All of the guns were received in plain cardboard boxes, without any company identifying marks, inside an inner box had the company name and gun identification. This shipping technique might have been used to protect the gun in transit against pilferage and rough handling. Half of the guns received were packed in a molded styrofoam box insert. The technical data on each gun was recorded and is included in the supplement.

The competitive o/u shotguns were field tested, their appearance characteristics were checked, and they were completely disassembled so their method of manufacture could be noted and their internal systems studied.

It was found that some of the over and under shetguns which appeared to be real good buys at the start of the test did not meet the general functional requirements expected of a shetgun of this type. The foreign gunmakers are using the latest in gun making techniques to get away from hand labor. The guns showed evidence of G.F.M. swaged barrels, precision cast parts, die cast parts, welded frame construction, machine cut charkering, machine cut engraving, and plastic components. The European guns tend to be better made than do the lapanese guns, but the Japanese guns generally sell for somewhat less than do the Eruopean guns. All the current guns investigated tend to have similar design characteristics. The Browning Superposed was the best made and best performing gun tested.

## Design Analysis of O/U Concepts

There are four distinct locking systems presently being used on current mass-produced o/u shotguns. The Browning type locking system is used by the majority of the o/u manufacturers. The locking system determines how the gun will look (long vs. short frame, wide vs. narrow frame), how it will handle, and how the internal systems will operate (ejectors, hammer cocking, break lever, etc.). The reason so many o/u shotguns resemble the Browning is because they use the Browning type locking system.

The majority of the o/u shotguns investigated have their barrels silver soldered into a common barrel extension. The gun locking lugs are normally machined on the barrel extension. All the guns investigated, with the exception of the Krieghoff Model 32, had barrel side ribs between the barrels.

