

December 2, 1968

Component Quality Control

In the manufacture of firearms components at Ilion, each production operator is responsible for maintaining the required level of quality established and proven for each operation he performs. This responsibility includes machining, heat treat, wood and metal finishing, coloring, assembling and packaging. In all cases, the Process Record (Exhibit E) establishes operating procedures, tolerances and gaging requirements. While the amount of time expended on inspection by production personnel varies with the job assignment or process complexity, the direct production people at Ilion spend approximately 11% of their time inspecting their work.

The level of quality attained by Production is measured and analyzed by the Quality Control group of the P E & C Section (Exhibit F). Their analysis frequently results in gun design change, tolerance changes or process revisions. The Area Auditors measure approximately 175,000 dimensions per year. 83

Firearms Assembly Procedures

Purchased parts and manufactured components are fitted into both assemblies and sub-assemblies identified by the assemblers personal stamp. Precise written procedures are prepared for the assembly of firearms. In addition to checking the quality of finishes and the fit of parts and overall appearance, each gun is functioned with dummy ammunition and master plugs to measure capability to handle the extreme range of ammunition sizes. Head space is measured. The approximately 1000 head space gages at Ilion are serially numbered and periodically inspected. Suspect gages are destroyed and replaced.

Gallery Testing

Following assembly, the P E & C Section subjects all firearms to a series of firing tests. All center fire rifles and shotguns are proofed and so stamped on the barrel. In addition a series of functional and accuracy tests establish the capability of the firearm to handle both Remington and competitive ammunition in various loads or bullet weights. The Ilion Gallery fires approximately 8,000,000 rounds of ammunition each year. Firearms which do not pass the gallery tests are returned to the assembler for repair. Passed guns are routed to the finished gun inspector prior to packing.