

CONFIDENTIAL

1/29/93

To: T.C. Douglas
From: J.H. Coyle *JHC*
Subject: Monthly Report

270 Win 135 gr. ER:

The bullet trial & pilot was started on 1/28/93 and barring any problems, the loading trial & pilot should be signed off by 2/14/93.

30-30 Win 160 gr. ER:

The trial & pilot through loading has been completed and signed off at this time.

LEADLESS BULLET (Copper):

Another sample of 30 cal. 150 gr. bullets were made from both copper materials. Accuracy @ 100 yds. for the C145 was 1.2" and for the C110 was 1.5".

Mush was tested @ 200 yds. in water. The muzzle velocity for this test was 2995 fps. All bullets had a .070 dia hole drilled .69" deep in the nose. All bullets had the nose split and reformed with the exception of one which had no splits. Results of the mush test follows:

C145 - .050" split - 57%	weight retention - all of nose separated
C145 - .150" split - 59%	" " " " " "
C145 - no split - 57%	" " " " " "
C110 - .150" split - 95%	" " - avg. of 2 rds.

The C145 copper has the best accuracy to date with less than desirable mush. The C110 copper has less than desirable accuracy to date with the best mush. Testing on the 150 gr. bullet will be terminated since a heavier bullet is desirable and work will start on a 165 gr. Samples of the 165 gr. have been made from both materials. Accuracy, velocity & pressure, and mush will be done, but mush will be done in gelatin to possibly capture all pieces of the bullet.

Some 165 gr and 180 gr. Barnes X-bullets have arrived and will be tested for mush. Some 30 cal Black Talon ammo has been ordered and will also be tested along with the copper bullet.

The design for these bullets has been done using PRODAS which predicts the weight of the proposed bullet. There will probably be a problem obtaining ballistics due to the longer length of the bullet. A comparison of various bullet lengths follow:

165 gr. Hornady ERBT - 1.178"
165 gr. Barnes X-blt - 1.150"
165 gr. Copper BT - 1.303"

A handload will be developed and accuracy and mush for the 165 gr. copper and 165 gr. X-bullet should be completed by 2/5/93.

LEAD FREE P&R TRAINING AMMO:

Sketches have been made for lead bullets and sent to a plating vendor for quotes. The quote came back for \$5.00 per pound of bullets. Thicknesses of .003, .005, & .010" were the same price since the bullets

would have to stay in the tanks for so long. This price would relate to approx. \$93/1000 with a total price of approx. \$465M.

Another approach to this bullet will be to take an existing metal case bullet and enclose the heel with a disc. A machine will have to be rebuilt or another bliss machine purchased and have it modified to accept a disc feeder. Production metal case machines are at capacity now and cannot accommodate additional bullets or down-time for development work.

A quote was sent out for some disc samples but the vendor wanted \$4M for tooling to make 3 / 200 piece samples. A method of blanking the discs in-house on a current gas check machine will be investigated.

CONFIDENTIAL