

revolver cartridges are made up with paper between the metallic case and the powder charge with the object of preventing the deterioration of the powder from contact with the brass case. When these cartridges are fired the paper lining will often be found to be driven between the front face of the cylinder and the breech of the barrel, so jamming the action. *No revolver cartridges which contain any paper should ever be used.*

As the ordinary customer cannot be expected to know a good from an inferior revolver he is recommended to make his purchases from a well-known gunmaker, who, for his own credit, will not supply a bad article. Indeed, in order to form an opinion of the workmanship of a revolver it is necessary to strip it and examine each part with care, and only a gunmaker or one who has made small arms a study is competent to do this.

It is by no means easy to make good shooting with a revolver without a certain amount of practice, and the heavier the charge fired the greater the difficulty in hitting the object aimed at. No two men will probably shoot alike with the same pistol, even though the range is only 15 or 20 yards; and for this reason it is most necessary that every one should have his revolver sighted to suit himself. A slight alteration of the foresight is all that is necessary, and any gunmaker or armorer-sergeant can alter the sight to suit the shooter. For instance, if your revolver shoots high or low the foresight must be heightened or lowered. If your bullets go to the right or left of the mark the foresight must be set to the right or left respectively. It is most essential that the *exact* point aimed at should be struck—for remember that a bad shot may cost you your life.

Carelessly made cartridges may of course make the best pistol to shoot wildly, and when the powder charge is so small as 13 or 18 grains a few grains more or less may throw the bullet up or down, even at a short range; but if the cartridges are obtained from a good maker and are not allowed to become too old they will be found tolerably uniform in power.

The accuracy of fire in a revolver depends much more on the skill of the firer than on the make of the weapon; for, although the range at which revolvers are required to be used should seldom be more than 15 or 20 yards, even at this short distance the impractical pistol shot will make very poor shooting.

It is mere folly to provide one's self with a weapon and then not learn how to use it with skill; but it is too often the case that men buy a revolver and after firing a few rounds from it put it on one side and never practise shooting with it afterwards.

No firearm requires to be more constantly used than the revolver, as without frequent practice no one can become an accurate and quick pistol shot; and unless one is able to put every bullet with certainty into a 12-inch target at a range of 20 yards he should not expect to derive much protection from his revolver when he has to rely on it to save his life.

The following table merely compares what are considered to be the various useful types of revolver, and it is not to be supposed by the reader that similar pistols by other makers are not equally good, or perhaps better than those mentioned; but a study of this table should enable the purchaser to select the class of weapon he requires, as he can learn from it the amount of muzzle velocity, energy, penetration and recoil due to each size of pistol and charge it fires.

The difficulty experienced in making good shooting with revolvers is largely due to their recoil, and this will readily be understood in reference to the above table. A Martini-Henry rifle which is held firmly against the shoulder has a recoil of 16.6 ft. lbs., while revolvers which have their recoil controlled by one hand only have a kick varying from 2.443 to 9.493 ft. lbs., according to their weight and the ammunition they fire. The heavy pull on the trigger, which is experienced with most double action revolvers when they are fired by trigger-action, is another cause of inaccuracy of fire. When the pistol is cocked before firing, the pull-off may be as light as required, so that when time admits of doing so it is advisable to cock before firing.

Revolvers Nos. 2 and 8 fire only one kind of ammunition; the former having a special cartridge and the latter taking the Adams' revolver ammunition. The remaining revolvers will take either the Government 0.455 cartridge (18 grains powder and 265 grains bullet), or the Adams' 0.450 cartridge (13 grains powder and 225 grains bullet). No. 1 fires also a heavy charge of 40 grains powder and 250 grains bullet. Better shooting will generally be made when the lighter nature of cartridge is used, and no useful result except increased range is gained by the use of the heavier charge.

It is well when buying a revolver to see that the ammunition which it is supposed to take will enter easily into the chambers, and that when loaded the cylinder will revolve freely; as some revolvers which are supposed to take the Government 0.455 cartridge will only take that

known as "Mark II." (now obsolete), and will not take the present pattern known as "Mark III."

It may be supposed that owing to its large powder charge the recoil of the Colt's Frontier revolver is excessive, but this is not so. As a matter of fact, and as shown in the recoil column in the table, the recoil of this pistol is little more than that of revolvers firing the Government 0.455 cartridge, and on account of the balance of the Frontier pistol even this slight excess of recoil is not felt by the firer. Increase to the weight of the bullet has more influence on the recoil than an addition to the charge of powder. The recoil of Colt's Cavalry revolver (No. 1) when firing its own ammunition, is considerable, but not so great as to be disagreeable. This pistol is a most powerful weapon.

Nothing need be said relating to the form of grip, or as to the balance of the pistol, as each purchaser must suit himself in these particulars.

TABLE COMPARING THE POWER, ETC., OF DIFFERENT TYPES OF REVOLVERS.

No.	Description of Revolver.	Calibre.	Number of chambers.	Weight	Length of barrel.	Charge.		Proportion of weight of powder to weight of bullet.	Muzzle velocity.	Energy at muzzle.	Penetration into deal boards.	Recoil.
						Powder.	Bullet.					
		in.		lbs. ozs.	in.	grs.	grs.		f.s.	ft. lbs.	inches.	ft. lbs.
1	Colt's United States Cavalry Revolver (single action).....	0.45	6	2 5½	7½	{ 40 250 18 265 13 225	{ 1 : 6.25 1 : 14.7 1 : 17.3		986 709 614	539.2 295.4 188.2	8 4 2½ to 3½	9.493 5.060 2.709
2	Colt's Frontier (double action).....	0.44	6	2 7½	7½	40	200	1 : 5	892	353	4½ to 5½	4.966
3	Colt's (double action).....	0.45	6	2 4½	5½	{ 18 265 13 225	{ 1 : 14.7 1 : 17.3		681 602	272.6 180.9	3½ to 4 2 to 3	4.875 2.719
4	Enfield extracting (double action).....	0.45	6	2 8	5½	{ 18 265 13 225	{ 1 : 14.7 1 : 17.3		700 600	288 179.7	3½ to 4 2 to 3	4.66 2.443
5	Wbley's extracting, No. 4 pattern (double action).....	0.45	6	2 4½	5½	{ 18 265 13 225	{ 1 : 14.7 1 : 17.3		682 598	273.4 178.4	3½ to 4 2 to 3	4.814 2.640
6	Wbley's, No. 5 pattern (double action).....	0.45	6	2 7	5½	{ 18 265 13 225	{ 1 : 14.7 1 : 17.3		648 594	246.8 176.1	3 2 to 3	4.694 2.458
7	Wbley's Constabulary, No. 1 pattern (double action).....	0.45	6	1 14½	4½	{ 18 265 13 225	{ 1 : 14.7 1 : 17.3		650 586	201.8 171.4	3 to 3½ 2 to 3	4.282 3.055
8	Wbley's Bull-dog (double action).....	0.45	5	1 1½	2½	13	225	1 : 17.3	439	96.2	1½ to 2	3.031

\* The boards used for testing the penetration were of soft white deal, quite free from knots. The range was 20 yards.

### THE BUGLE CALLS OF THE ENGLISH ARMY.

Considering the length of some of the calls, it may surprise the reader to hear that there are only five different notes played on the bugle, and though that is the case, the language of the instrument is not at all limited. A language with only five words might be thought easy to learn, and yet the different arrangements of these "words" ("sentences," as I may call them) are endless. It is, indeed, a very necessary part of a soldier's training to learn the language of the bugle, and even unmusical men soon acquire it. For, in the first place, the same "calls" sound much about the same time each day—a hungry recruit, for instance, does not take long to recognize the "dinner bugle," nor does the careless soldier forget the summons to extra drill, much as he might wish to do so. The men in their barrack rooms, too, often associate words with the notes of the bugle, and that is a help to remember the meaning of the sounds heard. I will first explain, as to the instrument itself, that the notes are all made with the lip and tongue; there are no keys used, as is the case with most brass instruments; they are all notes of the common chord; and although bugles are always in the key of B flat, music for them is written in the key of C. It will be easily understood that no great knowledge of the principles of music is necessary to play an instrument so limited in its capacity; a correct ear, a thorough acquaintance with *time*—for even dotted semi-quavers occur frequently—and a power of learning by heart all the different calls, are the chief essentials. The authorized course of instruction for a bugler is to begin by playing the lowest notes with all the variations of time of duration.