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Modern Trend of Country Made /Improvised Pistols Used in the Capital of India

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Abstract

Now a days crimes relating to firearms and ammunition have dramatically increased in northern part of India. It has been observed that Country made pistols of 8mm/.315" bore; Improvised pistols of 7.65mm/9mm calibre, .32"/.38" calibre are randomly used by criminals in Delhi and NCR regions. On the basis of crime cases received in the Forensic Science Laboratory for examination, the smooth bore illegal country made firearms chambered for pistol, revolver and rifle cartridges are very often encountered in criminal cases all over India and other developing countries. The possibility of identifying types of smooth bore firearms of country made and improvised pistols has been studied.

On analysis of crime cases received for forensic examination, it has been found that 75% crimes are committing by 8mm/.315" calibre by country made pistols, 20% by 7.65mm calibre/bore improvised pistols and remaining 5% crime by other firearms like 12 bore country made pistol, .32"/.38" calibre/bore improvised pistols.

In present study, firearms details relating to length of barrel, total length of firearms, internal diameter of barrel at muzzle end and breech end have been studied in view of forensic significance and may be useful for Forensic scientists, Law Enforcement Agencies, Police Officers and Judicial Officers etc.

Keywords: Country made pistol; Improvised pistol; Ammunition; Firearm details; Barrel length; Muzzle diameter.

Introduction

Criminals, dacoits, terrorists and antisocial elements in India use wide variety of firearms and their ammunition. Firearms are of wide range starting from ordinary shotgun to sophisticated military weapons, shotguns/hunting weapons as well as improvised / country made firearms. Shotguns including both breechloader and muzzle loaders, pipe guns are most popular among the criminal and antisocial elements. 12 bore, 8mm and 7.65mm cartridges are popular because of their easy availability through open licence arms and ammunition



Figure 1: Country made pistols of 8mm/.315" calibre (without trigger guard).



Figure 2: Country made pistols in open condition.



Figure 3: Country made pistols with trigger guard.

stores. Pipe guns or country made guns are frequently assembled from cheap steel pipes by antisocial persons.

The bore early type of small arms had smooth surface. The projectile consisted of a lead ball, and the powder charge as well as the projectiles were introduced into the chamber at the breech from the muzzle end of the bore, hence the name muzzle loader.

Materials and Methods

In the present systematic study, country made pistols of 8mm/.315" calibre, improvised pistols of 7.65mm, 9mm, .32" and .38" calibre which

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were received for crime examination in Delhi and used to create a data base .Scientific analysis of country made pistols of 8mm/.315" bore and Improvised pistols of 7.65mm bore have been studied. Comparative study of physical parameters of country made pistols and improvised pistol were done in the laboratory. Overall length, barrel length and the internal diameter of barrel at muzzle ends were measured and compared among each other.

Measurement of 80 samples data each of barrel length, total length of firearms, internal diameter of barrel at muzzle and breech end were taken for the study. They were measured by electronic venire calliper



Figure 4: Country made pistols in open condition.



Figure 5: Improvised pistols of 7.65mm calibre.



Figure 6: Improvised pistols with barrel lock condition.



Figure 7: Improvised pistols with barrel lock above side.



Figure 8: Country made revolver of .38" calibre.



Figure 9: Country made revolver in open condition Shows a cylinder.



Figure 10: Country made revolver shows a cylinder with empty chambers.

made by Mitutoyo, Japan and data was statistically analysed. Details are given in table 1, 2, 3, 4 & 5. The difference between country made and improvised pistols is given in table 6. Country made pistols of 8mm/.315" bore, improvised pistols of 7.65mm calibre and other bores firearms used Delhi & NCR in the commission of crime. Detailed photographs of various countries made pistols and an improvised pistol were taken and given in Figure 1 to 10.

Result and Discussion

In country made pistols, length of barrel of 8mm/.315" and 12 bore are 112mm to 212mm (approx.) and 52mm to 65mm (approx.) respectively, Improvised revolver of .32" bore is 75.5mm to 79.17mm (approx)., country made pistol of .303" bore 113mm to 135mm (approx.) and country made revolver of .32" bore is 76mm to 110mm (approx.).

It has also been observed that marksmanship and material used for country made and improvised firearms is crude steel which is easily available in commercial market. These firearms are not having any standard specifications and calibrations.

After test firing, it is observed that all fired cartridge cases were bulged and made cylindrical in shaped in country made pistols of

Country made pistol (8mm)	Barrel length (in mm)	Total length (in mm)	Breech diameter (in mm)	Muzzle diameter (in mm)
	112	240	13.54	8.67
	110	230	12.62	8.53
	135	262	12.74	8.91
	102.73	230	12.91	8.17
	156	249	13.44	8.74
	109	200	12.68	9.44
	125	270	12.62	8.54
	190	300	12.67	9.49
	139	245	12.62	8.05
	152	250	12.73	9.14
	135	252	12.10	9.60
	100	220	12.68	8.62
	177	310	12.85	8.95
	212	350	12.10	8.39
	111	230	12.71	9.38
	127.05	260	12.35	9.00
	127	237	12.55	8.98
	107.36	230	12.14	8.45
	130	240	12.84	8.60
	151	260	12.73	8.58
	128.63	260	12.60	9.28
	152	270	12.73	8.32
	143.55	250	12.81	7.97
	133.42	285	12.63	9.47
	171	297	12.85	9.20
	165	293	13.40	9.57
	165	270	13.04	11.24
	112	235	14.77	9.31
	131	235	12.5	8.77
	130.98	235	12.54	8.53
	110	225	12.32	8.72
	118.20	225	15.16	8.29
	157	268	12.71	7.77
	135.06	250	12.46	8.11
	144	260	13.05	8.75
	105	215	12.80	8.78
	125.68	238	14.05	9.34
	158	280	13.08	8.38
	195	330	13.78	10.10
	150	270	12.40	8.52
	183	300	13.72	12.85
	131.07	220	12.66	8.29
	155	270	12.66	10.57
	181	300	12.10	12.08
	152	252	12.36	8.58
	114.94	240	12.24	8.80
	130	225	12.58	8.16
	170	300	12.77	8.61
	140	250	12.58	9.65
	134.20	250	13.40	8.88
	97.33	215	12.47	8.70
	145.45	275	12.08	8.51
	182	284	13.92	8.96
	153	293	12.06	9.45
	127.28	245	13.84	7.83
	150.82	280	12.46	8.76
	163	300	14.66	8.88
	145.39	272	12.65	8.34
	135.75	235	12.79	8.76

	130	280	14.29	9.28
	149.92	272	12.86	9.28
	200	300	13.02	8.54
	152.90	290	12.45	9.34
	150	285	15.58	9.41
	125	200	13.21	8.98
	140	245	14.60	8.50
	155.73	300	15.94	8.87
	109.08	221	14.98	9.81
	116.52	233	17.34	8.87
	137.04	28.2	15.09	9.34
	138.51	250	12.96	8.63
	146.61	270	11.73	8.76
	131.45	250	13.06	8.53
	140	250	12.38	8.95
	155	236	13.37	9.05
	137.13	240	12.68	8.79
	127	240	12.42	9.52
	137.13	240	12.23	8.80
	120	252	13.20	9.45
	122	248	12.60	9.09

Table 1: Technical details of country made pistols of 8mm/.315" bore: All country made firearms are smooth bore.

Improvised pistol (7.65mm)	Barrel length (in mm)	Total length (in mm)	Muzzle diameter (in mm)	Smooth bore or Rifled firearms	No. of lands and grooves	Direction of rifling Left hand side (LHS)/ Right hand side (RHS)
	190	990	7.76	Rifled	6	LHS
	100.89	200	7.50	Rifled	6	LHS
	99.32	195	8.04	Rifled	6	LHS
	89	185	7.75	Rifled	6	LHS
	96.31	190	7.43	Rifled	5	RHS
	89.30	200	7.45	Rifled	6	RHS
	102.04	200	7.55	Rifled	6	LHS
	100.01	205	7.52	Rifled	5	RHS
	101.90	195	7.92	Rifled	5	RHS
	99.05	195	7.83	Rifled	8	RHS
	100	196	8.08	Rifled	6	LHS
	98.96	195	7.68	Rifled	4	LHS
	94	185	8.07	Smooth	6	LHS
	97	192	7.98	Rifled	6	RHS
	101.18	198	7.26	Rifled	6	RHS
	102.81	200	8.16	Rifled	6	LHS
	101.60	190	7.65	Rifled	6	RHS
	92.04	190	7.82	Rifled	5	LHS
	100.62	192	7.70	Rifled	6	RHS
	109.64	210	7.98	Rifled	4	RHS
	97.15	200	7.86	Rifled	5	RHS
	92	200	7.97	Rifled	6	RHS
	78	170	8.21	Rifled	6	LHS
	99	195	7.14	Rifled	6	RHS
	107	206	8.01	Rifled	6	LHS
	108	204	7.95	Rifled	6	LHS
	107	197	7.00	Rifled	6	LHS
	100	200	7.82	Rifled	6	RHS
	96	193	8.12	Rifled	4	RHS
	92	193	8.00	Rifled	4	RHS
	100	200	7.60	Smooth	4	RHS
	100	192	8.10	Rifled	5	RHS
	100	210	7.92	Rifled	6	LHS
	100	197	7.57	Rifled	6	LHS
	95	195	7.98	Rifled	6	LHS

	99	198	7.88	Rifled	6	LHS
	98	198	7.85	Rifled	6	LHS
	100	197	7.80	Rifled	6	RHS
	95	192	7.90	Rifled	6	RHS
	90	192	7.88	Rifled	6	RHS
	95	185	7.60	Smooth	6	RHS
	97	195	7.91	Rifled	8	RHS
	75	173	7.98	Rifled	5	RHS
	100	195	7.86	Rifled	6	LHS
	101	200	7.95	Rifled	6	LHS
	112	220	7.70	Rifled	6	LHS
	90	180	7.59	Rifled	4	RHS
	97	186	7.59	Rifled	6	RHS
	88	182	7.65	Rifled	6	RHS
	113	220	7.8	Rifled	6	LHS
	205	995	8.19	Smooth	6	LHS
	101	197	7.90	Rifled	6	LHS
	88	185	7.63	Rifled	8	RHS
	100	195	7.70	Rifled	6	LHS
	101	211	7.84	Rifled	6	RHS
	80	174	7.80	Rifled	5	RHS
	88	280	8.18	Rifled	6	RHS
	95	193	7.68	Rifled	6	RHS
	90	190	7.69	Rifled	6	RHS
	103	195	8.60	Smooth	6	LHS
	860	176	7.94	Rifled	4	RHS
	9.8	198	8.03	Rifled	6	LHS
	100	196	7.82	Rifled	6	LHS
	88	178	8.78	Rifled	5	RHS
	78	160	8.00	Rifled	6	RHS
	96	180	7.44	Smooth	6	RHS
	105	205	7.18	Rifled	6	RHS
	96	195	7.59	Rifled	6	RHS
	97	197	7.52	Rifled	5	RHS
	80	180	8.86	Rifled	8	RHS
	93	201	7.79	Rifled	6	LHS
	98	198	7.54	Rifled	6	LHS
	90	180	7.44	Rifled	6	LHS
	106	200	7.81	Rifled	5	RHS
	84	190	8.08	Rifled	6	LHS
	92	194	7.22	Rifled	6	RHS
	97	190	7.54	Rifled	6	RHS
	97	205	7.68	Rifled	6	LHS
	95	190	7.89	Rifled	8	RHS
	103.09	193.04	7.09	Rifled	6	LHS

Table 2: Technical details of Improvised pistols of 7.65mm bore.

8mm/.315" bore while in improvised pistols, all fired cartridges cases were protruded and bulged. Almost all improvised pistols of 7.65mm and 9mm bore were having fake registration number like 111, 777, AUTOMATIC PISTOL, MADE IN USA/ITALY embossed on the body and other portion of barrels. In most of the cases, spelling mistakes were also found in many improvised pistols. On the other hand, .315 along with the year of manufacturing were also encrypted on country made pistol body portion of 8mm/.315" bore in few cases [1-5].

Effective Range of Country made Pistol and Improvised Pistols

It is expected for ballistics experts to have an idea of the effective ranges of various types of firearms encountered in crimes. The effective

range of a firearm may be defined as the range which a man size target can be hit with certainty. Generally Country made/improvised firearms have capacity to kill a person depending upon range of firing, velocity loss into the target and last but not least the portion of body where the projectile hits. These country made /improvised firearms are crudely made from cheap steel tubes, sanitary/water pipes etc. It is a fact the criminals improved a firearms to fire the regular cartridges available with them in local market [1-5].

The 8mm/.315" and 7.65mm bore ammunition are available in open licence shops. In Delhi ,NCR and neighbouring States like UP, Haryana & Rajasthan, Hence, criminals are mostly using country made pistols of 8mm/.315" bore and improvised pistol of 7.65mm bore. Some of these country made/improvised firearms are so well made that

Improvised pistol (9mm)	Barrel length (in mm)	Total length (in mm)	Muzzle diameter (in mm)	Smooth bore/rifled firearms	No. of lands and grooves	Direction of rifling Left hand side (LHS)/ Right hand side (RHS)
	109.09	210	9.52	Rifled	4	RHS
	115	217	8.76	Smooth bore	-	-
	109.89	214	8.86	Rifled	6	RHS
	111.02	225	9.39	Smooth bore	-	-
	116.67	225	8.81	Rifled	6	RHS
	118	210	8.54	Rifled	8	RHS
	116	220	8.93	Smooth bore	-	-
	120	225	9.03	Smooth bore	-	-
	107	207	9.61	Smooth bore	-	-
	103	220	9.06	Rifled	6	LHS
	111	221	7.41	Rifled	6	LHS
	110	210	8.68	Smooth bore	-	-
	121	218	8.82	Smooth bore	-	-
	99	202	9.09	Smooth bore	-	-
	116	225	8.82	Rifled	6	LHS
	120	219	8.91	Rifled	6	RHS
	110	220	9.15	Smooth bore	-	-
	112	214	8.89	Smooth bore	-	-
19)	114	210	8.76	Rifled	6	LHS
20)	112	207	9.12	Rifled	6	RHS

Table 3: Technical details of improvised pistols of 9mm calibre.

Country made pistol (12 Bore)	Barrel length (in mm)	Total length (in mm)	Muzzle diameter (in mm)	Smooth bore or Rifled
	151	300	16.66	Smooth bore
	173	302	19.46	Smooth bore
	282	430	16.70	Smooth bore
	175	320	19.29	Smooth bore
	182	300	20.04	Smooth bore
	180	315	18.83	Smooth bore
	194	338	18.08	Smooth bore
	136	276	21.34	Smooth bore
	160	280	17.45	Smooth bore
	151	280	16.32	Smooth bore
	149	281	18.25	Smooth bore
	160	270	19.25	Smooth bore
	176	285	18.07	Smooth bore
	160	290	22.03	Smooth bore
	153	290	17.62	Smooth bore
	114	251	17.59	Smooth bore
	170	320	17.69	Smooth bore
	160	307	18.37	Smooth bore
	155	290	18.20	Smooth bore
	160	290	18.42	Smooth bore

Table 4: Technical details of country made pistols of 12 bore.

Country made revolver (.32")	Barrel length (in mm)	Total length (in mm)	Muzzle diameter (in mm)	Smooth bore or Rifled firearms	No. of lands and grooves	Direction of rifling Left hand side (LHS)/ Right hand side (RHS)
1)	76	223	7.90	Smooth bore	-	-
2)	108	219	7.66	Smooth bore	-	-
3)	60	220	7.87	Smooth bore	-	-
4)	80	207	8.58	Smooth bore	-	-
5)	60	230	8.60	Smooth bore	-	-
6)	52	199	8.60	Rifled	6	LHS
7)	75	230	7.65	Rifled	6	LHS
8)	119	220	7.84	Rifled	6	RHS
9)	75	222	7.74	Smooth bore	-	-
10)	64.46	230	8.23	Rifled	6	RHS

Table 5: Technical details of country made revolvers of .32" bore.

S.No.	Country made pistols	Improvised pistols
1.	Country made pistols are manufactured by ordinary blacksmith without any standard specification or materials used.	Improvised pistols are manufactured locally with proper knowledge of standard weapons and these are the copy (imitation) of standard caliber pistols.
2.	Different types of ammunition can be fired from country made pistols like 8mm/.315", .303" and 7.62x51mm caliber (using suitable adapter).	It can be used with proper caliber ammunition for which it has been made.
3.	Generally, these are single shot hammer action pistols without magazine.	Generally, these are semi-automatic pistols with magazine.
4.	Only one cartridge can be fired at a time. Next cartridge can be loaded manually.	Number of cartridges loaded in magazine (upto 8 to 10) can be fired at a time.
5.	Generally, rimmed cartridges are used to fire.	Generally, only rimless or semi-rimless cartridges can be fired.
6.	Generally, these are smooth bore firearms.	Generally, these are rifled as well as smooth bore firearms.
7.	No safety mechanism like safety catch are found present in country made pistols.	Generally, a safety notch is present in improvised pistols.
8.	The firing pin present in country made pistols can be easily replaced.	The firing pin present in improvised pistols are difficult to replace.
9.	The barrels of country made pistols are generally manufactured by iron pipe, sanitation pipe etc.	The barrels of improvised pistols are manufactured with the help of machine like lathe machine etc.
10.	The shape of country made pistols are not look like as standard weapon.	The shape of improvised pistols are look like as standard weapon.
11.	The barrel catch lever is present for opening and closing the barrel.	In this case magazine catch is present in improvised pistols.

Table 6: The difference between country made and improvised pistols.

they can be mistaken to be a factory made on a cursory look. It is also observed that, the barrels of country made pistol are usually, smooth bored and rifling's are made in an improvised pistols of 7.65mm, 9mm. Sometimes these rifling are incomplete, straight in the barrel and there is no consistency in diameter of lands and grooves. Finishing of lands and grooves also not as like to standard rifling in regular firearms [6-8].

It has also been observed that muzzle velocity developed in such type of firearms usually much less than the normal velocity of the cartridge used. It has been found that internal diameter of barrel at muzzle end of an improvised pistol of 7.65mm bore are found to be less than the actual diameter of standard pistol of same calibre. Here also no such standard factory parameters were applied for making muzzle diameter of barrel. It varies from 7mm to 8.86mm (approx.). Overall length of improvised pistols is also vary from 16.5mm to 22mm (approx.) and no such specific standard were adopted by 'the criminals/illegal firearm manufacturers.

Conclusion

Average total length of country made pistols found to vary from 140.64mm (approx.) and 258.08mm and in Improvised pistols from 108.64mm (approx.) and 214.86mm (approx.). Internal diameter of barrels in country made pistols and improvised pistols at muzzle ends were found to vary from 7.79mm and 8.99mm (approx.) respectively.

It has also been observed that total lengths of 7.65mm bore improvised pistol are different from each other and also vary from

170mm to 220mm (approx). Firearm details of country made pistol and improvised pistols in this paper may be useful to Law Enforcement Agencies and Police Officers, Experts of Forensic Ballistics, Law Officers and Judicial Officers etc.

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