

mechanism. Endurance testing of the new Carrier Release revealed a weakness of the latch as result of impact forces from shells being ejected from the magazine. This trouble was eliminated by forming a supporting "pad" on a leg of the disconnecter to provide a "stop" for the Carrier Latch. This seemed to minimize the bending forces and eliminate the breakage.

#### Testing Program

Realizing the importance of good performance for the new shotgun, a testing program was set up to provide conditions covering a wide range of variations. It was decided to assemble a test sample consisting of at least one hundred (100) guns. Firing was performed on the outside, utilizing an "assortment" of shooters and under extreme weather conditions which involved sub-zero temperatures. To further induce "fouling", guns were permitted to be warmed up between rounds on the skeet field. 83

The results are considered unusually favorable and the average malfunction rate seems to be held below the 1% figure.

#### Compensators

It was stated in the conclusions of the meetings of November 8 and 9 that no guarantee could be given the gun would function satisfactorily with all types of compensators under all load conditions. This continues to be a problem with the Cutts compensator when fired with the Winchester and Western 2-3/4 - 1-1/8 trap loads. Pressure-time and velocity analysis completed by the Bridgeport Research Division shows a rapid drop of pressure for these loads as the charge moves forward through the barrel. This would indicate an apparent deficiency of available power at the point where gas is drawn off for the piston. Investigation is continuing to seek other practical means to handle these very light competitive loads with compensators and without having to resort to further redesign of the basic operating mechanism.

There appears to be no problem with other loads in compensated guns, including our own Remington and Peters trap loads. Also, there appears to be no problem of operation with the Western and Winchester light trap loads when fired with plain or vent rib barrels. It may be possible to gain additional power through reduction of gas leakages. This is being considered but may involve use of closer tolerances and perhaps gas seals.

A M/11-48 with a compensated vent rib barrel was fitted with a recoil spring having minimum specification weight, and submitted to limited firing. It appears to handle these light competitive