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FIREARMS RESEARCH DIVISION

PROGRESS REPORT

MAY 1980

*Remington Arms Company, Inc.*

## FIREARMS

### PRODUCT DEVELOPMENT

#### MODEL 870 COMPETITION TRAP SHOTGUN

Testing is continuing on locking block and vent rib problems. A shotpeened locking block and a new designed locking block with increased cross sectional area below the locking notch have shown good test results.

The vent rib still remains a problem. Strength of the individual brazed joints is being tested and barrels with standard vent ribs with brazed and welded posts will be ready for test the week of June 2, 1980.

#### MODELS XSG, XPG SHOTGUN DESIGN

All locking system components are in the Model Shop for fabrication. The blank form for the slide block will be made by a vendor using a wire form E.D.M. process.

A chart/schedule is being set up to show the commonality between the auto and pump actions.

The square wire action spring design is being finalized and sample springs are expected in July.

A computer simulation model is now being evaluated for the gas cutoff orifice system. Prototype parts are in the Model Shop for fabrication.

21mm SEISMIC GUN

Three additional bottom retracting breech blocks have fabricated and are in test. Testing will consist of live firing one block to 20,000 rounds and dry cycling two blocks 30,000 cycles each.

The primer setback concept to retract the firing pin has been dropped due to design problems. An inertia weighted firing pin retract system operated by recoil is being designed. One prototype model has been built and is undergoing test.

Patent drawings and inventions reports have been forwarded to Legal Department for patent applications.

MODEL 700 BOLT LOCK

Model drawings are complete for the latest design bolt lock shown at the April Operations Committee Meeting. The drawings are being forwarded to Process Engineering for cost estimating.

Five new models are being prepared for further testing and evaluation.

MODEL 700 FIRE CONTROL

New components are now being fabricated for the safety lever and sear of our original design.

A new design which combines current Model 700 and features of the trigger block and sear operation design is being developed.

BOLT ACTION CARBINE

Functional testing of all calibers has been completed with satisfactory results. Models tested included components of the newest floor plate latch design.

The twenty-five rifles in 7mm-08 caliber for a Marketing field test will be ready for proof testing the week of June 2, 1980.

MODEL 7400 AUTOLOADING and MODEL 7600 SLIDE ACTION CENTERFIRE RIFLES

Five Model 7400 Caliber 30-06 rifles have been fitted with the heavy wall magazine box and are now in test.

Testing of the Model 7600 machine pilot guns in all calibers has been started with completion expected the week of June 2, 1980.

PROCESS DEVELOPMENT

FOUR-SLIDE MACHINE

The Four-Slide Machine has been ordered and is scheduled to be ready for tooling up in August 1980. The high volume part that the machine will be tooled up to produce will be selected during a visit to the four-slide manufacturer's tooling vendor, scheduled for the week of May 27, 1980.

Investigation of support wire E.D.M. equipment is continuing.

INTEGRAL EJECTORS

The 12 Gauge Trial & Pilot run barrels have been satisfactorily field and endurance tested, and authorization given for full production.

Prototype LT-20 barrels are currently being field tested.

RIVETLESS EXTRACTORS

Five extractors have been tested and showed a significant improvement over the previously tested extractors.

Drawings of the rivetless extractor have been transmitted for use in all calibers of bolt action centerfire rifles.

AUTO DRILL LINE

The Albion line is all in place, although some units will not be finally positioned until runoff. The basic system wiring has been reconnected. The chip system has been tied in and shutdown loops are being run. Some millwright work remains to be done. The plumbers are tentatively scheduled to start work the week of May 27, 1980.

ASEA MANIPULATOR

The ASEA programmable manipulator is not capable of dealing with the receiver tolerances in panel polishing. Linear variable differential transformer (LVDT) gage heads from Schaevitz Engineering will be used in receiver repositioning to overcome the tolerance problem. The problem was reviewed with P.S. Hebert and C.F. Morin. They support the selection of LVDT gage heads.

A quote from Schaevitz was received. A test will be performed at the vendor's facility to confirm the capability of the LVDT system to deal with the tolerances.

HIGH ENERGY BEAM APPLICATIONS

Laser Welding

The first sample of laser welded Model 1100 action bar and slide block assembly failed the function test. Strength of the brittle, porous and incomplete weld was inadequate. The necessary weld parameters are being determined by R.L. Freed, ETL Metallurgist.

Next set of samples is due by June 15th for functional testing.

Wood Decorating

Marketing expressed interest in a laser engraved DU emblem for the Model 1100 - LT-20 Ducks Unlimited Edition. Refined artwork will be prepared by June 10th for sample engraving at Lasermation.

Other designs of laser checkering and wildlife scenes were received and they show laser decorating potential. More artwork will be prepared by June 30th to refine the first samples.

5-28-80