

operation, (Exhibit 1B), the size of the sub-lot is 60 pieces). The operator gages the part, and all work to gage goes into the outgoing lot. If he finds in his gaging procedure that the lot may be faulty, he will then do a 100% selective sort and dispose of the scrap. Here it's determined whether or not the part can be salvaged, in the same machine or through an alternate process. The part then goes through the same basic sequence of operations.

Quality Control assists Production by auditing the operations. Machine audits are taken at the machine, (the machine audits are not to be confused with machine studies). To find out whether or not the machine is producing parts to the specified tolerances, a significant consecutive piece sample is taken at the machine. As soon as the audit is finished, the results are reported to the operator and the foreman. If there are no defects, everything goes on as usual. If defects are found, Production screens and checks all the parts.

At the end of the line, a lot audit is taken. This is different from the machine audit in that the lot audit quantity is a random sample taken out of an outgoing basket. The audit procedure then follows the same steps as the machine audit.

This brings us to our last type of audit....., the Finished Product Audit, (Exhibit 1D). The parts leave the dispatch area and go into sub-assembly. At sub-assembly, audits are done much the same way as lot audits. From sub-assembly the components go to final assembly, then gallery test. This is probably as good a place as any to point out that last year, 1973, we fired 2,194,000 shot shells, 1,870,000 rounds of center fire ammunition, and 2,404,000 rounds of rim fire for a total of 6,468,000 rounds of ammunition in product test.

After the guns pass the gallery test, they go to final inspection. If they don't pass the gallery, they go back to repair and the cause of the malfunction is identified and corrected and the gun is returned to the gallery. After final inspection or from the warehouse, the finished product audit is performed. The only difference between the warehouse audit and the finished product audit after final inspection is that the packaging is checked for such things as cleanliness, content, and proper assembly.

The finished product audit is handled in three phases. Phase 1 - the gun is checked over for safety features; visual check much as is received in final inspection; some gaging is done, for example, the headspace and feeding plugs are run through the shotguns. Headspace is checked in the rim fire and center fire also. Then the gun is run through a manual operation sequence with dummy ammunition.

Phase 2 is the gallery test. The gallery test in this instance is not just a repeat of the Production gallery test, but is about 4 to 5 times as severe. For example, the 1100 shotgun gallery test consists of about 8 rounds. The audit test can go as high as 40 rounds. This test includes competitive ammunition and shoulder testing. Any defects found in the audit test must be verified in the gallery or re-verified in an extended audit test. If it isn't verified in the audit it is not tabulated. Once the gallery test is performed, Phase 3 takes over. Again there is a visual examination to make sure nothing happened to the gun during the audit, gaging is repeated to make