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## RESEARCH ARTICLE

# TEST FIRING OF RIMMED AND RIMLESS RIFLE CARTRIDGES FROM SINGLE BARREL BREECH LOADING UNUSUAL/ UNRIFLED/HOMEMADE FIREARM

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**ABSTRACT**

Test firing from unusual/unrifled/homemade firearm plays very important role in Forensic Ballistics. Single or double barrel breech loading countrymade firearms can be prepared. Unrifled firearms are imitation model of standard weapon. These firearms are manufacturing in some places of India. All country made/homemade/desi-katta/handgun designed to chambered appropriate diameter of cartridges. The body diameter of cartridge is smaller than the breech end diameter of barrel. Headspace of barrel is greater than the body diameter of cartridge, but rim diameter of rimmed cartridge always greater. If there is difference then, test firing problem arises. The Ballistics expert regularly test firing carried out. Test firing of each firearms were performed in the firing gallery. For test firing branded firing stand was employed. After test firing, test fired bullets recovered from firing box containing treated cotton. In this study, single barrel breech loading (SBBL) homemade handgun concerned. The headspace of barrel exactly chambered 8 mm rifle cartridge. Investigating Officer sent unrifled single barrel breech loading homemade firearm and 7.62 mm rimless long rifle cartridges. Test firing was performed by providing cotton thread at the cannular of 7.62 mm rifle cartridge.



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## INTRODUCTION

A long ago countrymade /unrifled firearms being well known. Which are manufactured by using metal pipe, plate, spring, nail etc. Main parts of single barrel breech loading (SBBL) countrymade handgun are barrel may be narrow or straight, hammer, firing pin, trigger, trigger guard, barrel lock and butt. The main spring present inside butt stock of handgun. The mechano of available parts to form SBBL countrymade handgun. The design of barrel tapered or straight at muzzle end. The breech end of barrel chambered appropriate diameter of cartridge. The cartridge chambered called as headspace. The headspace accommodate and fired cartridges such as.22" rimfire, .32" revolver, .38" revolver, .303" rifle, 8mm rifle, 12 bore shotgun, etc. The SBBL or DBBL countrymade handgun having hammer cocking for firing. The headspace / breech end designed to insert cartridge of appropriate body diameter. Indian Ordinance Factory of rimmed 8 mm hunting rifle cartridge of narrow shaped having head stamp marks (HSM) KF 8 MM. Other straight shaped 7.62mm service rimless rifle cartridge having head stamp marks (HSM) OFV 7.62.

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The 7.62 mm long rifle cartridge have cannular at the base. After firing rimmed and rimless cartridge cases ejected with the help of ejector.

### Experimental

The single barrel loading (SBBL) country made/homemade/ desi-katta/handgun received in Forensic Science Laboratory. Mumbai India, along with 7.62 mm long self loading rifle (SLR) cartridges. The phenomenon of fired rifle cartridges discussed here. Ballistics experts of ten encounter problems of countrymade firearms. Physical parameters of SBBL countrymade handgun.


**Figure 2. Countrymade handgun and cartridges**

| | |
|---|---|
| Weight of the handgun | 700 gm |
| Length of the barrel | 12.8 cm |
| Diameter of breech end | 1.27 cm |
| Trigger pull | About 5.0 kg |

Test firing from countrymade smooth bored barrel handgun.

**Figure 2. 7.62mm rifle cartridge with cotton thread packing**

The 8 mm rifle cartridge loaded in the barrel of handgun. The loaded barrel of handgun mounted in firing stand. With the help of remote the cartridge was successfully test fired.

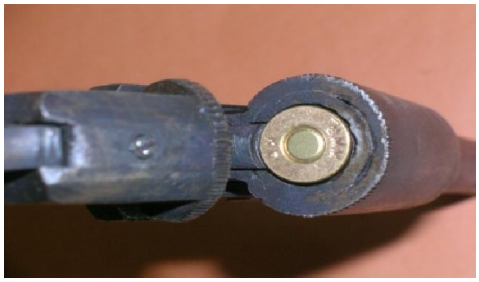

**Figure 3. 8 mm rifle cartridge**

The test fired bullets retrieved from treated cotton inside the firing box. The bullets showing superficial brushing marks. The handgun removed from firing stand and barrel opened by pressing barrel lock. The cartridge cases ejected from headspace it is found swollen in state. Outer side of cartridge cases having headspace brushing marks.


**Figure 4. 8 MM rifle test fired cartridge**

- The 7.62 mm long rifle cartridge loaded in the barrel of handgun, by providing cotton thread at cannular. Similar above test firing successfully carried out. The test fired bullets having brushing marks. The cartridge cases ejected from headspace of barrel. The major difference found that the cartridge cases busted and bulging in state. Outer side of cartridge cases having headspace brushing marks.


**Figure 5.7.62mm rifle test fired cartridges**

- The cartridge cases of 8 mm and 7.62 mm rifle cartridges having indentation mark, breech face marks and headspace marks.
- The test fired bullets of 8 mm and 7.62 mm rifle cartridges having superficial lengthwise brush marks. After test firing the cartridge cases & bullets bears individual characteristics known as tool marks.
- These characteristics tool marks on cartridge cases and bullets compared with the help of comparison microscope.

## RESULTS AND DISCUSSION

The cartridge cases of 8mm and 7.62mm rifle cartridges having the firing pin hit mark, breech face marks and headspace marks. The firing pin impression marks, breech face and barrel marks of the headspace can be compared by microscope. Test fired soft nose and pointed bullets showing internal barrel marks. The barrel marks of so funusual/homemade known as brushing. Appearance around the softnose 8mm rifle bullet have more barrel patches. The difference between of bullet diameter softnose 8mm fired copper jacketed bullet having more brushing marks than the pointed7.62mm fired copper jacketed bullet. Both bullets showing superficial length wise brushing marks microscopically tally. The test fired bullets of 8mm and 7.62mm rifle cartridges having super ficial lengthwise brushing marks of barrel. Two different calibers cartridges test fired from a single barrel of can be compared by microscopically. After test firing at cartridge cases and bullets bear individual characteristics of barrel known as tool marks.

### Conclusion

It is a necessary to accommodate cartridge exactly inside headspace. The headspace may be slightly larger than the body diameter of cartridge. If there is a difference between them, then firing problem arises. Generally barrel of firearm prepared to insert appropriate diameter of cartridges. Equivalent diameter of cartridge and headspace can be fired successfully from the firearms. The headspace is partly greater than body shape of the cartridges then, test firing manually carried out. The fired bullet cannot hit to target at fixed point. Test fired bullets of two different caliber cartridges do not having same

patches of brushing marks. The test fired bullet of 8 mm rifle cartridge having more brushing marks and the 7.62 mm long rifle bullet having less brushing marks. Due to individual characteristics/tool marks of two different calibers bullets under microscope can be matched, related to firing pin impression breech face marks, ejecter/ extractor mark and headspace marks on outer side of cartridge case.

## REFERENCES

Heard, B.J. 2011. Handbook of Firearms and Ballistics: Examining and Interpriting Forensic Evidence Wiley ISBN 978-0-470-69460-2.

Jain S. K., Singh B. P. and Singh R. P. 2004.Indian Homemade Firearm-A Technical review, *Forensic Science International*, 144, 11-18.

Modi, J. K. and Nigam, C. 1984. Improsed Firearms Verses RegularFirearms. *Forensic Sci. Int*., 26:199-205.

Pal, A. and Hemanta Kumar, P. 2014. Examination of Some Country made Smooth Bore Firearms. *Journal of Forensic Science & Criminology*, Vol.2Issue5 1-6.

Pal, A. and Pratihari, H. K. 2014. Examination of Some Homemade/Improsed Firearms and Their Ammunition. *AFTE journal*, 46: 234-7.

Sinha, J. K. 2015. Forensic Investigating of Unusual Firearms Ballistics and Medico Legal Evidence, Taylor & Francies ISBN 978-1-4665-7137-2.

Thejaswi, H.T. and Kumar A. J.2013.Desi-katta (Country made Firearm) and Wound Ballistics A Review. *J Indian Acad Forensic Med.,* 35:165-9.

Waghmare, N. P., Manna. A., Rao. M. S. and Sen. P.K. 2003. Statistical analysisof impactparameters ofsoft nosebullet fired on windowpane. *Forensic Sci. Int.* 181-187.

Waghmare, N.P., Suresh, R., Puri, P., Varshney, K.C., Anand V., Kompal and Anubha Lal, 2012. Modern Trend of country made/ used in the capital of *Indian J Forensic Res*., S1, 1-7.

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