

STATUS

EXPENDABLE CASE SHOTSHELL PROGRAM - ILION

Since mid-August 1974, the Ilion Research group has been working closely with the Bridgeport Ammunition Research group to design shotguns capable of firing the expendable case shotshell. Briefly, the progress made during our 6-month involvement in this program is as follows:

1. Three "expendable case" shotguns have been designed, built and test fired. The first of these shotguns is a test action with a replaceable chamber, to accommodate changes in shotshell design. The second and third test shotguns are a M/870 and M/1100, which fire the expendable case on a single-shot basis.
2. The design for sealing the chamber and firing pin has proven effective in all three test guns. The chamber is sealed by a beryllium copper cup, called the obturator, which is fixed to the breech bolt. The firing pin is sealed by a polyurethane o-ring as chamber pressure forces it rearward.
3. The test firing to-date at Ilion has consisted of firing approximately 75 rounds of various types of 12 Ga. expendable case ammunition. Much more test firing has been done at Bridgeport, and at this point the relatively few number of rounds fired at Ilion has been adequate to guide our design.
4. Two problem areas have been indicated by our testing. The first problem is that occasionally a portion or fragment of the case is left in the chamber after firing. We feel that this can be corrected by minor changes in the chamber and in the structure of the case. The second problem is the reliability of ignition. The misfires we have had in test firing indicate that changes are required in the firing pin design and the primer.
5. The interior ballistics of the expendable case show that operation of a gas-operated semi-automatic shotgun is feasible, as indicated by the shooting of the M/1100.
6. A high-spot Research cost estimate of producing a special M/870 or M/1100 for the expendable case indicates the cost of these guns to be approximately 25% greater than at present. Most of the additional cost is due to the special handling required in production because of the relatively low volume.

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JCHutton:T

EXHIBIT 1

Remington Arms Company, Inc.  
Ilion Research Division

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