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M/700 BOLT HANDLECONCLUSIONS

Comparative testing of M/600 and M/700 production run bolt assemblies shows that the primary extraction cam surfaces are equal in durability when tested for repeated closing of the bolt assemblies in receivers. Other things being equal the M/700 bolt handle should be satisfactory from cold formed material. The one factor that should be given consideration is the inertia effect of the handle during firing of heavy loads, specifically the knurled knob on the end of the handle that is attached with a small neck.

OBJECTIVE

The present M/700 bolt handle is an investment cast part made from 2335 or 2340 material. It has been proposed to make the bolt handle from 1010 or 1018 material and cold form. This is the present process used on the M/600 bolt handle and would be a cost saving on the M/700. We have been told the vendor feels he can make the M/700 by the cold forming method.

TEST

A dry cycle test was set up to compare the M/600 cold formed bolt handle with the M/700 investment cast bolt handle. The primary cam surface, upon closing of the bolt assembly, is the critical surface anytime in the cycle.

EQUIPMENT

An air motor with a 1-1/2" Dia. double acting piston with a 5/8" Dia. by 6" long piston rod. An 8" piston rod extension weighing 11 ozs. 50 psi air pressure. Travel of bolt - 3" with approximately 90 cycles per minute.

PARTS TESTED

M/700 Production run Short Receiver -- Rockwell hardness Rc 38-39
M/700 Production run Bolt Assembly -- Rockwell hardness Rc 43-45
M/600 Production run Bolt Assembly -- Rockwell hardness Rc 30-35
M/600 Production run Receiver -- ----- Rockwell hardness Rc 40-43
Hardness checks made as close as possible to primary extraction cam surfaces on bolt and receiver.

M/700 BOLT HANDLE

- 2 -

September 23, 1964

RESULTSM/700 Receiver and Bolt Assembly

100 cycles	-	showed slight upset on Receiver and Bolt primary extraction cam	
1000 "	-	upset more and burr forming on bolt cam.	surface.
3000 "	-	same but burr along edge of bolt cam seems worse.	
5000 "	-	same as at 3000 cycles.	
10000 "	-	no change.	

M/600 Receiver and Bolt Assembly

100 cycles	-	slight upset as on M/700 Bolt & Receiver	
1000 "	-	upset more and burr forming on bolt cam	
3000 "	-	same as at 1000 cycles	
5000 "	-	"	"
10000 "	-	"	"


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