objective requirements as outlined in the conclusions, and especially to eliminate the characteristic of failures to lock up, it was necessary to introduce a number of design refinements and also further modify the gas piston. In this connection, a spring urged plunger was also added within the Breech Bolt and Slide Assembly. Other refinements made include the Action Bars and the Shell Latches in order to provide more perfect functioning with the new action release 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 disconnector 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.

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.