OUTLOOK FOR LEAD IN THE SMALL ARMS AMMUNITION INDUSTRY*

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My associate, Mr. Elfred, and I have enjoyed attending the Lead Industries Association meetings the last several years and have left these meetings feeling that we have gained a lot through the Association.

I regret to advise you that, for reasons beyond his control, it is impossible for my associate, Stillman Elfred, to be with us today, but the few notes which I am giving to the Association have been prepared by the two of us.

As most of you know, Sporting Arms Ammunition Division used approximately 32,800 tons of lead during the year 1950, which statistical information is available through the yearbook of the American Bureau of Metal Statistics.

We believe you will find that the statistical data as published is quite accurate over a period of years. However, there are years in which the consumption will vary reasonably from the statistical data, due to the inventory situation.

The Ammunition Industry has an historical position as one of the principal users of lead in this country. It has been using lead since the birth of the industry and has considered lead as indispensable in the manufacture of their products.

It would seem, therefore, that the Lead Producers would recognize this position and continue to supply this industry their necessary requirements from any and all sources available to them.

It is also well known that lead for use in the ammunition industry does not have a specification as rigid as that utilized in other industries consuming the metal.

We are quite lenient on impurities and are not hesitant in accepting antimony, arsenic, and bismuth in the lead used for shot.

Silver, tin, and copper are detrimental and should be definitely approached at zero percentage in order to insure good pellet production in the shot tower.

Lead is an admirably suited metal by nature for the manufacture of ammunition because of the following outstanding qualities:

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1) The high density of a lead pellet or bullet gives a very desirable ballistic effect, which is called carrying power;

2) Lead has a low melting point with a proper surface tension that makes possible the easy formation of spherical pellets required for shot;

3) Lead does not alloy readily with or attack the steel in gun barrels;

4) The softness of lead avoids scratching, abrasion, and peening of the gun barrel;

5) The softness and malleability of lead makes it easy to form into bullet cores.

To give you some idea of the advantage of forming shot with lead, it would be interesting, we are sure, for you to know that 1-1/8 oz. of lead shot in a skeet load comprises approximately 645 pellets. On a commercial 12-gauge skeet load the muzzle velocity of lead shot is approximately 1165 ft. per second and traverses a 25-yard projectory in 8/10 of a second.

You have asked us to comment on the lead required for ammunition. As you review the lead consumption during the World War II in the ammunition industry, you will find that during the year of 1943, 16 percent of the total available lead, which was for that year 1,100,000 tons, was consumed in the ammunition industry.

It is recognized that this consumption approached 100 percent for military use.

We are unable to crystal-gaze and inform you as to the lead requirements in any armament program now under consideration by this Government and/or our allies, but we believe it might suffice to inform you how many pounds of finished lead are consumed in the manufacture of military ammunition.

Pounds of Lead per Thousand Rounds

50-cal. Ball	8.0 lbs.
50-cal. Armour Piercing	8.0
50-cal. Tracer	29.0
Cal. 30-06 Ball	16.75
Cal. 30 Cartine	11.72
Cal. 30 Tracer	9.75
7.92	14.15
303 British	15.86
45 Automatic	28.43
38 Spl. 158 gr.	22.58

At any time that you receive any data asking for the number of rounds of ammunition ordered or contemplated to be manufactured by the United States Government, you will be able to forecast the tonnage of lead essential for that order.

Should the Army Ordnance elect to use the facilities now in existence for the manufacture of small arms and ammunition, the lead requirements will increase.

You are no doubt familiar with the restrictions on the use of lead now covered by NPA Order M-38.

We do not feel that these restrictions will be applicable to any military requirements.

The price of lead on January 1, 1950, was 12¢ per pound, delivered New York, and on October 31st the price was 17¢, which price continued in effect for the balance of the year.

This is the official ceiling price as of today.

The fact that it is impossible to purchase the tonnage of lead required for industry at this price for reasonably prompt delivery is most aggravating and disappointing to the consumer of the commodity.

Although the increment of cost of lead demands very serious consideration in manufacturing ammunition, it cannot be as serious as the inability to obtain the volume tonnage required.

It is perhaps not properly appreciated that lead is a world commodity, not just a United States commodity.

From this general fact stems the ebb and flow of imports into the United States.

The position of the United States in most materials has had a revolutionary change since 1939.

Whereas we were practically self-sufficient before the last war, we now consume more than our present production possibilities.

Therefore, we must for our self-protection carefully practice the methods which will best supply us with our needed requirements.

On the other hand, the producers of lead in the western hemisphere would be practicing the proper long range policy if they recognized that the United States market is one of their important outlets and practiced long range sales policies with regard to American consumers, and without too much emphasis on short term gains.

Due to the uncertainty of obtaining enough lead at all times to meet requirements, our company has been influenced to seek an acceptable substitute and to carry on the necessary research and development work to accomplish this result.

To date, our results are very encouraging and our Research Division is of the opinion that the problem can be satisfactorily solved in every respect.

In speaking of available lead, we do not intend to bore you with statistics, as we are sure that all of you interested in the lead market are familiar with the uses and production.

We do recommend that you study all the available information and, in particular, review the sources of lead over a period of recent years.

Generally speaking, we have been dependent upon lead for United States consumption in approximately the following percentages:

1/3 Import
1/3 Secondary
1/3 Newly mined.

We cannot see any evidence of a source of supply of lead for United States consumption that will change this position, and these sources will prevail whether we are in a buyers or sellers market.

The imports of lead during 1950 were 520,000 tons or an average of 43,300 tons per month.

The duty was increased to 2-1/8¢ on refined lead on January 1, 1951.

The last quarter of 1950 found increasing importations that is well understood by all consumers as well as the producers.

The importation of lead during the first quarter of 1951 amounted to 45,000 tons or an average monthly intake of 15,000 tons or an annual intake of less than 200,000 tons.

We all know that the consumer expects the producer to carry metal inventory for his requirements as needed.

We do not know of any way to eliminate this expectancy on the part of the consumer, although we do admit that it is asking a great deal of the producer.

Perhaps the consumers could cooperate more closely with suppliers, by informing suppliers at least each quarter what tonnage of lead the consumer contemplates using.

We believe that each producer keeps a record, if only an estimate, of all the reasonable tonnage consumers may require.

We do not believe there is very much secrecy in the basic production and consumption of non-ferrous metals, therefore, we hope that the complacency and indifference to each other's problems will be superseded by cooperation and a real

effort made to eliminate the search for substitutes and have lead available to United States consumers even though it might involve a financial sacrifice at certain intervals.

It must be appreciated and realized that over a period of time, the average world market price will prevail.

This is all predicated on the basic fact, which seems difficult for us to acknowledge, that we do not produce the amount of lead required for our economy.

As to the lead requirements of the small arms ammunition industry over the balance of this year and beyond, the answer will depend on the demands for defense purposes and essential civilian uses.

If free of any Government restrictions on use of lead, our industry will probably require for production of sporting ammunition over the balance of this year, about the same tonnage used in the second half of the year 1950.

Demands for defense purposes during the balance of this year must be given first consideration, of course, but at the present time, no accurate estimate of this demand can be made.

We hope and expect that our industry will continue to be given equal consideration with other principal domestic consumers of lead, and that you producers will in some manner restore order to the chaotic conditions now existing in the world markets.