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H.W. Loney

Research Progress Report

Model 1100 Improvements

Various methods were tried to provide better feed latch retention with the spring retained design. The .400 in. width (.050 spring load) has worked out the best through standard Plant assembly procedures. Ten (10) of this type have been tried and worked well.

Now what?

SO MODEL 570¹⁰ WITH THE .400 IN WIDTH -
FOR BOTH RIGHT & LEFT LATCH - WILL BE
RUN THROUGH ASSEMBLY - ~~REWORK~~

Model 1100 Weighted LT-20, 28 and 410 Sheet Guns

All calculations, design and drawing work are complete for the two additional designs requested by Marketing (weight and C.G. matched to large frame 20 and the 410)

Both new designs are of all steel construction.

Drawings have been sent to the Model Shop. Due date for components has not yet been determined.

Model 1100 Waterfowl Guns

No Research activity.

X56

New gas system and locking system components are in the Model Shop.

Experimental elastomer O-rings have been received from an outside vendor. This vendor has been working under contract to us in an effort to improve the longevity and high temperature performance of the O-ring.

The two experimental pistons of DuPont Vespel SP-1 which failed mechanically during testing have been sent to DuPont for their evaluation. Per their recommendation a different formulation will be tried.

Preliminary high pressure tests have been performed. An X56 with two barrels was tested as was an 870 used for control purposes. Since the 870 is stronger than the 1100 due to receiver differences an 1100 will also be shot. Five loads were used, from a measured 29,000 p.s.i. to an extrapolated 50,000 + p.s.i. (35, 40, 45, 50, and 55 grains of 700X powder). The 870 showed a barrel bulge at 45 grains and the X56 at 55 grains.

Three (3) 870 receivers were damaged (45, 50 and 55 grain loads) and replaced in order to continue testing. The XSG receiver was bulged at the 55 grain level at which time the test was stopped. Also at the 55 grain level the XSG broke a carrier off, blew out the extractor and blew off the fore-end. The XSG gas system was left operational for the test.

Future analysis and testing is planned in this area. The results so far are very encouraging.

Model 870 All Gauge Wood Cosmetics

All drawing work is nearing completion for all gauges. Checking and transmittal remain to be done and should be complete by the end of August.

Model 3200 Sheet Set

No Research Activity

Hydra 66 Improvements

Two more complete with the bolt lock and barrel mounted scope mount

have been transferred to the Test Lab.

These guns will be shot for accuracy and endurance (10,000 rounds each).

Further information is not yet available on scope mount costs.

Models 7400-7600

Three improvements have been identified which substantially improve malfunction rates on the 7400. They are a longer ejection port, a stronger ejector spring and deletion of the buffer. Fifteen guns, three of each available caliber, will be altered to these conditions and tested for function.

The two endurance guns with a .062 square corner radius on the barrel extension have gone to 10,000 rounds each with no problems being seen. This change will be transmitted to the Plant upon completion of necessary drawing work.

Two guns with the max/min. firing pin condition were shot to 7,073 and 5,360 rounds, respectively with no damage to the firing pins. A third gun had broken a tip at 2,520 rounds (rather than the previous

reported 2000 rounds). This test is
in addition to previously reported
dry cycle work in which no
parts were broken.