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The Honorable Bill Frenzel
House of Representatives

Dear Mr. Frenzel:

In your August 6, 1973, letter you asked us to review the cost data the Army used in its analysis which led it to terminate production of 5.56-mm ball and blank ammunition at the Twin Cities Army Ammunition Plant, New Brighton, Minnesota, and to consolidate production of the rounds at the Lake City Army Ammunition Plant, Independence, Missouri. 20

The Army decided to terminate production at Twin Cities because of the projected reduction in the overall 5.56-mm ammunition requirements due to the 1972 cease-fire in South-east Asia rather than to a consolidation of production at the Lake City plant. The Army projected that the fiscal years 1973 and 1974 requirements for 5.56-mm ammunition would be reduced by one-half and two-thirds, respectively, compared with the ammunition needed before the cease-fire. The analysis of the 5.56 mm was part of a broad review covering many other ammunition items and plants.

We reviewed the cost data and methodology used by the Army in its analysis of the 5.56-mm workload alternatives and independently tested the reasonableness of the pricing proposals submitted by the contractors, Federal Cartridge Corporation and Remington Arms Company, who operate the Twin Cities and Lake City plants, respectively. 2 3

We believe that the cost data used in the Army's study comparing the cost of producing 5.56-mm ammunition at the Twin Cities and Lake City plants is reasonable and that the study methods were appropriate and applied equitably to both plants. The details of our review are included in the enclosure.

We are sending this letter to each member of the Minnesota congressional delegation who signed the August 6, 1973, letter requesting our review. We do not plan to distribute this report further unless you agree or publicly announce its contents.

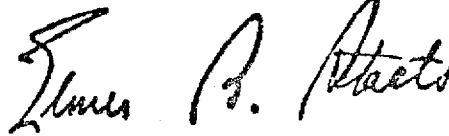
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Please advise us if additional information is needed or if we can be of further assistance.

Sincerely yours,

A handwritten signature in cursive script, reading "James B. Stacks". The signature is written in dark ink and is positioned above the typed name.

Comptroller General
of the United States

Enclosure

GAO REVIEW OF THE ARMY'S DECISION
TO TERMINATE PRODUCTION AT THE
TWIN CITIES ARMY AMMUNITION PLANT

BACKGROUND

The Army's decision to terminate production at the Twin Cities plant was based on a U.S. Army Munitions Command (now a part of the U.S. Army Armament Command) study of ammunition production needs for fiscal years 1973 and 1974. This study was conducted as a result of reductions in ammunition requirements, due to the cease-fire in Southeast Asia, and covered a number of ammunition items and plants in addition to the 5.56-mm ammunition produced at Twin Cities. The decision to terminate production at Twin Cities reflects projected reductions in the 5.56-mm requirement from about 200 million rounds a month (prior to the cease-fire in Southeast Asia), which required that 2 plants operate 3 shifts a day, to about 100 million rounds a month, which can be produced by 1 plant operating 3 shifts a day. The Army estimated that operations would be reduced to two shifts a day in fiscal year 1974.

The following chart compares the production capabilities of the Twin Cities and Lake City ammunition plants and the level of production at the time of the Army's study.

| <u>Item</u> | <u>Capability</u> | | <u>Production level</u> | |
|-------------|--------------------|------------------|-------------------------|------------------|
| | <u>Twin Cities</u> | <u>Lake City</u> | <u>Twin Cities</u> | <u>Lake City</u> |
| 5.56 mm | Yes | Yes | 3 shifts | 3 shifts |
| 7.62 mm | Yes | Yes | Inactive | 1 shift |
| .30 caliber | | ^a Yes | | 1 shift |
| 20 mm | | ^a Yes | | 1 shift |

^aOnly Army ammunition plant now producing this item.

Since 5.56-mm ball and blank ammunition can be produced at either the Twin Cities or Lake City plant, the Army considered the following workload alternatives: (1) produce the entire quantity at Lake City, (2) produce the entire quantity at Twin Cities, or (3) split the production between the two plants. The Army summarized the results of the analysis and ranked them economically as follows.

| <u>Economic rating</u> | <u>Total monthly cost</u> | <u>Difference</u> | | <u>Work shifts</u> | | | |
|------------------------|---------------------------|-------------------|---------------|--------------------|--------------|--------------------|--------------|
| | | <u>Monthly</u> | <u>Annual</u> | <u>Lake City</u> | | <u>Twin Cities</u> | |
| | | | | <u>Ball</u> | <u>Blank</u> | <u>Ball</u> | <u>Blank</u> |

----- (thousands) -----

| | | | | | | | |
|---|---------|------|-------|---|---|---|---|
| 1 | \$3,349 | \$ - | \$ - | 3 | 1 | - | - |
| 2 | 3,904 | 555 | 6,660 | - | - | 3 | 1 |
| 3 | 3,907 | 558 | 6,696 | 2 | - | 1 | 1 |

The Army study data showed the following detail for alternative 1, all 5.56-mm production at Lake City, and alternative 2, all 5.56-mm production at Twin Cities.

| <u>Direct cost and quantity</u> | <u>Alternative 1, Lake City</u> | | <u>Alternative 2, Twin Cities</u> | | <u>Monthly cost difference</u> |
|--|---------------------------------|--------------------|-----------------------------------|--------------------|--------------------------------|
| | <u>Cost per thousand rounds</u> | <u>Total</u> | <u>Cost per thousand rounds</u> | <u>Total</u> | |
| 5.56-mm ball: 105,150,000 each | \$19.22 | \$2,020,983 | \$19.95 | \$2,097,743 | \$ 76,760 |
| 5.56-mm blank: 7,000,000 each | 15.87 | 111,090 | 15.65 | 109,550 | -1,540 |
| <u>Indirect cost</u> | | | | | |
| Marginal overhead | | 887,480 | | 1,744,705 | 857,225 |
| Government staff at plant | | 11,000 | | 53,917 | 42,917 |
| Standby cost avoided if line remains active | | -2,308 | | -152,809 | -150,501 |
| Overhead adjustment to compensate for differences between contractor bid quantity and study quantity | | 141,595 | | -134,957 | -276,552 |
| <u>Transportation costs</u> | | | | | |
| Components to plant | | 32,115 | | 36,538 | 4,423 |
| End items from plant | | 147,223 | | 149,762 | 2,539 |
| Total | | \$3,349,178 | | \$3,904,449 | \$555,271 |

The cost data used by the Army in the workload study was obtained from the contractors, Federal Cartridge Corporation and Remington Arms Company, who operated the Twin Cities and Lake City plants, respectively. Each contractor was requested to bid on a one-, two-, and three-shift 5.56-mm production operation and to provide data on the total overhead cost at the plant under each of above workload levels, as well as the total plant overhead cost assuming that there would be no 5.56-mm production. Lake City was directed to assume that 7.62-mm ammunition would continue at a one-shift rate and that it would also be required to produce approximately 21.5 million rounds of various types of 20-mm ammunition. The Army requested that the Defense Contract Audit Agency representatives at each plant audit the contractors' proposed costs.

would cost an additional \$400,000 to reactivate the 7.62-mm line at Twin Cities and \$735,000 to decontaminate and lay away the 7.62-mm line at Lake City.

We also made a more limited review of the methodology used to arrive at the other elements of cost in the Army study to assure ourselves that both plants were treated equitably in the comparison. We found an overstatement of about \$16,000 a month in the cost of the Government staff at Twin Cities; however, this cost difference would not affect the conclusion. Otherwise the Army's study methods treated both plants equitably.

In summary we believe that (1) the cost estimates used in the Army's workload study for the Twin Cities and Lake City plants are reasonable, (2) both plants were treated fairly, and (3) the study's conclusion that it would be more economical to produce all 5.56-mm ammunition at the Lake City plant is reasonable.