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UNITED STATES GENERAL ACCOUNTING OFFICE

WASHINGTON, D.C. 20548

PROCUREMENT AND SYSTEMS
ACQUISITION DIVISION



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MAR 5 1973

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The Honorable Elliot L. Richardson
The Secretary of Defense

Dear Mr. Secretary:

The General Accounting Office reviewed the small caliber ammunition program managed by the Frankford Arsenal, an Army Materiel Command installation, at Philadelphia, Pennsylvania. We found that Frankford's practice of making rather than buying 20-mm. projectiles was uneconomical. The Army Audit Agency (AAA) previously reported this practice to be uneconomical for other types of ammunition.

Frankford's functions include research and development and/or production of small caliber ammunition and such items as artillery ammunition components, fire control instruments, and mechanical timing devices. Other functions are engineering, procurement of certain military commodities, and planning for industrial mobilization.

To have maximum economy through consolidating requirements, Frankford purchases small caliber ammunition for all three of the services. The following summary shows total small caliber ammunition procurements and sources of supply for fiscal years 1971 and 1972.

<u>Source</u>	<u>Fiscal year</u>		<u>Total</u>	<u>Percent of total</u>
	<u>1971</u>	<u>1972</u>		
	——(millions)——			
Government-owned, contractor-operated plants	\$129.0	\$145.3	\$274.3	60.6
Commercial	60.2	107.5	167.7	37.1
Frankford Arsenal	<u>8.1</u>	<u>2.5</u>	<u>10.6</u>	<u>2.3</u>
Total	<u>\$197.3</u>	<u>\$255.3</u>	<u>\$452.6</u>	<u>100.0</u>

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Office of Management and Budget and Department of Defense directives emphasize that Government departments and agencies are to rely on private enterprise for products and services to the extent consistent with economy and needed maintenance of in-house skills and expertise. Frankford decided to produce in-house instead of purchasing 20-mm. projectiles.

20-MM. PROJECTILE

This projectile, one of five main components of the 20-mm. cartridge, is a steel shell filled with a high explosive and is fused to explode on impact. It can be made to give it incendiary and/or tracer capability. A summary of 20-mm. ammunition procurements and sources of supply for fiscal years 1971 and 1972 follows.

<u>Source</u>	<u>Fiscal year</u>		<u>Total</u>	<u>Percent of total</u>
	<u>1971</u>	<u>1972</u>		
	——(millions)——			
Government-owned, contractor- operated plants	\$16.9	\$14.7	\$31.6	32.2
Commercial	30.0	35.2	65.2	66.5
Frankford Arsenal (note a)	<u>1.2</u>	<u>.1</u>	<u>1.3</u>	<u>1.3</u>
Total	<u>\$48.1</u>	<u>\$50.0</u>	<u>\$98.1</u>	<u>100.0</u>

^aOnly the projectiles were manufactured by Frankford.

Beginning in April and ending in September 1971, Frankford prepared a series of estimates that indicated it would cost about \$1.25 a unit, or over \$1.1 million, to establish a production line and make 900,000 projectiles. Labor and overhead accounted for most of the \$1.1 million estimate. During this period Frankford was purchasing similar projectiles at about \$0.20 each. Consequently, Frankford had information to show that it would cost about \$1.05 a unit, or a total of \$945,000 more, to make these projectiles.

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About \$265,000 for tooling, material, and transportation of equipment would not have been incurred if the 900,000 projectiles had been purchased from commercial sources. The total cost of procurement from commercial sources would have been only about \$180,000.

In May 1972, after it reviewed the 20-mm. program and available resources, Frankford decreased the quantity to be made from 900,000 to 200,000 projectiles. Shortly thereafter, Frankford purchased the remaining 700,000 projectiles at a unit price of \$0.20. We estimate that the costs to establish a production line and to make 200,000 projectiles will total about \$1 million, or about \$960,000 more than the commercial purchase price.

We examined documents relating to mobilization reserve requirements for the 20-mm. projectile and noted that the Arsenal was not a mobilization reserve producer for this ammunition. Therefore mobilization reserve requirements do not appear to justify a production line for the 20-mm. projectile.

A Frankford official informed us that, because of a critical work shortage, a number of its employees were not being fully utilized and, to obtain more production from these people, it decided to make 20-mm. projectiles in-house. Another reason offered to us for establishing the production line was that it was needed to obtain expertise in order to assist new producers of the 20-mm. projectile. Since Frankford had not had a production run of 20-mm. projectiles for more than 10 years, a production line had to be established.

5.56-MM. AND 7.62-MM. AMMUNITION

Frankford's practice of making ammunition has been a recurring subject in AAA reports of July 1966, October 1968, and June 1972. The Office of the Secretary of Defense expressed interest in this problem in 1969 and again in 1972 (OSD Case 1-181).

In its 1972 report AAA stated that costs of manufacturing 5.56-mm. and 7.62-mm. ammunition at Frankford significantly exceeded the costs of purchasing these items. Frankford's costs per round ranged from 13 to 17 cents more than the highest prices paid to other producers. AAA estimated that about \$8.5 million could have been saved if the ammunition requirements scheduled for in-house production during fiscal years 1969 through 1971 had been purchased. If the 5.56-mm. and 7.62-mm. ammunition is produced at the current rate at Frankford during the next 2 fiscal years, about \$3.8 million additional costs will be incurred. The Army's position on this finding was basically that adequate workloads to maintain engineering skills and talents are a continuing critical problem.

Substantially the same conditions were cited in the 1966 and 1968 AAA audit reports. In commenting on the 1968 report, the Assistant Secretary of Defense (I&L) stated that there was probably less justification for retaining in-house expertise in small arms ammunition than in any other ammunition area because of the several sporting arms companies which have always been kept busy in peacetime producing military ammunition to meet training requirements. He also said that there were two large Government-owned plants, one of which always remained active for the same reason and that these operations should suffice to preserve for the Nation an adequate expertise in small arms ammunition manufacture.

CONCLUSIONS AND RECOMMENDATION

It would be more economical for the Army to obtain required small arms ammunition from commercial sources. In addition, we believe the Army should be able to maintain expertise in small arms ammunition production through Frankford's research and development work and through observation of production at privately owned and Government-owned, contractor-operated plants rather than by in-house production. This is especially true for 5.56-mm. and 7.62-mm. ammunition and 20-mm. projectiles when the additional costs alone for in-house production far exceed the full purchase cost from commercial sources.

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We believe AAA's reports as well as this report show the need for considering comparative cost analyses in future decisions by the Army and the Arsenal to produce ammunition in-house. We have been advised that the U.S. Army Materiel Command has initiated a study to fully identify the problems and propose solutions.

Since recurring reports over a period of about 5 years have shown a need for corrective action, we recommend that you monitor the Army Materiel Command study to insure prompt action. We would like to be advised of the study results and the actions taken by the Army.

Copies of this report are being sent to the House and Senate Committees on Appropriations, Government Operations, and Armed Services, and to the Secretary of the Army.

Sincerely yours,

R. W. Zutmann

Director

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