

In endurance testing of one gun to 12,000 rounds there was one major part failure, a broken piston assembly. Other minor parts breakage and replacements were considered normal for the number of rounds.

Specific endurance testing faults and comments are as follows -

1. Piston breakage - attributed to a defect in the model part.
2. Crack in the front of the magazine tube - associated with the piston assembly. Designers feel a minor design change can rectify.
3. Crack in the top of the bolt after 7,300 rounds - breakage characteristic of the Sportsman-58. If necessary, can possibly be eliminated by a Nylon buffer as in the Model 58.
4. Receiver cracks at rear end of operating handle slot at 1,175 rounds and at the front at 10,000 rounds. These are also characteristic of the Sportsman-58 and apparently cannot be avoided without a major design change. Research & Development recommends a simple receiver decoration to cover objectionable appearance of minute cracks, which have no adverse effect on functioning.

If development of the XS-3 is to continue and manufacture to be undertaken, a project must be authorized. If the gun is to be available for field test before the end of the year and announced on January 1, 1959, with reasonably prompt delivery after that date, it will be necessary to authorize the plant to place orders immediately for several components with eight to ten weeks' delivery. If 16 and 20 gauge versions are to be available in a reasonable time, it will also be necessary to proceed promptly with design and test of these models.

A preliminary project draft has been prepared and can be completed with economics. The Sales Department provided shotgun comparison forecasts with and without the XS-3 for first year (1959) and third year (1961) at two proposed list prices for the XS-3 (\$99.50 and \$109.50). These forecasts assume 12, 16 and 20 gauge field grades in the new gun. A three-year model life will be assumed for purposes of evaluation.

Considerable discussion took place on failures occurring in testing of the ten guns. Research & Development assures that receiver cracking does not occur in the XS-3 earlier or more extensively than in the Sportsman-58. There is less likelihood of cracking in production models of the XS-3 than in the Sportsman-58 because there will be no trap and skeet models. To date there have been no failures of the Sportsman-58 due