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[Automotive Tire Recapping: Dollars and Energy Can Be Saved]. LCD-78-210; B-159200. January 11, 1978. 7 pp.

Report to James T. McIntyre, Jr., Acting Director, Office of Management and Budget; by Robert G. Rothwell (for Fred J. Shafer, Director, Logistics and Communications Div.).

Issue Area: Facilities and Material Management (700).
Contact: Logistics and Communications Div.
Budget Function: National Defense: Department of Defense - Military (except procurement & contracts) (051).
Organization Concerned: Department of Defense; General Services Administration.

The use of recapped tires offers the potential for substantial savings in operating Government vehicle fleets and in conserving energy resources through procurement of products containing recycled material. Although 1 million replacement tires are required annually for Government-owned vehicles, only about 25% of the replacements are recapped tires. Findings/Conclusions: Each year the Government spends over $29 million for about 716,000 new replacement tires and about $5 million to recap 254,000 tires. The replacement cost of new tires for the recapped tires would be about $15.6 million. Several Government and commercial tests have shown that recaps can perform as well as new tires. A pricing survey in 1976 disclosed that recap prices for selected popular tire sizes were 25% to 49% lower than new tire prices. The Army reported an overall use rate for recapped tires of 57% with accompanying cost savings of 49%. Although Federal agencies have adopted policies which authorize the use of recapped tires, they have not developed effective programs and guidelines to encourage recap use. Recommendations: The Acting Director, Office of Management and Budget, should establish an overall policy directive requiring agencies to develop effective guidelines and programs for recapping tires. These guidelines should: provide specific standards for using recaps; insure that tires are made available for recapping; and require effective quality control, reporting, and monitoring systems to provide agencies feedback on the success of their recapping efforts. (RRS)

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

LOGISTICS AND COMMUNICATIONS DIVISION

B-159200

JAN 11 1978

The Honorable James T. McIntyre, Jr.
Acting Director, Office of Management
and Budget

Dear Mr. McIntyre:

The U.S. Government operates a fleet of commercial passenger cars and trucks exceeding 420,000. Each year the Government spends over $29 million for about 716,000 new replacement tires and $5 million to recap about 254,000 replacement tires for the fleet.

Because tires represent a significant part of the millions spent to operate and maintain these vehicles, we examined management policies and practices relating to the procurement and use of recapped tires. Our review covered selected activities of the General Services Administration (GSA), Postal Service, Forest Service, and the Department of Defense.

The use of recapped tires offers the potential for substantial savings in operating Government vehicle fleets and in conserving energy resources through procurement of products that contain recycled material. Although one million replacement tires are required annually, only about 25 percent of the replacements are recapped tires. Most of the 716,000 tires that were replaced with new tires could also have been recapped if agencies had effective programs for replacing tires before excessive tread wear occurs.

Although most Federal agencies have adopted policies which authorize the use of recapped tires, the agencies have not developed effective programs and guidelines to encourage their use. Federal agencies have limited their use of recapped tires because of concern over tire safety and performance characteristics, i.e., durability as evidenced by miles of satisfactory use on vehicles. However, several Government and commercial tests have shown that recaps are safe and can perform as well as new tires at considerably less cost.

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INCREASED USE OF RECAPPED TIRES COULD SAVE DOLLARS AND ENERGY

GSA records showed that Government agencies recapped 254,000 tires at a cost of $5.2 million during 1976. GSA estimated that the replacement cost of new tires would have been $15.6 million. However, Government agencies also spent $29 million for new replacement tires. Additional savings are possible if Government agencies increase their recapping effort.

Although actual dollar and energy savings would depend on performance characteristics, several Government and commercial tests have shown that recaps can perform as well as new tires. In addition, taxi, bus, and truck operators have long accepted the economic advantages of using quality recapped tires. More recently, recapped passenger tires have also become commercially acceptable.

A pricing survey conducted by GSA in 1976 disclosed that recap prices for selected popular tire sizes were 25 to 49 percent lower than new tire prices. To further illustrate the cost savings that can be achieved, the Army reported an overall usage rate of 67 percent with an accompanying cost savings of 49 percent. Applying the cost reductions available through GSA's price schedules to different levels of recapping that can be done can save millions as detailed below.

New tire replacement cost	Potential recap tire use	GSA survey savings differential	Potential Government-wide cost savings
(millions)	(percent)	(percent)	(millions)
$29	25	25	$1.8
29	25	49	3.6
29	50	25	3.6
29	50	49	7.2

Besides cost savings, the Government could conserve crude oil used in making tires. According to the Environmental Protection Agency and GSA, about 5 more gallons of oil are required to make a new passenger tire and 20 gallons more to make a new truck tire compared to recapping a used tire. Recapping tires can thus save about 100 barrels

of oil per 1,000 passenger tires and 400 barrels per 1,000 truck tires. We estimate that if the Government recapped just 50 percent of the 716,000 new tires purchased annually, Government recapping programs could save more than 48,000 barrels of oil a year.

Even greater energy savings are available if private industry and the general public would use more recapped tires instead of buying new replacement tires. For example, during 1976, the replacement tire market was 208 million tires; 47 million of these were recapped. If the general public followed the Army's example of recapping 67 percent of its replacement tires, an additional 92 million tires would have been recapped. In terms of oil that could be saved, this would amount to about 13 million barrels.

SAFETY AND PERFORMANCE

Both military and civilian agencies avoid or limit the use of recapped tires. Generally, reasons for such action concern the safety and performance of recapped tires. Government and commercial studies, and experience have shown that recaps are safe and can perform as well as new tires.

An indication of tire safety was shown when the Environmental Protection Agency sponsored a 1975 study of roadside tire scraps. This study showed that recapped tires are not the sole source of scrap rubber along the side of interstate highways in Ohio, Pennsylvania, Arizona, Minnesota, and Wisconsin. Analysis of this rubber revealed that unrecapped tires probably caused 30 to 50 percent of the scrap.

According to the Environmental Protection Agency's sponsored study, people associated with retreading estimate that the recapped tire failure rate is about 4 percent. The basis for the estimate is the percentage of tires being returned to the retreader for adjustment. New tire adjustment rates are highly confidential, but 3 percent is the commonly accepted industry average rate.

Agency personnel also are concerned with the performance of recapped tires. Many people feel that although recap prices may be cheaper, the tires may not last as long as new tires.

Tests by various Government agencies have shown varying results. For example, in a test conducted in May 1976,

the Air Force evaluated the latest method of recapping passenger tires and found that recapped tires got more mileage. The Air Force had 60 recapped tires recapped again and installed on security police, taxi fleet, and civil engineering vehicles. For comparison purposes, similar vehicles were equipped with new tires.

Test results showed that the average mileage for new tires was 10,237 miles as compared to 13,851 miles for the recapped tires. The cost per mile for recapped tires was 44 percent less than for new tires. In this test, therefore, recapped tire performance compared very favorably with new tire performance.

In another test by EPA of a popular tire size (G78-14), the recap did not achieve the mileage performance of the new tire but did provide a lower cost per mile as shown in the following table.

		Mileage	
	Price	Total	Per mile
New	$28.42	26,000	0.11
Recap	-7.65	-10,000	-.08
Total	$20.77	16,000	.03

Tests conducted by GSA showed extreme performance variations among tires recapped by different retreaders. An effective quality control program would reduce such extreme variations and improve recapped tire performance.

Truck and bus operators have long accepted the economic advantages of using quality recapped tires. More recently, recapped passenger tires have also become commercially acceptable. During our review, we spoke with several commercial activities which report excellent performance from recapped tires. Here are some examples:

--A Minneapolis trucking firm averages 150,000 miles from new steel belted radial tires. Then they are recapped to get 175,000 miles more. After a second recapping, the tires are moved back to the trailers. To make maximum use of good casings, the firm may have the tires recapped a couple of more times after they have been placed on the trailers.

--A Chicago taxi company tested recapped tires on its fleet. According to the Vice President of Maintenance, the tires would last about 40,000 miles. Also, taxi drivers reported excellent traction during snow and ice storms in early 1977.

--In Iowa, a county sheriff patrol obtained excellent test results from recapped tires. A patrol official confirmed that the cars ran nearly 100,000 miles on recapped tires and were subjected to severe applications, including a high percentage of gravel road travel and severe acceleration for limited pursuit. The recapped tires averaged 25,000 miles each.

--A California trucking firm gets its lowest cost per mile with recapped truck tires. The firm found that new tires averaged 40,000 miles, and recapped tires averaged from 65,000 to 70,000 at about one-third the new tire price. Since the firm accumulates over 25 million tractor miles a year, recapped tire savings are important.

Commercial acceptance of recapped tires, coupled with successful demonstration among Government agencies, may alleviate the fears surrounding the safety and performance of recapped tires. Effective Government recapping programs will help set the example for saving dollars and conserving our energy resources not only within the Government but with the private sector as well.

NEED TO INCREASE THE USE OF RECAPPED TIRES

Notwithstanding the potential energy and dollar savings that can be achieved, most military and civilian agencies have made only limited use of recapped tires and few have established utilization goals or objectives. Accordingly, the actual use of recapped tires by Government agencies is far below the 67-percent utilization rate achieved by the Army.

Of the 12 civilian and military agencies visited, the Army was the most active in recapping up to 67 percent of its tire needs. The Air Force installations averaged only 32 percent, and neither of the Navy activities we visited used recaps at all. As for civilian agencies, Region V

of the Forest Service used recapped tires to satisfy 30 percent of its tire requirements, and the Postal Service's use of recaps varied from 11 percent at one location to 73 at another. GSA did not use recaps on its motor pool passenger vehicles.

CONCLUSIONS AND RECOMMENDATIONS

The use of recapped tires offers the potential for substantial savings in operating Government vehicle fleets and in conserving energy resources through maximizing the use of recoverable materials. Although Federal agencies have adopted policies which authorize the use of recapped tires, they have not developed effective programs and guidelines to encourage recap usage.

To implement a uniform recapping program, we recommend that the Acting Director, Office of Management and Budget, establish an overall policy directive requiring agencies to develop effective guidelines and programs for recapping tires to achieve dollar and energy savings. These guidelines should

--provide specific standards for using recaps;

--insure that tires are made available for recapping; and

--require effective quality control, reporting, and monitoring systems to provide agencies feedback on the success of their recapping efforts.

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As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs 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 Chairmen of the House and Senate Committees on Appropriations and Armed Services; the Chairman, Senate Committee on Governmental Affairs; the Chairman, House Committee on Government Operations; the Secretaries of Defense, the Army, Navy, and Air Force; the Administrator of General Services; and the Secretary, Department of Agriculture.

Sincerely yours,

R. W. Rothwell

for F. J. Shafer
Director