional procedures have been established to insure lot delivery and return of recappable tires to and from the contractor and 314th Air Division-supported units.

4. Action to retrieve all serviceable and recappable tires from Redistribution and Marketing was initiated on December 11, 1972.

VIETNAM

Our limited survey work in Vietnam disclosed the following three areas where tire management could be improved.

Vietnam offshore recapping

We found that the 7th Air Force was shipping automotive tires to Singapore to be recapped by a commercial firm instead of obtaining this service from the Army of the Republic of Vietnam (ARVN) tire rebuild facilities in-country. As a result, we recommended that MACV determine whether it was feasible and economical to obtain ARVN support for the Air Force's limited recapping needs.

The Military Assistance Command, Vietnam (MACV) told us that the Air Force would obtain ARVN support thru an interservice support agreement between USARV and ARVN for the popular 16 and 20 inch tire sizes. For other tires which ARVN cannot support, MACV will determine the feasibility of recapping tires in Bangkok, Singapore, or Manila for FY 1973.

Disposition of Vietnamese Air Force (VNAF) aircraft tires

We found that tires removed from VNAF transport-type aircraft were being disposed of without determining if the tires could be recapped either in CONUS or other offshore locations. Since the U.S. Air Force does ship certain recappable aircraft tires to CONUS, we recommended that MACV consider establishing such a program for VNAF requirements.

MACV responded that they would review our suggestion and set up a program if it was deemed appropriate.

Nonreparable tires being returned to the military supply system

We were advised that one of the major problems concerning tire management in Vietnam was the large number of U.S. military tires currently in the civilian sector of the economy. We were told many of these tires had been purchased by Vietnamese from PDO yards for use on civilian vehicles and such tires were then substituted for good tires found on military vehicles. Thus, a nonreparable tire would replace a new or reparable tire in the military supply system.

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We advised MACV that controls should be established to preclude tires classified as nonreparable from returning to the supply system. A possible course of action is contained in Army Technical Manual, TM 9-2610-201-14, Part II, which states that tires classified as nonreparable will be destroyed by cutting the beads before release to the PDO yards. It appeared that bead mutilation could be performed at the Collection, Classification and Salvage (CC&S) facilities operated by USARV and ARVN at the time tires are classified nonreparable.

With regard to the tires already classified, we asked MACV to consider burning those tires which are nonreparable. Any nonreparable tires released from PDO yards for legitimate purposes, e.g., for use as bumper guards at Vietnamese docks, should be rendered unsuitable for use on vehicles by cutting the beads or some other effective process.

MACV told us that the following actions would be taken to preclude tires classified as nonreparable from returning to the RVNAF supply system.

1. RVNAF and U.S. CC&S activities were being directed to destroy such tires by cutting the beads before turn-in to PDOs.
2. An exception to DOD Directive 4160.20M had been received, permitting destruction of tires in PDOs not required for the RVNAF recap program.
3. All sales of tires at RVN and offshore sales activities had been suspended.
4. All withdrawal of tires from PDOs had been suspended except for those required to meet RVNAF recap requirements.

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Since many of the corrective actions discussed above for Korea have not yet been completed, we suggest that you have U.S. Forces, Korea advise you of the status of their efforts. Further, we suggest that progress reports be furnished by the command until you are satisfied that the improvements in tire management have been satisfactorily implemented. We would appreciate being informed of the progress that is made. Comparable follow-up action in Vietnam is not being recommended in view of the current situation prevailing there.

Copies of this report are being sent to the Commander in Chief, U.S. Army, Pacific; the Commander in Chief, Pacific Air Forces, the Commander, U.S. Forces, Korea, and the U.S. Military Assistance Command, Vietnam.

Sincerely yours,

A handwritten signature in black ink, appearing to read "C. Roman". The signature is fluid and cursive, with a prominent loop at the beginning of the first name.

C. Roman
Director