

ILION RESEARCH DIVISION
MONTHLY PROGRESS REPORT
DECEMBER 1978

MODEL 1100-WEIGHTED LT-20, 28 & 410 GA. SKEET SETS

Marketing evaluation selected the weight system simulating the standard frame 20 Gauge. Small Gauge M/1100's are now being assembled for test purposes. ~~Complete design testing should begin soon after this is completed.~~ Model drawings have been turned over to Process for estimating only.

X S G

The first model of the XSG Shotgun has temporarily stopped endurance testing at 2138 total rounds, due to a broken ^{action} ~~inertia~~ bar. The break occurred in the area where welding, for carrier dog notch adjustment, caused local annealing, ~~and weakening of the inertia bar.~~

This model has been retrofit with the floating one piece piston ~~at 1300~~ rounds and bolt velocity data worked up with a pair of .086 orifice holes ~~at 1300~~

~~to begin testing as soon as the design is completed.~~
New ^{action} ~~inertia~~ bar assemblies ^{have been} ~~are now~~ completed and testing will resume on the same gun after fitting and heat treating. The second ^{test gun} ~~model~~, also containing a floating piston, ^{will be} ~~is now being~~ assembled ^{after} ~~and~~ component parts ^{have been} ~~being~~ heat treated.

The redesigned magazine cap detent system parts, containing larger detent wear surfaces are ^{now being} ~~completed~~ and installed in both test models. ~~These~~ components will begin testing upon resuming XSG model testing.

ILION RESEARCH DIVISION
MONTHLY PROGRESS REPORT
DECEMBER 1978

-2-

XSG (Cont.'d)

A sealing band is being designed for the external piston diameter to promote better sealing and increase bolt velocities for the light loads, plus eliminate tight manufacturing tolerances for the piston.

MODEL 3200 4 GAUGE SKEET SETS

Patterns - The REMINGTON SKEET CHOKE can be used in .410, .28 and 20 gauge 3200 barrels. It cannot be used in 12 gauge because the end of the barrel gets too thin when counter-bored.

Changing the model drawings is all that is required ~~to make~~ to make this ~~change~~ change. This will be complete the first week in Jan.

Loading - The problem of "shell slips by ejector" is being investigated. *have been*
The following solutions ~~have been~~ explored ~~and rejected~~:

- Bending ejectors after assembly - this proved unsatisfactory when tried because of the loose fit of the ejector stems in the dove tail slots.
- Tight chambers - By using a SAAMI minimum chamber, clearance is reduced only .003 inches in the best case. This alone is not enough to cure the problem.
- Shortening the ejector throw - *This* ~~This will help only for high-base~~ ~~cases. and it~~ would require addition parts and changes to the mono-block and ejectors.

ILION RESEARCH DIVISION
MONTHLY PROGRESS REPORT
DECEMBER 1978

-3-

MODEL 3200 4 GAUGE SKEET SETS (Cont'd)

- Ejector sliding at an angle to the bore - this solution may work. *4/10/81*
However, it would require extensive changes to the ejectors and to the mono-block.

*Review
Exp. 1/10/81*
Some competitive over/unders were measured to see how they solved the problem. The key seems to be very tight ejector stem fits in the mono-block. They have clearances from .000 to .005 where ours are .010 to .017.

The solution to the problem appears to be:

1. Tighten up ejector stem fits to the dove tail slot.
2. Retolerance the ejector so that the stem fit is assured.
~~Currently the ejector foot fit to the breech face is exaggerated.~~
~~So the stem can be loose.~~
3. Tighten the chamber to SAAMI min.. *production* And the chambers should not be polished after they are cut.

The details of this solution are being worked out. It is expected that only ejector and chamber dimensions will be affected. Drawings *for prototype parts* should be *modified* during the first week in January. *making parts*
by mid- *lion*

ILION RESEARCH DIVISION
MONTHLY PROGRESS REPORT
DECEMBER 1978

MODEL 870 COMPETITION TRAP

✓ Formal drawing transmittal to Production will be completed upon approval of material and heat treat specifications by Chem. and Met. supervisor *(with live specimen of the target in mind)*

MODEL 700-600 FIRE CONTROL

(Get Target trigger block from process)

A layout of a new fire control has been completed. This fire control uses the sear block as found on the present safety and also has a trigger block that is actuated by the safety lever. Tolerancing and detailing will be done if the concept is accepted.

MODEL 600 CARBINE

Six rifles have been sent to H. Albaugh, Marketing, for the January Marketing focus panel.

MECHANICAL TRAP

Manuals ready for the printers. Should be received by mid-January.