LIMITED

MONTHLY REPORT

ILION RESEARCH DIVISION

NOVEMBER 1963

FIREARMS RESEARCH

MODEL 1100

Samples of a number of different types of foreign ammunition have been received through Export Sales for testing in the M/1100. Some extreme variations in pressures have been noted and there is evidence of variations in the powder burning rates. Earlier field testing with the M/1100 was surprisingly successful with all types of foreign ammunition; however, more recent reports have disclosed problems in handling certain types of this ammunition.

Several design improvements have been made as result of pilot testing for the 16 and 20 Ga. guns. They seem to be confined almost entirely to feeding problems with the smaller shells. These have been made to the interceptor latches, barrel support and magazine spring. An additional test lot of some 30 guns is being assembled and if the results continue to be favorable production assembly may be resumed for warehouse.

Reports from the Sales field test for the 20 Ga. guns were generally favorable. In a number of cases there was an expressed need for further reducing the weight of the gun. A weight reduction which approaches one half pound may be accomplished by the use of African mahongany for the fore end and stock. Visual samples have been prepared with the RKW finish and custom checkering. The appearance seems to be good and will be reviewed further with Sales. Additional weight reduction might be accomplished through the use of some alternate materials in the metal parts. However, this would involve compromises in endurance and gun life; therefore, will require further study to appraise the risk.

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MODEL 600 BOLT ACTION RIFLE

The results of field testing appear to confirm the earlier production and Research appraisals and are generally satisfactory. Samples which were reviewed with gun writers also resulted in demonstrations of enthusiasm.

Several design improvements have been made to gain more ruggedness for the stock and al so to reduce cost. These are not significant to effect initial production schedules; however, will be placed into effect as soon as possible.

The additional calibers in 35 Rem. and 222 are in pilot production and should follow for warehouse assembly within approximately one month after the earlier 308 Caliber.

MODELS 510-X, 511-X and 512-X

Pilot operations have been started on a number of the major parts, enticipating initial assembly during the early part of December.

NEW DEVELOPMENTS

An interim program is being prepared to provide for proposed improvements which may be available for the 1965 gun line. These are being aimed primarily for the longer range rim fire program and details are being prepared for preliminary review with Sales Department early in December.

MOLDING RESEARCH

Difficulties in electro-plating of the molded "Delrin" triggers for the Model 76 Rifle have made it necessary to change this material to an ABS plastic. This "Cycolac" provides equivalent qualities as far as the stiffness of the trigger is concerned, and

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MOLDING RESEARCH Continued

also has been proven to be much easier to plate as required to give the appearance desired for this trigger.

Work is continuing on the molded wood laminates in connection with the development of a new program of forming stocks for a new gun line.

HIGH ENERGY RATE FORMING (Dynapak)

A delay in the receiver forming development has resulted because of breakage of tools in heat treatment. This occurred in connection with work with an outside vendor and replacement will be made. However, it does adversely effect the schedule. In the meantime, contacts are being made with both Frankford Arsenal and the new laboratories of General Dynamics in connection with new developments in this field.

The work on developing an extrusion process for breech bolt blanks has been continued. Approximately 20 blanks have been made from the C-1035 material and an additional lot using the C-1118 material. These are being annealed for testing and further investigation as to adequacy.

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