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INTER-DEPARTMENTAL CORRESPONDENCE

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February 19, 1985

TO: W.H. Coleman, II

FROM: J.W. Bower

Monthly Report - Firearms Research - February 1985

SHOTGUN PRODUCT DEVELOPMENT

Model 1100 Functional Improvements

Circumferential springs, of 6150 material and .037 in. thick, are being altered in the Model Shop. The preload was 9-10 lbs. as a result of cupping of the material during forming. Altering the free radius should lower the preload to the 6 lb. design specification. Testing of modified springs should begin the week of February 25.

Other modifications to the Model 1100 include a stainless steel magazine tube, a thicker extractor, a more rigid carrier, a new magazine cap detent system, and a two-piece firing pin retractor spring. To date, 6,800 total rounds have been shot on four of the twenty test guns and 3,000 rounds on two of the ten control guns. Malfunction rates on the test guns are significantly lower than the control guns. No part breakages have occurred on the test guns versus one broken extractor on the control guns.

Model 1100 Restyle - 12 Gauge

Drawings are being revised and updated to include the latest revisions agreed to by Marketing, Production, and Research. Drawings will be ready to transmit by February 28.

New Concept Shotgun

PDS has successfully fired standard percussion primers using ultrasonic energy and spark discharge. A number of electronic trigger sensing and sear release mechanisms have also been demonstrated. A study is being conducted to determine which of the concepts will best meet our design specifications.

Instrumentation for continuous bolt velocity measurements has been built by EDL and successfully demonstrated at Ilion.

Potential composite materials are being investigated.

Model 870 Restyle - 12 Gauge

Heat treating of the choke tube has eliminated yielding of the material when shooting steel shot. The choke tube thread has been redesigned to a 32 TPI standard V-thread, located at the rear of the tube. The amount of rotation during use has been reduced to approximately 3/16 of a revolution in 100 rounds, which is comparable to Briley and Winchoke, and considerably better than Browning. Additional redesigns are being tested in an effort to reduce the amount of rotation even further. A transmittal is expected by the end of February.

RIFLE PRODUCT DEVELOPMENT

New Bolt Action Rifle

Testing is in progress on three short-action prototype guns. Initial measurements (head space, trigger pull, etc.) have been taken. Accuracy is being measured now. Function testing, drop and jar-off testing, and endurance testing will follow.

A meeting was held with P.E. & C. to review product specifications. Follow-up meetings will be held to better define hard-to-process parts.

Research participated in a series of consumer focus panels held during the week of February 10 in Phoenix, Denver, and Houston. A separate report of the findings will be published shortly.

JWB:sps