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5/23/93

To: T.C. Douglas

From: J.H. Coyle *JHC*

Subject: Monthly Report

LEADLESS BULLET (Copper):

There have been no further quotes from other vendors for the manufacture of these bullets at the present time.

Apex Ind., the only vendor to quote, which provides unfavorable economics, sent a small sample of 30 cal. bullets to test. Ten rounds were shot for accuracy and two for mush @ 100 yds. Accuracy for the 2/5 shot groups was 0.6" and 0.4". Mush was shot through 8" of water which yielded a weight retention of 95% with a mush dia. of approx. 1.6X. These bullets were made from C110 copper that Remington supplied. Contact was made with Apex to get the details of manufacturing of these bullets. The sample was not made on production equipment but were machined in the same manner as the present R & D bullets are machined. Apex stated that there were problems using C110 material and that this material could not be run on production equipment such as a Davenport.

Security Signal Systems, one of the copper slug vendors, was visited on 5/19. The company is looking at the feasibility of purchasing a CNC machine to make the copper bullets and provide a quote for producing them. It was stated that the bullets could not be made on their current production equipment such as a Davenport due to the length-diameter ratio for forming.

A bullet drawing has been sent to the Nippert Co. to view and possibly determine alternate methods of fabrication. Some information should be forthcoming shortly.

There should also be some quotes from other vendors the week of 6/1.

30 Cal - 165 gr. - latest design was loaded in 308 Win shells with the following results: V/P inst. - 2674 fps / 56600 psi. V/F spec is 2690 fps / 59000 psi. Accuracy @ 100 yds was 1.0".

30 Cal 190 gr. - latest design was loaded in 300 Weatherby Mag. with the following results: V/P inst. - 2958 fps / 63500 psi. V/P spec is 3015 fps / 64000 psi. Accuracy @ 100 yds. was 1.0". More handloading needs to be done to try and lower pressure and increase velocity. This should be done by 5/18.

270 Win 140 gr. - there could possibly be a v/p problem with this load. Another powder has been tried with basically the same results as the first powder used. This powder, AR2209, gave a v/p of 2890 fps / 60700 psi compared to 4250 powder that gave a v/p of 2894 fps / 61100 psi. Further handloading will be needed to try and identify a powder which will give better results. This should be done by 6/18.

LEAD FREE P&R TRAINING AMMO:

The two 52A machines that the purchasing dept. was checking on have been sold. Purchasing's contact said he may know where one more machine may be but there has been no word to date.

Representatives from Eliss do not know where any used 52A's are

located; they will quote on rebuilding the existing 62A frame. Bliss personnel will have to come and check the machine before a quote can be made.

The project request for the purchase or rebuilding of a 62A Bliss with modifications has been approved.

Small and large lead-free pistol primers have been received from Fiocchi of America. These primers will be tested in Remington shells using metal case bullets and compared to current Remington product. This should be done by 8/30.

Larry Martin of Fiocchi said that they are constantly working on the mix and that future primers could possibly be different than the ones that have been received.

MISCELLANEOUS:

Small samples of a longer 12 ga. slug and sabot for 3" mag. have been run on the CNC machine. If results are favorable, additional quantities will be made before machine is changed back to bullets.

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