

STUDY UNIT 13, PART 1

STUDY
UNIT
13
PART
1

APPRAISING AND TRADING USED GUNS

THE WELL-DRESSED GUN
PRO — BARGAINEE OR
BARGAINER?

As a gun pro selling guns, you'll have frequent opportunities to buy used guns which can add up to extra profits, a means of building a gun collection at low cost, or a terrific way to lose your shirt, socks, and drawers. Very often your profit on the sale of a new gun, when you accept a trade-in, hinges on your selling that trade. You had better believe that the types of guns you take in, their saleability and the trade allowance given have a lot to do with whether you'll be a successful retailer with a reputation for fairness or a well-liked failure.

The idea is to make a buck while keeping your patrons happy. And remember — you're fair game for your customers. Human nature being what it is, they're out to drive a sharp bargain, too. Make your allowances on used guns too generous and your customers will love you — and sympathize deeply when you fall on your face financially.



FIGURE 1 — Often 25% to 40% of a dealer's inventory is in used guns that were traded in on new guns.

It isn't really possible to teach the art of gun trading (or car or horse trading, for that matter), as skill depends as much on judging people as on judging guns. One dealer may offer a man \$40 for some relic he wants to trade in on a new magnum, and the customer, because of the dealer's friendly attitude and sincere explanation, may happily accept the proposal. Another retailer may offer the same man the same \$40 for the same relic, and because of a hard-nosed, take-it-or-leave-it attitude the customer will stalk out, relic in hand, muttering allusions to the dealer's canine ancestry.

BARGAINING BEGINS
WITH THE USED-GUN
GUIDES

Aside from the psychological aspects, there are basic guidelines to follow in gun trading. Your starting point in most transactions is the published value for a particular gun as listed in the *Gun Trader's Guide*, the *Red Book of Gun Values*, the *Williams Blue Book* of used guns, and other similar publications. And these published figures are starting points only. If the trade-in will be applied toward an expensive gun (Figure 2) or one that has been gathering dust for months, you can afford to be generous. If the new gun your customer is eyeballing is a cheapie, then make a minimum offer for his trade-in or don't accept it, period. If the proposed trade-in needs extensive repairs, is obsolete, or is unsuited for the needs of local shooters (like a .35 Winchester lever-action in country where the average big game shot is 250 yards), you're better off flatly refusing a trade (Figure 3). A solution acceptable to your customer often exists in explaining *why* you don't want his gun, and then offering to sell it on consignment. The chances are your customer will opt for the new gun and strain his budget a bit, feeling that his "valuable" specimen will sell soon. Maybe it will. If it doesn't you're not stuck.

APPRAISING AND TRADING USED GUNS



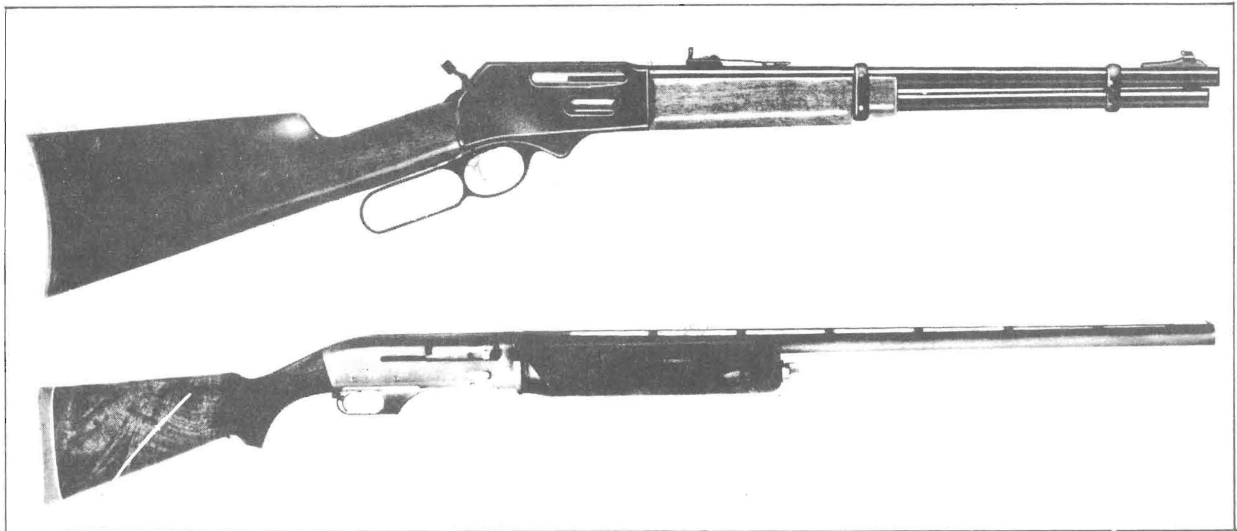


FIGURE 2 — Trade allowances on inexpensive guns like the Mossberg 742 (top) must be as low as possible. On high-ticket items like the new Ithaca 10-gauge auto, you can be more generous.

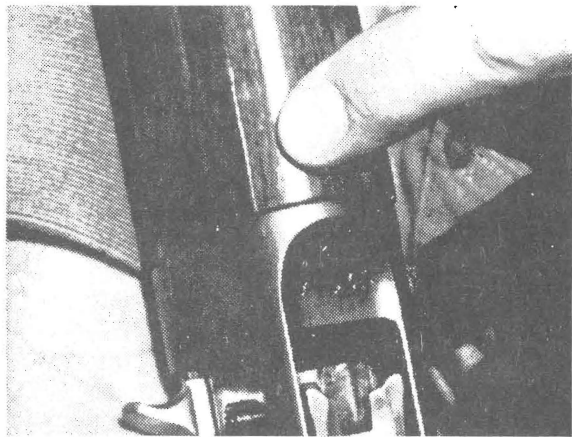
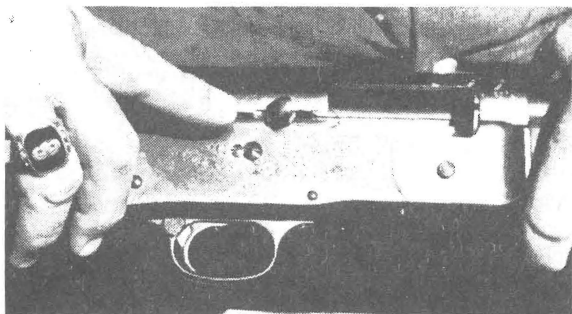


FIGURE 3 — Smart dealers seldom accept trade-ins on guns that are badly damaged or require extensive repairs. Old autoloaders sometimes crack just back of the ejection port after years of use (top). Check such suspects with a magnifying glass. A cracked forend isn't serious, as it can be epoxy-repaired in minutes. (Courtesy Shooting Times)

Regardless of the listed "Red Book" and "Blue Book" values, each used gun has to be considered on an individual basis. Few guns of

the common variety (no collector's value) are worthy of no more than minor cleaning and touch-up before being placed in your used rack. There are exceptions, of course, but run-of-the-mill guns generally have to turn over rapidly to be profitable. Stock refinishing, complete rebluing, checkering, etc. you do to enhance the value and saleability of a so-so gun sometimes pays off. More often than not, it doesn't. In effect, you're doing the work on speculation. You'll probably sell the gun, but whether you can get the higher price necessary to justify the time and money you invested in refurbishing is something else.

In most cases your best bet is to sell a gun "as is," and then talk the buyer into the materials he needs for touching up the bluing and refinishing the stock if he's concerned with the cosmetic shortcomings. Spend your time at the workbench on jobs you *know* you'll be paid for.

CLASSIFICATIONS OF USED GUNS

In the years ahead, it's likely that every imaginable type of used gun will be presented to you for trade or purchase consideration — from crude converted military "sporters" you'd be lucky to sell for a sawbuck, to maybe an old, grime-encrusted Remington or Parker double-barreled shotgun some youngster found in Granddad's attic and wants to trade "even-steven" for a new bolt-action .22 (Figure 4). Few guns, however, are in such a clear-cut "gem" or "blem" category. The majority of guns to cross your counter will be of the plain and simple "used gun" variety — most of fairly recent manufacture, a few dating back to the first decades of the 20th



...valuable.
 ...value, the older the
 ...usually worth. For example,
 Winchester 94 made in the 1890's is rare —
 collector's item — and worth a bit of money.
 M94 made around 1920, the same gun
 mechanically, is simply an old rifle and worth
 considerably less than an M94 made in 1970
 (Figure 5).

The various used gun pricing guides usu-
 ally provide a fairly accurate yardstick for
 pricing post-1898 guns, but not always. Some-
 times an older gun will command a higher
 price than a newer gun of the same basic
 model. In the mid 1960's many manufacturers
 went on an economy kick, utilizing impressed
 tooling, cheap wood, and in some in-
 stances investment castings rather than forged
 parts for the receivers. Three examples of
 such guns which command premium prices
 are the pre-'64 Savage 99's, and Winchester
 Model 70's and the earlier Remington 870
 and Winchester 1412 shotguns. Such guns,
 when flossied up with new blueing and stock
 finishing, and when mechanically A-1, often
 sell for nearly as much as comparable new
 models (Figure 6). The pre-'64 Winchester
 Model 94, in top condition, are worth a good deal
 more than contemporary M70's.

This situation (with the exception of
 the M70's) is seldom reflected in the used gun
 guides, any more than the value of a cherry,

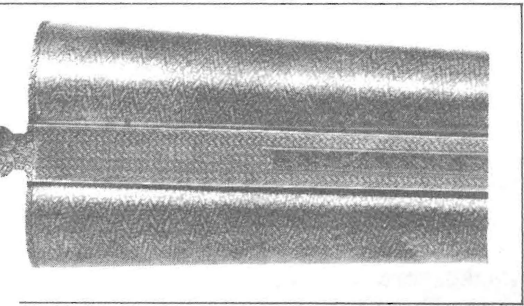
low-mileage car is listed in a used car Blue
 Book.

COLLECTORS' GUNS REQUIRE SPECIALIZED LISTINGS

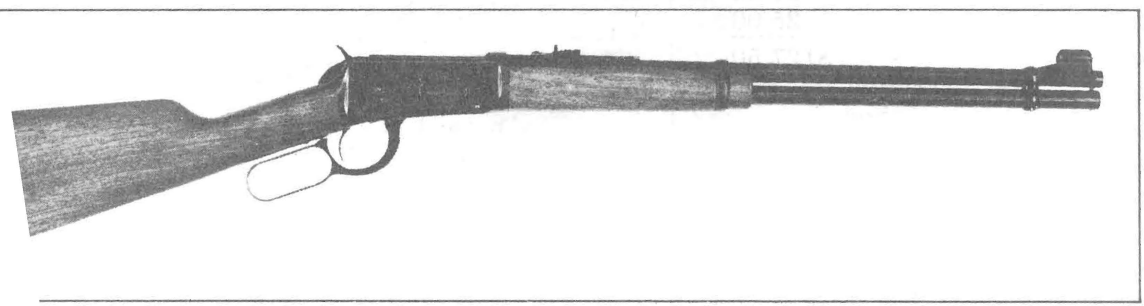
The value of collectors' guns such as pre-
 1898 Winchesters, Remingtons, Colts, and
 some military arms; Parker, Fox, and L.C.
 Smith shotguns; and antique muzzleloaders
 (not replicas) can't be gauged by perusing
 periodicals published once a year. *Current*
 market values of most modern and many
 antique guns are best determined by consult-
 ing general publications like "Shotgun News,"
 which is published bi-weekly, and the weekly
 "Gun Week." If you're doing much trading,
 especially with "collectibles," you should
 keep these "bibles" on hand. If you plan to
 specialize in specific types of guns, like Win-
 chester or Marlin lever-actions, Colt revolvers,
 or early U.S. military rifles, frequently pub-
 lished bulletins and catalogs provide up-to-
 date pricing information. (A listing of several
 sources appears at the end of this study unit.)

Any published listing can only show the
 "going rate" for a given gun, which is always
 based on comparative rarity and demand.
 These factors may vary from one part of the
 country to another. Probably the best way to
 find out the true value of antique guns (or
 modern) is to visit a large gun show and talk
 with experienced traders. They're on the
 "firing line," and theoretical published prices
 may or may not conform to actual buy-and-
 sell figures, at least in that area.

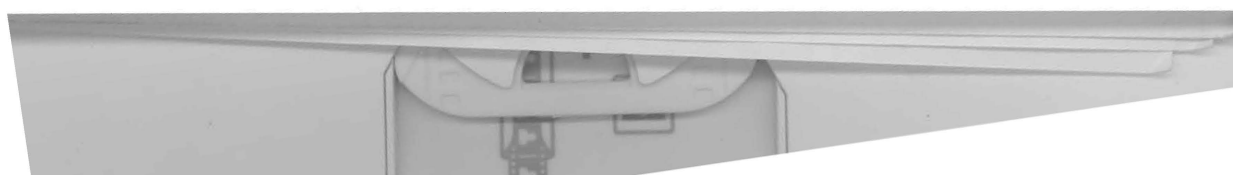
Often you'll have a chance to pick up
 arms which fit in no specific category, and are
 not listed in the used gun guides. Included
 here are sporters based on military actions
 (which vary widely in workmanship and
 value), custom-built rifles, and military arms
 of diverse make, model, age, and condition.
 Obsolete military rifles are still being offered
 by various importers and distributors, and
 their advertisements in trade and consumer
 gun publications provide a value index (Fig-
 ure 7).



*RE 4 — Uninformed and trade-bent
 buyers sometimes bring in valuable damas-
 cubles. Let your conscience be your*



*— The Winchester Model 1894 can be worth quite a bit or very little — all things equal —
 in the year of manufacture.*



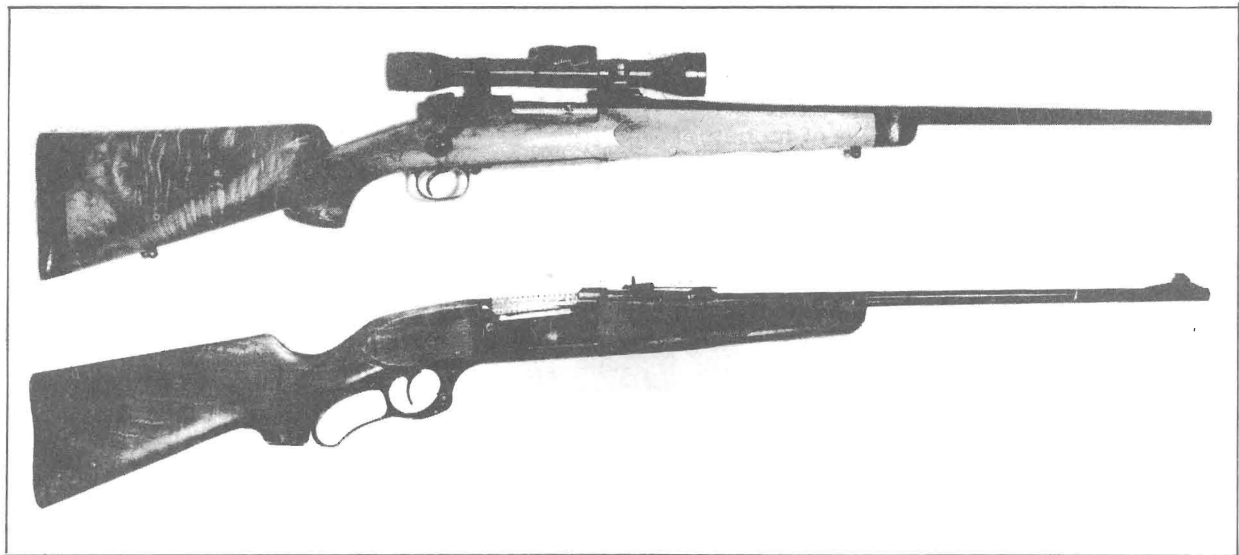


FIGURE 6 — Older models of guns in current manufacture are often worth more than those that just left the factory. Examples are pre-'64 Winchester M70 (top) and Savage Model 99 (bottom).

HOW TO DETERMINE THE VALUE OF CUSTOM-BUILT RIFLES

How much to pay and charge for a custom-built rifle depends on a number of factors: condition, caliber, popularity, type of action and barrel; quality of stock and checkering (if any), and above all the gun's appearance and workmanship (Figure 8). Assuming that all these elements are "positive," the wholesale (dealer) price of such a gun can be approximated by itemizing the *current* cost of its components and labor. For example, let's take a .300 Winchester magnum sporter with a commercial Mauser action, a premium barrel, and a good-quality, oil-finished, checkered stock. The caliber is popular, the rifle looks good, and the overall condition is excellent. To build that rifle from scratch would involve the following cash outlay:

	Parts	
Action	\$	75.00
Barrel		27.50
Stock		25.00
		<u>\$127.50</u>
	Labor	
Barrel Fitting	\$	7.50
Blueing		20.00
Stock inletting, finishing		35.00
Checkering		45.00
		<u>\$107.50</u>

Replacement Cost — \$235.00

To establish the retail price you would mark up the \$235.00 by 25% (\$78.33) for a total of \$313.00. Round it off to \$315.00 — you can always come down. If the gun shoots as well as it looks, you should have no difficulty getting your price. Most shooters will choose a slightly used "like new" custom sporter over a mass-produced factory iron, if the price difference isn't too great. Custom sporters of the type just described, are best taken on consignment unless you're selling quite a few high-priced guns.

The woods are full of "custom sporters" that look like the offspring of a union between a canoe paddle and a truck axle. Steer clear of these guns, as they're hard to sell at any price.

Please do Programmed Exercise 1 on Page 6. Make sure you write your answers on a separate sheet of paper before looking at the answers on the page specified.

SHOULD YOU OR SHOULDN'T YOU TAKE IN THAT TRADE?

A basic rule of gun trading is to realistically figure the retail price at which a used gun will sell, then deduct at least 25% (your normal commission) to determine the trade allowance. As the used gun guides show, the retail price of a used gun is usually from 50% to 60% of the retail price of a new and comparable model.

We emphasize again that your profit on the sale of a new gun is often tied up in the trade-in. We are talking now about situations where the new gun is in inventory, or when



SEMI-AUTO .308 NATO M-59



BRAND NEW \$139⁹⁵

A newly developed lightweight semi-auto rifle designed for shooters and sportsmen embodying all the advanced features of the U.S. Army M-14 and other new assault rifles. The M-59 combines the accuracy and reliability of the famous M-1 Garand with the newest concepts in the military field. Caliber .308 Winchester (7.62MM NATO). Weight 8 1/2 lbs. 20 shot detachable magazines. Each rifle is brand new and fully guaranteed. 7.62MM NATO, N.C. Boat tailed target ammo—\$10.00/100 — \$85.00/1000. Extra magazines \$7.95.

LEADERSHIP THROUGH INTEGRITY



WESTERN MILITARY ARMS

1609 E STREET, SACRAMENTO, CALIF.

GERMAN MOD. 98K 8MM MAUSER



\$34⁹⁵

The most famous of all the Mauser rifles. The official German Wehrmacht rifle from 1935 to 1945. Still used by East and West German police. Sought after by collectors because of its major part in world history and in great demand by sportsmen and gunsmiths for its great strength and accuracy. One of the best of all the Mauser actions. Length 43 1/2". Weight 8 3/4 lbs. Bl. length 21 1/2". Original military configuration, arsenal refinished. Very good plus condition with excellent to perfect bores—ORIGINAL GERMAN INSTRUCTION MANUAL TRANSLATED TO ENGLISH—99c



BRAND NEW STOCK ONLY \$21.95

Over the past year we have sold hundreds of M1A1 type folding stocks for carbines. We are now introducing a completely new, more compact even more desirable folding stock for the M1 carbine The WM-4.

INCLUDE \$1.00 POSTAGE WHEN ORDERING STOCK ONLY



NEW WM-4 FOLDING STOCK CARBINE



CARBINE AND STOCK COMPLETE \$99.95

Shoulder piece locks positively in open position for accurate shooting. Large comfortable pistol grip allows better control and stability. Best quality materials used throughout. Overall length in carrying position only 27 1/2". Extended 36 1/2". The carbines we offer with these stocks are in like new condition and guaranteed to be the finest quality money can buy.



MOD. 1909/98 OBERNDORF MAUSER \$39⁹⁵

The most beautifully finished Mausers we have ever seen. These rifles were made at the original Oberndorf Mauser plant in Germany to the highest prewar commercial standards. Every piece displays the famous Mauser commercial trademarks and the Prussian Coat of arms. Caliber is 7.65MM Mauser. The finest quality Mausers we have ever offered. All are select and have seen little or no use. Minor scratches and wear from storage and handling only. Cond. — \$6.00/100



M/98 MAUSER, CAL. 7.65MM \$24⁹⁵

Another prewar quality large ring Mauser rifle. This rifle was produced in 1910 for South America and embodies the large ring short action so highly desired for conversion to modern high velocity sporting loads. All in good condition ready to use.



M/98 MAUSER, CAL. .30-06 \$32⁹⁵

A large ring short action Oberndorf Mauser rifle in the popular .30-06 caliber! All were manufactured prior to WWI and bear the famous Mauser factory commercial trademark. Bl. length 29". Guaranteed to be ready to use as is or convert to a fine sporter. All in good condition with very good bores.



M/1932 CZECH MAUSER, 7.65MM \$19⁹⁵

Prewar Czech Model 98 type Mausers. Manufactured to the highest standards of the BRNO arsenal. WMAC is offering these rifles for less than the price of the action alone. Bl. length 24". Condition fair to good. Exterior pitting on barrel and under stock on action. All in shooting condition. 7.65MM Mauser Military Ammo — \$6.00 per 100



ITALIAN MODEL 91 PARAVICINI-CARCANO RIFLE/CALIBER 6.5MM ITALIAN \$10⁹⁵

The M/91 was standard Italian army issue until just before World War II. The design incorporates a modified Mauser bolt, split receiver and Mannlicher type magazine. Length is 31 inches. Weight 9 pounds. The Model 91 can be used as is or sporterized at reasonable cost. All are as issued and in very good condition. For Select Model add \$3.00.

3 FOR \$29.95

ACCESSORIES

Luger grips, New plastic standard or grip safety \$3.95
Walther P. 38 grips, New \$3.95
Walther P. 38 clips, exc. \$5.95
U.S. .45 auto clips, new \$2.95
30 shot carbine clips, new \$2.95
15 shot carbine clips, new \$1.00
5 shot carbine clips, new \$2.95
M-1 carbine bayonet and seaboard \$5.95
Carbine double 15 shot clip pouch 99c
Carbine gas piston nut wrench \$1.00
Orig. German 98K grenade launcher. \$9.95
P. 38 holsters, New military \$5.95
U.S. issue .45 auto holster, new \$2.95
91 Springfield all metal trigger group, excellent cond. \$5.95

INCLUDE POSTAGE WITH ALL ACCESSORY ORDERS!

SPECIAL OF THE MONTH

.45 AUTO BALL Late issue U.S. manufacture, brass cases non-corrosive—\$6.00/1000	.45 NAT'L MATCH Late issue U.S. auto national match, non-corrosive 60.00/1000	.45 MATCH WADCUTTER Brand new commercial .45 auto match semi-wadcutter ammunition. List. 7.15 per 50 our price 7.95 per 100 \$5.00/1000	30-06 BLANKS Sure fire non-corrosive blanks for all ceremonial occasions \$2.50/1000
.303 BRITISH MILITARY Top quality ball ammo for use in all .303's. 53.50/1000	7.65MM ARG MAUSER Especially accurate military ammo for all 7.65MM Mausers. 56.00/1000	9MM LUGER Non-corrosive, brass cases, reloadable. High velocity for use in all 9MM Pistols. 30.00/1000	8MM GERMAN MAUSER German Manufactured military with 109 grain boat tail bullets. 45.00/1000

DEALERS • AMMO • SHOOTERS

AMMUNITION

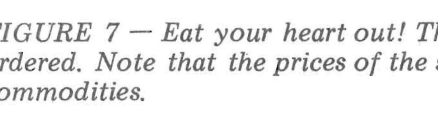
Minimum order 100 rounds (excepting soft-point). Prices are per 100 rounds (except soft-point). All ammunition must be shipped via Railway Express shipping charges collect.

PISTOL CARTRIDGES
7.65MM Mannlicher pistol \$4.00
8MM Luger, non-corrosive \$5.00
38 Special, non-corrosive \$6.00
45 auto, non-corrosive \$7.00

RIFLE CARTRIDGES
6.5MM Dutch (with clip) \$6.00
7.65MM Argentine Mauser \$6.00
30 M-1 carbine, non-corr. \$7.95
308 Winchester, non-corr. \$10.00
30-06 Blank, non-corrosive \$4.00
30-06 Ball, non-corr. \$7.00
303 British, non-corr. \$6.00
303 British Blank \$4.00
8MM German Mauser \$5.00
20MM Talley or Saitovich (10 rds.) \$9.95

SOFT POINT HUNTING
6.5MM Italian (with clip) (20 rds.) \$3.95
7MM Mauser (20 rds.) \$3.45
7.65MM Argentine Mauser (20 rds.) \$3.45
303 British (20 rds.) \$3.45
30 M-1 Carbine (50 rds.) \$5.95

LLAMA .38 SUPER AUTO



\$49⁹⁵

The Llama has an international reputation for being one of the most carefully manufactured pistols in the world. Workmanship and quality are second to none! These pistols are nearly identical to the U.S. Colt .38 and .45 autos and are also noted for safety and rugged reliability. The Llama .38 Super auto weighs 38 1/2 oz., has a 5 inch barrel and a 9 shot clip. Condition is very good plus every pistol is in perfect mechanical condition—fully guaranteed.

ABOUT THE CARTRIDGE
The .38 Super cartridge is manufactured by Remington, Winchester, Peters, and Western and is commonly available from any sporting goods store. It is the most powerful automatic pistol cartridge on the market. Ballistics: Muzzle velocity — 1,300 fps, muzzle energy — 469 ft. lb., bullet weight — 130 grains.

New military style holster with extra clip pouch \$4.95 Extra mags. \$3.95

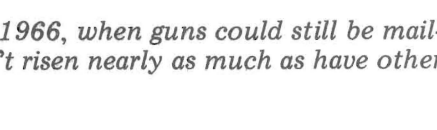
IMPORTANT! ORDERING INSTRUCTIONS

All guns and ammo shipped REA Express charges collect FOB Sacramento, California residents must include 4% sales tax. We will ship any merchandise C.O.D. on receipt of a \$10.00 deposit. Minimum order is \$4.00. Items returned to our office prepaid will be gladly refunded on receipt of goods. All accessory orders must be accompanied by postage.



WESTERN MILITARY ARMS Corp.
1609 E St., Dept. 2-6, Sacramento, Cal.

MODEL 1935 PORTUGUESE MAUSER BANNER "G.N.R." CAL. 7.65MM LUGER



These fine quality collector's items are priced so low that a shooter who demands the best can't afford to pass up this offer. We have just received the last and final shipment of less than one hundred G.N.R.'s and since they did not meet the very good to excellent standards of our previous lot we are reducing the price. This small group of Mauser Banners are all original and all matching. They bear the GNR over the chamber and are commercially proofed throughout, with a 4 1/2 bl and grip safety. All in NRA good-plus condition and mechanically excellent.

SELECT ADD \$99⁹⁵
\$20.00

ORIGINAL HOLSTER SET
As issued with the Portuguese Luger pistols. This is the complete original set shipped by the Germans. Holster - \$5.95. Cleaning rod/olier - 2.95 clip pouch 3.95, take down punch 1.50.

\$99⁹⁵

FIGURE 7 — Eat your heart out! This full-page ad appeared in 1966, when guns could still be mail-ordered. Note that the prices of the surplus military arms haven't risen nearly as much as have other commodities.

Before accepting any gun in trade, you could ask yourself the following questions which apply primarily to functional arms without collector value, the type you will most commonly encounter) . . .

**the Manufacturer
still in Business?**

Orphans don't sell well, and for good reason. Considerable time and expense are involved when the repairman tries to track down a source of replacement parts. The only solution is often a hand-made replacement, which makes neither the repairman nor the customer very happy. Some Spanish and Italian double-barreled shotguns of recent manufacture are in this category (Figure 10). The manufacturers have either folded or gone on to other things, or the importer has dropped the line. Under these circumstances, parts are nearly impossible to obtain. Profits made on guns that later prove irreparable are seldom worth the ill will that follows.



**NEW MATADOR 12 OR 20 GAUGE
VENT RIB DOUBLE BARREL SHOTGUNS**

Famed Firearms International Quality. Selective automatic ejectors; single selective trigger; Anson & Deeley double underlocks; hand engraved receiver; individually mounted firing pins; checked French Walnut stocks; Beavertail forend. For all 234 standard or hi-velocity 234 shells.

C22-2452. 12 Ga. 30" F&M. 7 1/4 lbs.	\$149.50
C22-2453. 12 Ga. 28" F&M.	\$149.50
C22-2454. 12 Ga. 26" IC&M.	\$149.50
C22-2459. 20 Ga. 28" F&M-Vent Rib.	\$149.50
3" Chamber	\$149.50

MATADOR DOUBLE BARREL 10 GA. MAGNUM

Shoots 2 1/2" H.V. or 3 1/2" Magnum shells. 32" full choked barrels. Double trigger. Auto ejectors. 49" overall. 9 1/2 lbs. Finest Heavy Plain Barrels.

C20-72.	\$127.78
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FIGURE 10 — The above mail order ad is about ten years old. Matadors are no longer imported by Firearms International. This situation is true of many foreign-made guns.

Is Headspacing Correct?

You have a moral and sometimes legal obligation concerning any used gun you sell. For safety and to avoid later "kickbacks" (in more ways than one), it's a good idea to check the headspace on older rifles and newer arms that are suspect (Figure 11). Often a shooter is in the market for a new gun because his present rifle "doesn't work right" — the extractor is damaged, the locking lugs are worn, and the fired cases show head separation. If any or all of these conditions exist, the gun probably has excess headspace.

If you don't have a headspace gauge for a particular rifle, you can make do with shims, as explained in a previous study unit. Even a double-edged razor blade can be used as a headspace shim for most center-fire rifles. These blades are all .006" thick, except for the Gillette Veri-Thin, which is .004". Use two pairs of pliers to break off a piece slightly smaller than the head diameter, and affix it

to the base of an empty and unfired case with a dab of grease. (If you use a live round for your test, take the gun into the back room and be very, very careful.) If you can close the bolt with light pressure on the .006" shim that rifle has a marginal headspace problem — it's still safe to fire, but the condition will worsen. If the bolt will close on two .004" Veri-Thin shims, that .008" headspace is too much and the gun is dangerous. A gun that requires barrel set-back or rebarreling is seldom worth fooling with — unless you buy it for very little money and have the time to gamble.

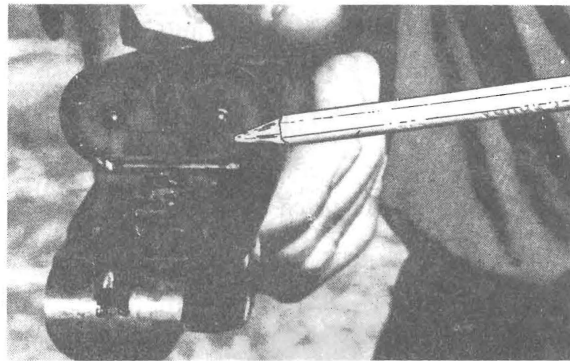


FIGURE 11 — Old doubles should also be checked for headspace. Dark rings on the outer surfaces of the standing breech indicate excess headspace.

**How About the
Trigger and Safety?**

A too-heavy trigger pull can usually be corrected by a simple adjustment or honing. A too-light pull is something else. It may indicate an incorrect setting (in an adjustable trigger), excessive wear on the trigger and sear, or both. In any case, guns with a trigger pull weight of less than three pounds are dangerous. Always check to see if the empty gun "fires" when the bolt closes: if with the safety "off" and then "on," the gun can be jarred into firing by tapping the butt on the floor. Place the safety "on" and squeeze the trigger firmly; with the safety "on" and then "off," see if the gun can be made to fire by twisting the bolt and/or exerting pressure against the hammer or the cocking piece (Figure 12).

If the gun "fires" under any of these circumstances, do not accept it for trade or purchase until you have determined what is necessary (parts and labor) to correct the problem — which has a lot to do with how much you offer for the gun or whether you want it at all.

Has the Gun Been Converted?

Rechambering a modern rifle from one high-intensity cartridge to another (like .30/

Double-Barreled Shotguns

Most vintage European and English doubles are not stressed to handle modern high-velocity or magnum loads, even when the barrels are made of fluid steel. Standard "low-base" shells may be fired safely. Parts replacement on such guns is usually out of the question. Some doubles in this category are beautifully made, bear fine checkering and carving, and are worth a good deal of money (Figure 17). However, the plain field-grade variety, unless made by a famous manufacturer like Sauer, Wesley-Richards, etc., is best declined unless your cost is *low*. There is always a market for doubles, but obscure and plain-Jane foreign makes don't bring high prices.



FIGURE 17 — Parts availability doesn't always influence value. The ornate and old Krienghoff drilling shown, with non-standard 2½" chambers, may or may not qualify for replacement parts. It's still worth a small fortune. (Courtesy "The Complete Book of Rifles and Shotguns, by Jack O'Connor)

Some older U.S. and British doubles, circa 1910 and 1925, are chambered for non-standard 2½" (12-gauge) shotshells. Many of these guns will already have been rechambered for 2-3/4" shells. In other cases, the uninformed owner has been using standard fodder with resultant high pressures and blown patterns. No wonder he wants to trade!

Old, garden-variety doubles, even when in good condition, usually sell for only about half the price of a new, economy-grade double, or less. You'll have no trouble selling them at the right price. Make sure *you* buy right.

Summary

Ideally, you should only take in or purchase used guns that are in good condition and that will sell fast with little or no work on your part. And "saleability" isn't that hard to determine. What you and your friends like is usually what your customers will like.

If work is required to make a gun safe, operable, or presentable, make sure what you pay takes your labor (and any parts) into consideration. For example, if a gun will sell for \$100, you'd allow the seller a base price of \$75 on a trade basis. Then, from that \$75 you'd deduct your labor at, say \$7.50 per hour, plus the cost of any parts. If it will take you two hours and a \$5.00 part to place the gun in saleable condition, your adjusted trade-in allowance would be \$55.

If you were to buy the same gun outright, you would offer \$40 and pay no more than \$50. Experience makes the skilled gun or horse trader. Remember, it's better to pass up a marginal "bargain" than to buy and lose money because the gun won't sell at the price you thought.

TYPICAL TRADE-IN TRANSACTIONS

Example No. 1

You have a new Remington BDL in the rack with a \$230 retail price, which was dealer-priced (25% off) at \$172.50. Your F. O. B. charges on the gun are around \$4.00 and, because you paid for it in 30 days, you picked up a 2% cash discount of \$3.45. Your actual cost on the Remington is therefore about \$173.

A man walks in and lays an older Savage 99 on the counter. He wants to trade it for the Remington; what will you allow? You check over the Savage. The bore is excellent, mechanically it's A-1, and it's in the popular .308 Winchester chambering. However, the blueing is marred in a few areas, the stock badly needs refinishing, and the checkering is worn on the pistol grip. According to your used gun guide, the retail value of the gun in *good condition* is \$90. You knock off \$10 for the poor cosmetics, and the adjusted retail value is \$80. From that you deduct your normal 25% commission (\$20) and come up with an allowance of \$60.

Your prospect naturally thinks his gun is worth more. You point out the worn blueing, finish, and checkering. The man wavers, but isn't convinced. You explain that you can't go higher, but that if he buys the Remington for cash, you'll sell his gun on consignment, try to get \$80, and keep only 10% (\$8) for handling the paperwork. Your prospect does some rapid figuring. He stands to "make" \$12 more if and when the Savage sells, but he'd have to lay out \$230 now. So he takes your first offer. He plunks down \$170 and gives you the Savage.

You're now \$3.00 short of paying for the Remington, and you have a used gun that will sell for from \$80 to \$85. It's a good rifle,



FIGURE 15 — Excessive “play” in an action usually means the gun is badly worn. Double shotguns (left) are checked by opening the action and twisting. Bolt-actions are checked with the bolt open and then closed, by twisting and jiggling the cocking piece and the bolt. Sometimes a badly worn cocked rifle will “fire” when the cocking piece is twisted. Excess wear, with a bit of practice, is easily detected.

or rare enough to have any collector value, and are virtually worthless because ammunition is all but non-existent (Figure 16). In this category are post-1898 rifles and revolvers chambered for other than .22-caliber; rim-fire and obsolete center-fire cartridges; and certain venerable military arms, made by foreign governments, for which ammo is as extinct as the Dodo bird. There are exceptions, of course, like the “Broomhandle” Mauser .30-caliber pistol. Ammo is next to impossible to obtain, but brass can be formed from .223 Remington cases with dies that *are* available.

You need obsolete guns with little or no collector value like you need an IRS audit. Tell your prospective trader to hang his gun on the wall. Better there than around your neck.

ANSWERS

2

1. Shims or a double-edged razor blade.
2. Too-heavy.
3. No.
4. The gun was made of softer steel and not stressed for modern loads.

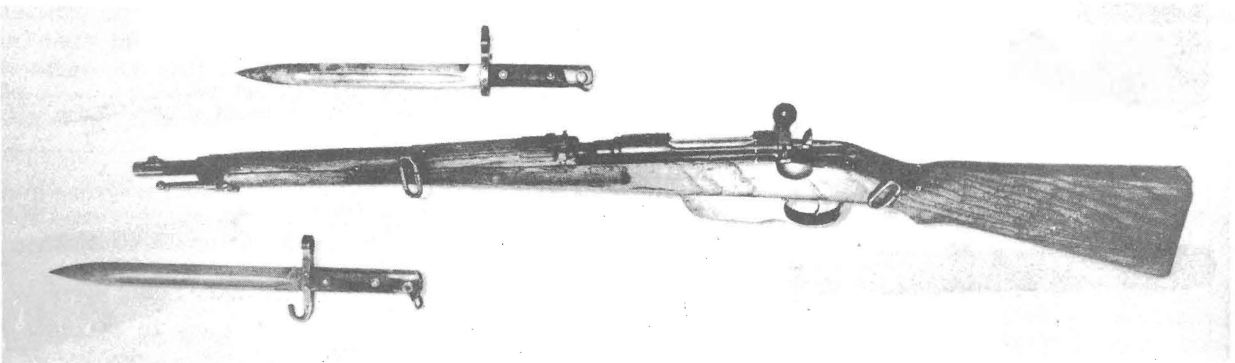


FIGURE 16 — Some surplus military rifles, like the M95 Austrian Mannlicher (above), aren’t a bargain at any price. The ammo is Berdan-primed, and not available in the U. S. (Courtesy “Small Arms of the World,” Stackpole Book Co.)

Double-Barreled Shotguns

Most vintage European and English doubles are not stressed to handle modern high-velocity or magnum loads, even when the barrels are made of fluid steel. Standard "low-base" shells may be fired safely. Parts replacement on such guns is usually out of the question. Some doubles in this category are beautifully made, bear fine checkering and carving, and are worth a good deal of money (Figure 17). However, the plain field-grade variety, unless made by a famous manufacturer like Sauer, Wesley-Richards, etc., is best declined unless your cost is low. There is always a market for doubles, but obscure and plain-Jane foreign makes don't bring high prices.



FIGURE 17—Parts availability doesn't always influence value. The ornate and old Krienghoff drilling shown, with non-standard 2½" chambers, may or may not qualify for replacement parts. It's still worth a small fortune. (Courtesy "The Complete Book of Rifles and Shotguns, by Jack O'Connor)

Some older U.S. and British doubles, circa 1910 and 1925, are chambered for non-standard 2½" (12-gauge) shotshells. Many of these guns will already have been rechambered for 2-3/4" shells. In other cases, the uninformed owner has been using standard fodder with resultant high pressures and blown patterns. No wonder he wants to trade!

Old, garden-variety doubles, even when in good condition, usually sell for only about half the price of a new, economy-grade double, or less. You'll have no trouble selling them at the right price. Make sure you buy right.

Summary

Ideally, you should only take in or purchase used guns that are in good condition and that will sell fast with little or no work on your part. And "saleability" isn't that hard to determine. What you and your friends like is usually what your customers will like.

If work is required to make a gun safe, operable, or presentable, make sure what you pay takes your labor (and any parts) into consideration. For example, if a gun will sell for \$100, you'd allow the seller a base price of \$75 on a trade basis. Then, from that \$75 you'd deduct your labor at, say \$7.50 per hour, plus the cost of any parts. If it will take you two hours and a \$5.00 part to place the gun in saleable condition, your adjusted trade-in allowance would be \$55.

If you were to buy the same gun outright, you would offer \$40 and pay no more than \$50. Experience makes the skilled gun or horse trader. Remember, it's better to pass up a marginal "bargain" than to buy and lose money because the gun won't sell at the price you thought.

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You're now \$3.00 short of paying for the Remington, and you have a used gun that will sell for from \$80 to \$85. It's a good rifle,

but not much in the looks department. You happen to have a new Savage 99 in the rack, the same .308 caliber, and with the usual cheap wood and impressed checkering. The retail price is \$165. Hmmm. Business is a bit slow and you have some time. You take the old Savage into the back room. A week or so later, and after about five hours of your time, the gun looks like a million — you've touched-up the worn spots on the metal with cold blueing cream; you've stripped the finish, raised the dents, and applied six coats of Tru-Oil; and you've spent a couple of hours recutting the checkering. When placed alongside the restored gun, the new Savage looks like a cheap imitation (which it is).

A couple of days later a prospect walks in, interested in a lever-action. He passes up the "advanced technology" version at \$165 and happily parts with \$140 for the older but *real* Savage 99. Let's see how you came out on these transactions:

	Cost	
Remington	\$173.00	
Blueing chemicals and stock oil	1.00	
	<u>\$174.00</u>	
	Income	
Cash for Remington	\$170.00	
Cash for re- stored Savage 99	140.00	
	<u>\$310.00</u>	
	174.00	
	<u>\$136.00</u>	
Profit		\$136.00

When you realize that your profit on the Remington on a straight-sale basis would have been \$57.50, you *can* see how trading can bring you extra profits. If you had sold the

Savage "as is" for \$80, your total profit on the two transactions would have been \$77. That extra \$59 you made from giving the old girl a facelift represented payment for about five hours work — which ain't all that bad! As you can see, you depended on the trade-in for your profit, plus \$3.00 of your cost on the Remington.

We should point out, however, that older Savage 99's, like Winchester 1897, and older model 12 pump shotguns, are more desirable and safer restoration bets than most guns of comparable vintage. Not many guns are worthy of refurbishing on speculation. The general rule on trades is, clean up the gun inside and out, remove any rust with fine steel wool and oil, and let it go at that!

Example No. 2

This time let's assume you just sold a Weatherby Mark V sporter for \$350 which, at 25% off, cost you \$262.50. Your customer traded an older Browning shotgun with a "book value" of \$125. Your allowance for this gun was \$90. You now have the \$260 cash difference, plus a used shotgun you hope to sell for \$125. You're about \$12.50 short of paying for the Weatherby. When you sell the Browning outright (no trade) your profit on both transactions will be \$112.50, or \$35 more than you'd have made if you sold the Weatherby on a non-trade basis.

A prospect walks in and wants the Browning, but he doesn't have much cash. He does have a couple of guns he wants to trade — a fairly new Spanish double which you figure you can peddle for \$75, and a so-so sporterized 1893 Mauser in 7mm caliber, which will easily bring \$40 (Figure 19). You offer the man \$50 and \$25, respectively, for the two guns. He accepts the deal, gives you the \$50 difference, and walks out with the Browning.

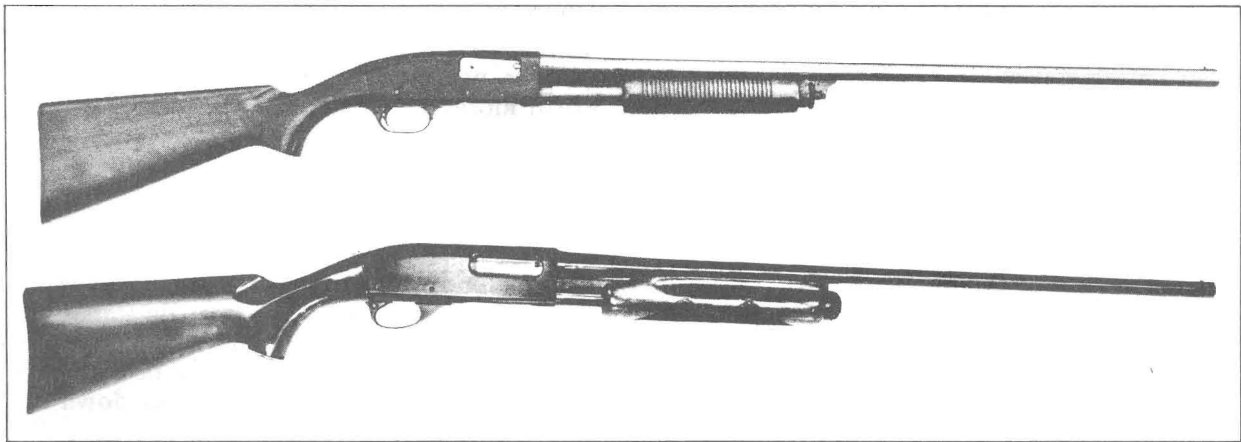


FIGURE 18 — Some models by the same manufacturer command higher prices than others. The Remington M31 (at top) was a so-so gun and isn't worth much. The old Remington 870 at the bottom, which succeeded the M31, is, when in top condition, worth nearly as much as a new M870.

After “paying” the balance of \$12.50 on the Weatherby, your profit on the commingled transactions is \$37.50. You sell the Spanish double and the 7mm Mauser quickly, for a total of \$115. You have made a total profit on the Weatherby and the trades of \$152.50 — or \$40 more than if you had sold the Browning outright.

Yes, it’s easy to pyramid trades, but like a chain letter, one broken link (poor buy) can bollix up the sequence and put you in the red. You’re in business to make money for yourself or for your boss, and the secret is to take in only guns that will sell, and that you buy right. Whenever possible, try to get your cost on a gun out of the customer in cash, with his trade representing your profit — or with his cash outlay coming very close to your cost, as in the previous examples.

Good customers have a habit of asking their friendly dealer to “keep an eye open” for a certain gun. File these requests in your memory tank. You’ll be surprised at how often the bell will ring when a potential trade (and sure sale) crosses your counter.

Please do Programmed Exercise 3 on Page 14. Make sure you write your answers on a separate sheet of paper before looking at the answers on the page specified.

PRE-1898 FIREARMS

Our discussion so far has been primarily concerned with “ordinary” used guns, those with no particular collector value, which will constitute at least 90% of the arms that come your way. Occasionally you will have the chance to buy or take in a pre-1898 handgun

or rifle. Such arms (and we’re not talking about grass-common military relics) are in the collector category, may be sold by non-FFL dealers interstate without running afoul of the gun control laws, and are often quite valuable (Figure 20). Note that we said “handguns and rifles.” Shotguns, with the exception of the Parker, Fox, Lefever, L. C. Smith, some old foreign doubles, and to a lesser extent Winchester M97’s and M12’s, haven’t yet really come into their own as collectors’ items (Figure 21).

Knowing *what* and what *not* to restore concerning antique guns is as important as knowing *how* to restore them. Sometimes a gun should be left “as is” regardless of its condition; other times it should be cleaned up as much as possible, leaving the original and remaining blueing and finish intact and replacing damaged or broken parts; in some instances the gun can or cannot be fully restored, with little or no effect on its value. What’s more, all these treatments can apply to the same model of a given gun! Sound contradictory? Of course. The various choices merely point up that each gun must be considered on an individual basis and treated accordingly. To illustrate, let’s consider three hypothetical Winchester Model 73’s, each of which exemplifies one of the alternatives mentioned (Figure 22).

“In situ” Guns Should Be Left As Is

Guns found “in situ,” meaning found in an obviously dramatic or historical situation, should be left as is.

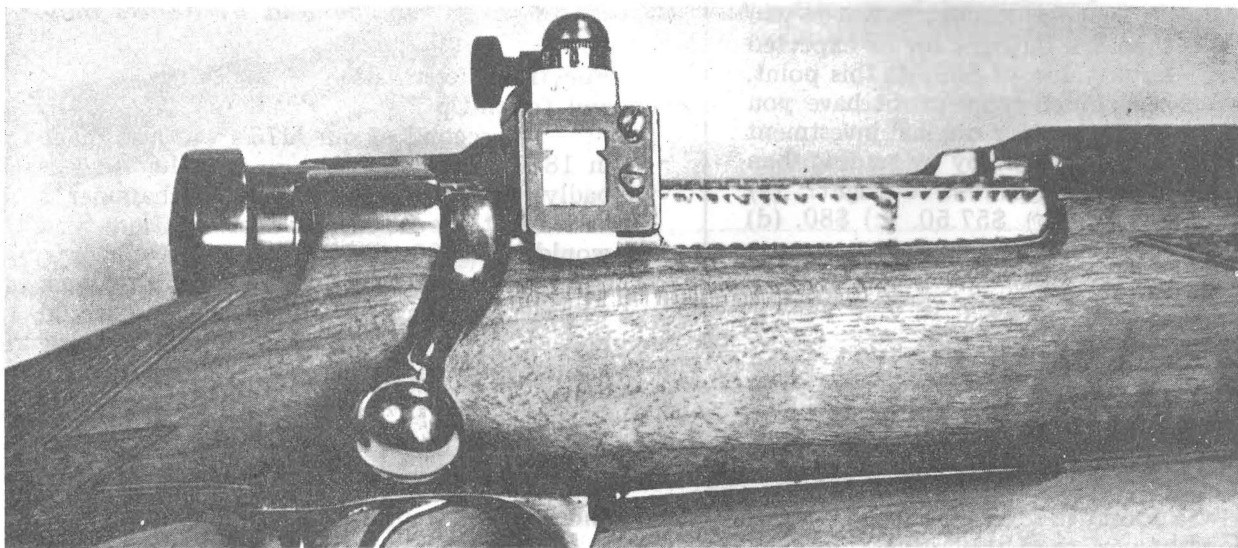


FIGURE 19 — “Silk purse or sow’s ear?” Military conversions like the Arisaka illustrated may reflect beautiful craftsmanship and boast superb metal and wood finishing. They’re still hard to sell and seldom warrant a high trade-in price. (Photo courtesy National Rifle Association)

1. How should you test-fire an old military rifle or sporter conversion with a suspect action?
2. What is the first thing a prospective buyer will usually check when examining a used shotgun?

The following questions refer to this problem, and assume that all trade deals are standard deals.

You have just sold a Weatherby sporter at \$375, which represented a standard retail mark-up over what you paid for it. Your customer traded you a 1973 Remington .22 Rangemaster in excellent condition and paid the balance in cash. Book value on the Remington is \$150.

3. How much did you allow your customer on the trade? (a) \$37.70. (b) \$75. (c) \$100. (d) \$112.50.
4. Having made the trade, how many dollars are you still out on your original investment in the Weatherby? (a) \$18.75. (b) \$29.35. (c) \$94.75. (d) \$102.45.
5. A customer buys the Rangemaster from you for cash plus a trade-in on an old Browning which you then sell outright for its expected book value of \$80. At this point, how much more profit have you made on your original investment in the Weatherby by trading than if you'd sold it outright? (a) \$21.31. (b) \$57.50. (c) \$80. (d) \$93.75.

Answers on Page 16

Our first M73 is an old-timer made, according to the serial number, in 1876. The metal is rusted, the stock badly cracked, and a live cartridge is jammed in the carrier. The gun was found in a cave with two skeletons, one with a crushed skull, the other bullet-pierced. An empty revolver and whiskey bottle, also found at the scene, rounded out the tale of a fatal fight between two boozed-up

prospectors. The gunshot victim, before succumbing to his wound, managed to bash in the head of his killer with his jammed rifle.

Such a rifle, except for removing and halting the rust, unloading any live rounds, and deactivating the jammed cartridge (by drilling the case and squirting in penetrating oil), should be left alone. With the revolver and/or whiskey bottle, and perhaps a photo of the scene, this M73 would be a valuable addition to any collection of Western Americana. To restore such a gun would destroy the story value and the rifle would be just another old M73.

Less extreme examples of guns that should invoke a hands-off-policy are venerable Colts with notches on the backstrap; a rifle used in some long-ago gunfight with a bullet hole through the stock; or perhaps an arm that was badly burned when the owner was "smoked out" of his hideaway by lawmen, Indians, or "bad guys."

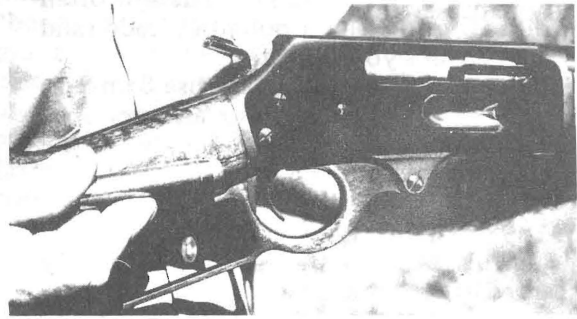
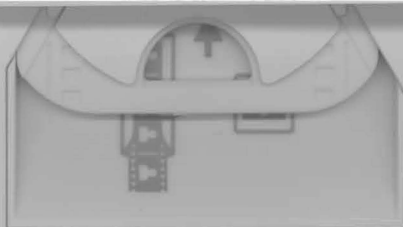


FIGURE 20 — An original 1895 Marlin in .45-70 chambering is an antique and may be sold interstate without an FFL. The new M 1895 (above) was recently reintroduced and is essentially the same gun firing the same cartridge. It may be sold by dealers only.

Functional Restoration and Touch-Up

The second of our M73's was also made in 1876. It is somewhat rusted, the stock is badly dented and marred, and the hammer is broken. It has no known history. Here, you would use 0000 steel wool and gun oil to remove the rust; you would clean up the stock without stripping the finish; and you would replace the broken hammer by cannibalizing a junker or securing a replacement from a dealer specializing in old Winchester parts.

Such guns should never be reblued or re-finished. It's often surprising how much blueing remains under even a heavy coat of rust, and how easily that rust can be removed with steel wool and oil. The soft patina on metal parts took years to build and should never be destroyed. Old guns are expected to be worn, and are customarily advertised as having "75%



(or whatever) of the original blueing." It's not against the rules to steam out dents from dinged stocks, and perhaps rub in a bit of linseed, providing the oil is compatible with the original finish. A shiny stock, with coats of stock oil layered on, is, of course, *out*.

Most of the pre-1898 collector guns you'll encounter deserve functional restoration and clean-up only, leaving the blueing and stock finish in as original a condition as possible. A ruined antique, like a Spencer carbine "reblued" to a shiny black finish, and with the stock sanded smooth and coated with spar varnish, is enough to make any knowledgeable gun pro pound the walls and weep!

When What You Do Doesn't Really Matter

Our third example is an M73 made in 1915, just five years before production was discontinued. This gun, too, has worn blueing and the stock could stand refinishing. However, it's just another "old gun," and worth about the same (very little) whether left "as is" or given the full beauty treatment. Im-

prove the cosmetics and it will probably sell easier — but it's doubtful that it would bring enough to justify your labors. Guns in this category are listed in the various used gun guides; as you'll see, they're seldom worth bothering with on a trade basis. When a new lever-action center-fire sells for well under a hundred bucks, what can you get for an old-timer with no collector value, worn parts, and probably a pitted bore?

Exceptions to the foregoing are early (but post-1898) guns in mint condition. Such arms have some collector value, but not usually as much as a comparable pre-1898 model in only fair condition.

ESTABLISHING VALUES ON PRE-1898 GUNS

During the past few years, the value of antique guns has risen astronomically. Some Winchester 1866's and Colt Peacemakers, which you could pick up for maybe \$75 a few years ago, are now worth upwards of \$200 to \$400, depending on condition. Your best source of up-to-date values on antique arms is

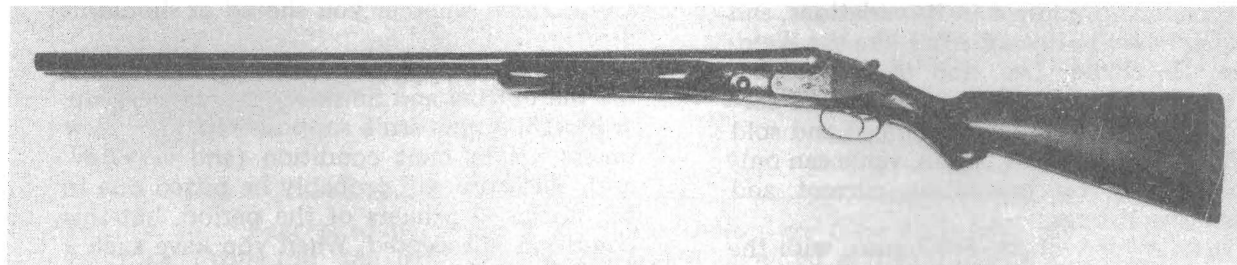


FIGURE 21 — A valuable collector's prize shotgun — the Parker DHE in 12-gauge.

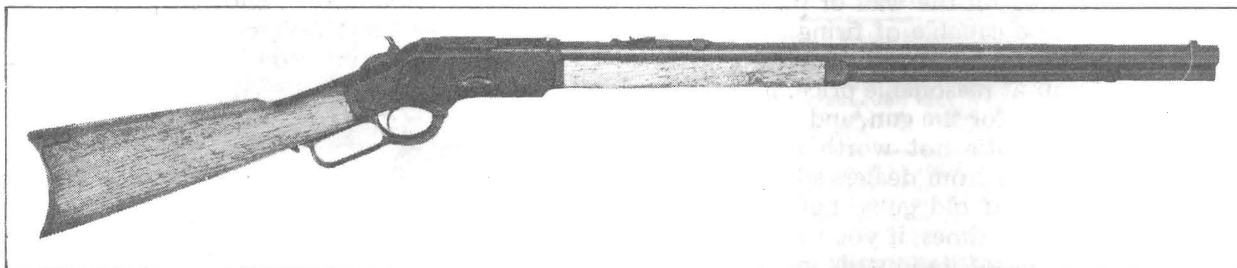


FIGURE 22 — The famous Winchester M1873. Collector's item or near-worthless old gun? The serial number tells the story.

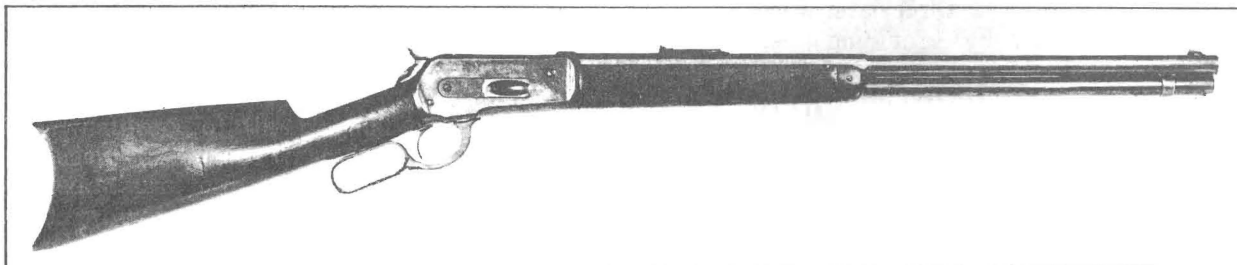


FIGURE 23 — The Winchester Model 1886. Rebluing and refinishing such a gun is pure anathema.

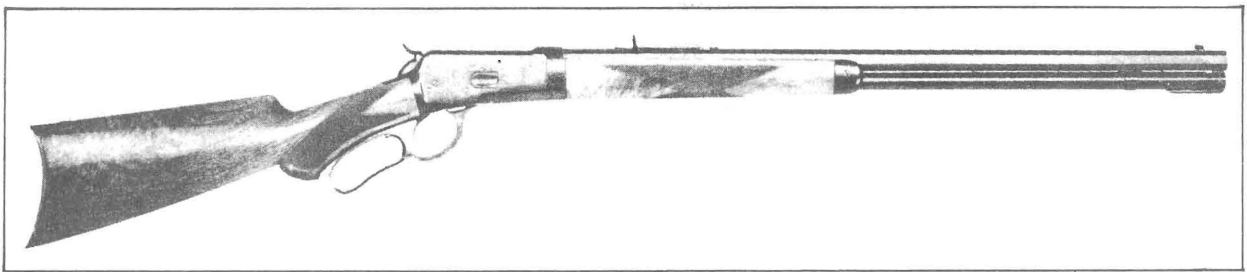


FIGURE 24 — The margin between “gem” or “junkie” with this Winchester Model 1892 may be nearly 50 years. Late carbine versions which were made until 1941, are worth little.

specialized collectors’ listings and bulletins, and in a more general sense “Shotgun News” and “Gun Week.” If you are going to get into collecting and/or trading pre-1898 arms, it’s mandatory that you subscribe to some or all of the publications listed at the end of this study unit.

You may occasionally have the opportunity to pick up valuable military arms in the pre-1898 classification. We’re not talking now about Mauser 93’s, the French Lebel, the Swiss Rubin, the SMLE, or others that have little collector value (Figure 25). Such guns as the Trapdoor Springfield in its variations, and subsequent U. S. Military rifles like the Ward-Burton, Hotchkiss, Lee, and to a lesser degree, the Krag-Jorgensen, are all martial collector’s prizes and should be priced and sold accordingly (Figure 26). Again, value can only be determined by consulting current and authoritative listings.

The value of all pre-1898 guns, with the exception of those found *in situ*, depends a lot on whether the gun is functional. Even though it will be hung on the wall or placed under glass, it must be capable of firing to be worth top dollar. An old gun with missing parts, offered to you at reasonable price, may be more than you paid for the gun, and unless the arm is functional it’s not worth much. Parts are often available from dealers specializing in various makes of old guns, but they don’t come cheap. Sometimes, if you can buy an old-timer with some of its innards missing at the right price, you’re better off keeping it for “cannibalization” purposes. Deal in or collect a given type of gun and one “junkie” can often restore two or three later arrivals to working condition by providing needed spare parts for each.

KNOW WHAT YOU’RE BUYING AND SELLING!

The line between getting stuck and picking up a real bargain in pre-1898 guns can be exceedingly fine. First, you have to know just what the gun is, its model rarity, and condition. If parts are missing, are they available —

and for how much? Is the missing part something you can make? Are the parts in that gun all original, or has the arm been assembled from the bones of many guns now in that “great junkyard in the sky?” All these factors have a bearing on what you should pay and what you can get for a given gun. As a gun pro, and especially if you’re going to be dealing in antiques, you should send for new catalogs and bulletins, as they are offered (Figure 27) and peruse appropriate periodicals regularly. Then, when someone plunks down some begrimed and obscure relic on your counter, you’ll know whether you should or shouldn’t deal.

Once you have the gun, keep your hands off the blueing and finish except for clean-up. A pre-1898 gun isn’t supposed to look new unless it’s in mint condition (and very few are). The bore will probably be pitted due to the corrosive primers of the period, but this condition is accepted. When you have such a gun (Figure 28), you’re not limited to selling it locally. An inexpensive classified ad in a national publication like “Shotgun News” could bring top dollar. And you can legally sell a pre-1898 gun interstate, even if you don’t have an FFL.

PROGRAMMED EXERCISE

3

1. Place the butt inside an old tire and yank the trigger with a string from a safe distance.
2. The bore.
3. D
4. A
5. B

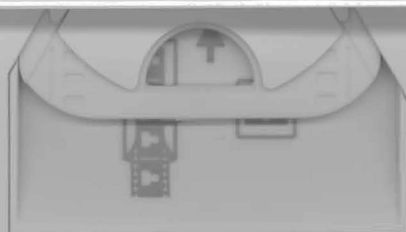




FIGURE 25 — The famed SMLE has been around since the 1890's. So many were brought into the U. S. that the collector value is nearly nil.

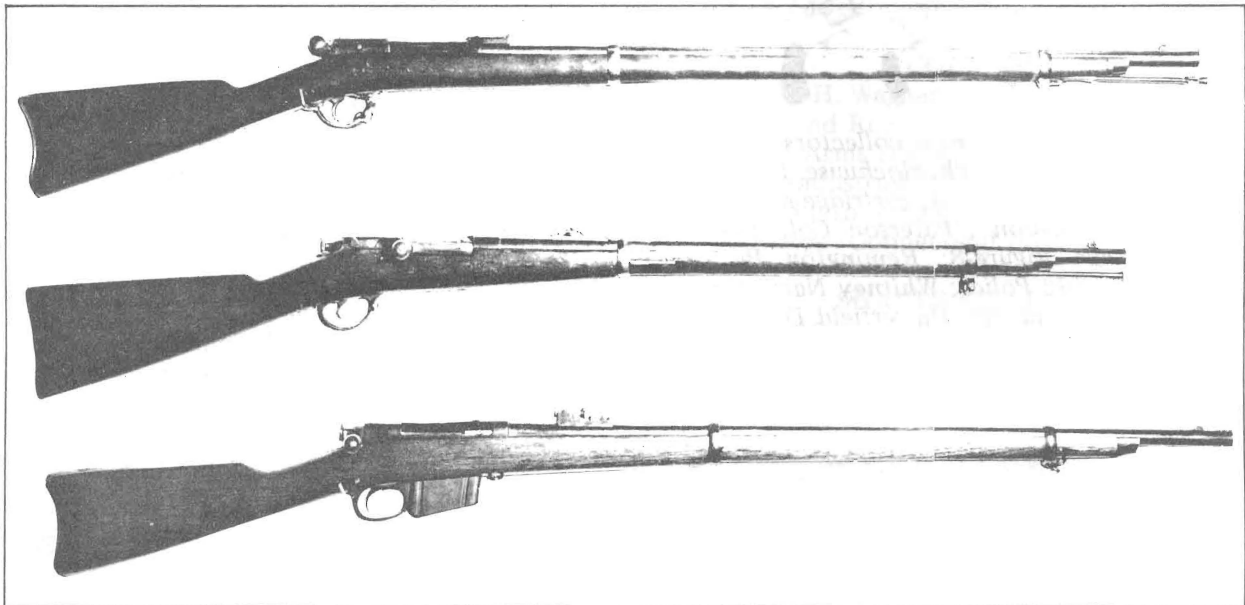


FIGURE 26 — Eagerly sought after by martial collectors are these early and transitional U. S. service rifles. From top: the Ward-Burton .50-caliber, patented in 1859; the Hotchkiss Model 1878 .45-caliber; and the Lee, Model 1882 .45-caliber.

<h2 style="text-align: center;">ANTIQUE ARMS</h2>	<p>RAREST COMBAT PISTOL—45 U.S. smoothbore sheet steel guerilla single shot: Get exact reprint of very rare instructions air-dropped with gun in WWII; also info on history, production runs. \$1.25 plus 25¢ post & handling: AJ&R, 14836 Covello, Van Nuys, Calif. 91405.</p>
<p>ILLUSTRATED ANTIQUE ARMS catalog featuring a wide selection of English, American, European and Oriental edged weapons, arms and armor. Many rare items. Send 50¢ for current issue or \$1.00 for next three issues. William Fagan, 27658 Wagner, Warren, MI 48093.</p>	<p>OVER 100 ANTIQUE GUNS—COLTS, carbines, flints plus accoutrements, swords, flasks, cartridge boxes. Send 25¢ for list or dollar for year's list, returned with first order. Victor Arcidino, 123 Benham Ave., Syracuse, N.Y. 13219</p>
<p>ANTIQUE PISTOLS, muskets, swords, armor. Illustrated catalog \$2. Robert Abels, Box 428A, Hopewell Junction, New York 12533.</p>	<h2 style="background-color: black; color: white; padding: 10px;">BOOKS & CATALOGUES</h2>
<p>FOR SALE: Winchester Model 70 308, Model 70 3006, Model 43 22 Hornet, Model 63A 22 Long Rifle. All pre 64. For information and prices write to Union City Sports Center, 28 So. Main Street, Union City, PA 16438 or call 814-438-2711.</p>	<p>CLOSEOUTS AND DISCOUNTS. Free list. Essential Press, 10453GS Medina, Richmond, VA 23235.</p>
<p>FIREARMS THAT MADE AMERICAN HISTORY. Flintlocks, Percussions, Springfields, Winchester, Swords, Parts. Illustrated catalog \$1.00. Westchester Trading, GS-2478 Arthur Ave., Bronx, N. Y. 10458.</p>	<p>MILITARY COLLECTORS CATALOG: German, Japanese, U.S., etc. Medals, flags, helmets, bayonets, many others 50¢. Next ten supplements \$1.50. Kelleys, Box 125, Woburn, Mass. 01801.</p>

FIGURE 27 — Sample classified listings from *Gunsport and Gun Collector* magazine, an excellent source of current antique gun listings and values.

PROGRAMMED EXERCISE

4

1. Is the value of a pre-1898 gun increased by its ability to fire if your customer only plans to display it?
2. Is a 1915 M73 worth rebluing and refinishing for resale?
3. You don't have a Federal Firearms License. Can you sell a pre-1898 gun interstate?
4. Should you ever reblue and re-finish a pre-1898 gun?
5. You have a pre-1898 gun. The bore is pitted. Does that decrease its value?

Answers on Page 21

section of your Course, every effort was made to secure listings of the various makes and models of guns as related to serial numbers and dates of manufacture, but without success. The information is generally available, but usually only for a specific gun or guns on request, and usually for a fee — as has been pointed out earlier. Winchester has released the serial numbers of the last guns produced in 1898 (Table 1), which constitute the last guns of given models that can legally be shipped interstate without regard to the gun control laws. (Local ordinances may, however, apply.) A gun with the next highest serial number, produced in 1899, might be identical to an earlier model in every respect; nevertheless, the "newer" gun is illegal to ship interstate without an FFL.

Winchester Serial Numbers

Model 1866 rifle no.	170101
Model 1873 rifle no.	525299
Model 1876 rifle no.	63871
Model 1885 rifle no.	82256
Model 1886 rifle no.	118433
Model 1890 rifle no.	65521
Model 1892 rifle no.	103316
Model 1894 rifle no.	53613
Model 1895 rifle no.	19477
Model 1887 shotgun no.	64842
Model 1897 shotgun no.	63633

TABLE 1 — Figures released by Winchester, showing the last serial numbers of guns produced prior to 1899.

Among the old-line manufacturers, a letter to Remington will be the least productive. Records covering all guns manufactured by the company prior to 1940 have been destroyed. Following are the persons to whom inquiries should be mailed concerning guns made by some of the other manufacturers:

WINCHESTER

Mr. T. E. Hall, Curator
Gun Museum
275 Winchester Avenue
New Haven, Connecticut 06504

COLT

Mr. R. H. Wagner
Parts and Records Manager
Small Arms Division
Colt Industries
150 Huyshope Avenue
Hartford, Connecticut 06102

SHARPS RIFLES

R. L. Moore, Jr., M. D.
517 Center Avenue
Philadelphia, Mississippi 39350

SMITH & WESSON

Mr. Roy C. Jinks
Historical Consultant
P. O. Box 2208
Springfield, Massachusetts 01101

While many sources of antique gun catalogs and books are listed in the various gun publication classified ads, two excellent sources of this material are:

N. Flayderman & Co., Inc.
Squash Hollow RFD No. 2
New Milford, Connecticut 06776

Mr. Charles W. Moore
RD No. 2
Schenevus, New York 12155

Stackpole, Digest Books, Inc., and Other Publishers

You may wish to add any number of the following books to your personal gun library . . .

Book of Pistols and Revolvers,
W. H. B. Smith

Book of Rifles,
W. H. B. Smith

Checkering and Carving of Gunstocks,
Monty Kennedy

Firearms Blueing and Browning,
R. H. Angier

Unit 13, Part 1

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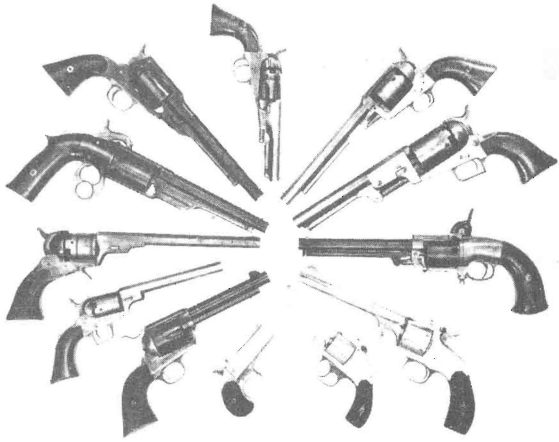


FIGURE 28 — Authentic collectors' handguns, starting at 6 o'clock, clockwise. Remington derringer; Colt S. A. A. cartridge revolver; Colt "Baby Dragoon"; Paterson Colt Texas Model; Savage Figure-8; Remington Beals; Colt Model 1862 Police; Whitney Navy; Colt Second Model Dragoon; Butterfield Dragoon; S&W Russian; and S&W Hammerless .38. (Courtesy National Rifle Association)

If you pick up a really old and/or nameless smokepole that defies identification, membership in the NRA can pay off in other than the obvious ways. The NRA experts are seldom stumped. Send a detailed description of the gun, its markings, and preferably a photo or sketch, and the chances are excellent NRA will come up with the answers.

Concerning old, pre-1898 guns manufactured by firms still in business, like Winchester, Colt, Marlin, etc., a letter to the factory mentioning the serial number and full particulars may produce the date of manufacture and other details (Figure 29). Most manufacturers charge a small fee for this service.

Before going on, please do Programmed Exercise 4. Make sure you write your answers on a separate sheet of paper before looking at the answers on the page specified.

SERIAL NUMBERS

Most manufacturers are notoriously stingy about releasing serial numbers and dates of manufacture "en bloc." In researching this

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Bought & Sold***

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ALBUQUERQUE, NEW MEXICO 87105

FIGURE 29 — When you suspect you have a valuable find, get an experts opinion. "GunSport and Gun Collector" magazine and "Arms Gazette" both carry a wealth of information on valuable and historical arms. By following these publications, you'll soon learn who many of the experts are.

PROGRAMMED EXERCISE "

4

1. Is the value of a pre-1898 gun increased by its ability to fire if your customer only plans to display it?
2. Is a 1915 M73 worth rebluing and refinishing for resale?
3. You don't have a Federal Firearms License. Can you sell a pre-1898 gun interstate?
4. Should you ever reblue and re-finish a pre-1898 gun?
5. You have a pre-1898 gun. The bore is pitted. Does that decrease its value?

Answers on Page 21

section of your Course, every effort was made to secure listings of the various makes and models of guns as related to serial numbers and dates of manufacture, but without success. The information is generally available, but usually only for a specific gun or guns on request, and usually for a fee — as has been pointed out earlier. Winchester has released the serial numbers of the last guns produced in 1898 (Table 1), which constitute the last guns of given models that can legally be shipped interstate without regard to the gun control laws. (Local ordinances may, however, apply.) A gun with the next highest serial number, produced in 1899, might be identical to an earlier model in every respect; nevertheless, the "newer" gun is illegal to ship interstate without an FFL.

Winchester Serial Numbers

Model 1866 rifle no.	170101
Model 1873 rifle no.	525299
Model 1876 rifle no.	63871
Model 1885 rifle no.	82256
Model 1886 rifle no.	118433
Model 1890 rifle no.	65521
Model 1892 rifle no.	103316
Model 1894 rifle no.	53613
Model 1895 rifle no.	19477
Model 1887 shotgun no.	64842
Model 1897 shotgun no.	63633

TABLE 1 — Figures released by Winchester, showing the last serial numbers of guns produced prior to 1899.

Among the old-line manufacturers, a letter to Remington will be the least productive. Records covering all guns manufactured by the company prior to 1940 have been destroyed. Following are the persons to whom inquiries should be mailed concerning guns made by some of the other manufacturers:

WINCHESTER

Mr. T. E. Hall, Curator
Gun Museum
275 Winchester Avenue
New Haven, Connecticut 06504

COLT

Mr. R. H. Wagner
Parts and Records Manager
Small Arms Division
Colt Industries
150 Huyshope Avenue
Hartford, Connecticut 06102

SHARPS RIFLES

R. L. Moore, Jr., M. D.
517 Center Avenue
Philadelphia, Mississippi 39350

SMITH & WESSON

Mr. Roy C. Jinks
Historical Consultant
P. O. Box 2208
Springfield, Massachusetts 01101

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W. H. B. Smith
- Checkering and Carving of Gunstocks,*
Monty Kennedy
- Firearms Blueing and Browning,*
R. H. Angier

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- Gunsmithing*,
Roy F. Dunlap
- Gunstock Finishing and Care*,
A. Donald Newell
- Home Guide to Muzzle Loaders*,
George C. Nonte
- Home Gun Care and Repair*,
P. O. Ackley
- Introduction to Modern Gunsmithing*,
Harold E. MacFarland
- Modern ABC's of Guns*,
R. A. Steindler
- Pistolsmithing*,
George C. Nonte
- Principles and Practice of Loading Ammunition*,
Earl Naramore
- Professional Gunsmithing*,
Walter J. Howe
- Small Arms of the World*,
W. H. B. Smith & Joseph E. Smith
- Gun Digest*,
edited by John T. Amber
- Shotgun Digest*,
Robert Stack
- 200 Years of American Firearms*,
James Serven
- Gun Collector's Digest*,
edited by Joseph J. Schroeder, Jr.
- Handbook for Shooters and Reloaders*,
Volumes I & II,
P. O. Ackley
- The Accurate Rifle*,
Warren Page
- Complete Guide to Gunsmithing*,
Charles E. Chapel
- Gun Owner's Book of Care, Repair, and Improvement*,
Roy Dunlap
- Gunsmithing Simplified*,
Harold MacFarland
- Sixguns*,
Elmer Keith
- Shotguns*,
Elmer Keith
- The Shotgun Stock*,
Robert Arthur
- The Encyclopedia of Modern Firearms*,
Volume I — Parts and Assembly,
Bob Brownell
- NRA Gunsmithing Guide*
- NRA Gun Collector's Guide*
- NRA Handloader's Guide*
- NRA Shotgun Handbook*
- NRA Questions & Answers Handbook*
- NRA Firearms Handbooks — Assembly and Disassembly*
- The NRA Guidebook to Shoulder Arms*
- The NRA Guidebook to Handguns*
- The Muzzle Loading Cap Lock Rifle*,
Ned Roberts
- Black Powder Guide*,
George C. Nonte
- The Gun 1834*,
William Greener
- Modern Breech Loaders, Sporting and Military*,
W. W. Greener
- Thoughts on the Kentucky Rifle in its Golden Age*,
Joe Kindig, Jr.
- Recreating the American Longrifle*,
William Buchele & G. Shumway
- Longrifles of Note, Pennsylvania*,
George Shumway
- The Modern Kentucky Rifle*,
R. H. McCrory
- Lock, Stock, and Barrel*,
R. H. McCrory
- The Pennsylvania-Kentucky Rifle*,
Henry J. Kauffman
- Gunsmith's Manual*,
Stelle & Harrison
- Gun Trader's Guide*,
Paul Wahl
- Guns Illustrated*,
edited by Harold A. Murtz
- Gun Digest Book of Modern Gun Values*,
Dean A. Grennell & Jack Lewis
- Gun Digest Book of Exploded Firearms Drawings*,
edited by Harold A. Murtz
- Handloader's Digest*,
edited by John T. Amber
- Hobby Gunsmithing*,
Ralph Walker
- ABC's of Reloading*,
Dean A. Grennell
- Home Gunsmithing Digest*,
Tommy Bish
- Military Small Arms of the Twentieth Century*,
Ian V. Hogg & John S. Weeks
- Cartridges of the World*,
Frank C. Barnes & John T. Amber
- Law Enforcement Handgun Digest*,
Dean Grennell & Mason Williams
- Bolt-Action Rifles*,
Frank de Haas & John T. Amber
- Black Powder Gun Digest*,
edited by Toby Bridges
- Gun Digest Treasury*,
edited by John T. Amber
- Arms and Armor Annual*,
edited by Robert Held
- The Age of Firearms*,
Robert Held
- Arms of the World — 1911*,
edited by Joseph J. Schroeder, Jr.
- Hunter's Digest*,
edited by Erwin A. Bauer

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The NRA Collector's Series 1885-1888-1906-1923

Modern Handloading,
George C. Nonte

Reloader's Guide,
R. A. Steindler

Lyman Cast Bullet Handbook

Hodgdon Shotshell Manual

Sierra Reloading Manual

Lyman Reloading Handbook

Pocket Manual for Shooters & Reloaders,
P. O. Ackley

Hodgdon Data Manual

Speer Reloading Manual

Hornady Handbook

Lyman Shotshell Handbook

Why Not Load Your Own,
Townsend Whelen

ANSWERS

4

1. Yes.

4. No.

2. No.

5. No.

3. Yes.

STUDY UNIT 13, PART 2

BASIC RESTORATION OF PERCUSSION FIREARMS

WALL HANGERS OR
REAL LIVE BANGERS —
PERCUSSION SPELLS VALUE

Defining the antique value of a gun made for metallic cartridges isn't always easy. Indeed, there is often a question as to whether such a gun is an antique or merely an old clunker. This problem never arises with percussion arms. Unless the gun is a replica, you know that any top-loader is *old* and entitled to the respect traditionally accorded to aged and infirmed blunderbusses.

As with all antique arms (except those found *in situ*) the value of a percussion gun is always enhanced when it is in working condition. And in many cases, to get an old-timer working properly and safely takes some doing. Replacement parts are available more often than you might think. Dixie Gun Works, for example, has a parts catalog for a great many percussion guns. Modern replica parts, nipples, hammers, springs, etc. can often be substituted without diminishing the antique gun's value. Quite often, though, you'll be required to either repair a damaged part or make a new one. Wall hangers are worth some money, functioning firearms a good deal *more*.

With percussion guns there is no clear-cut answer as to whether a given arm should be reblued or refinished. On some rare guns, refinishing will destroy much of the value; on others, such work is acceptable. There are no "factory standards" to meet, as the quality of metal work and wood finish varied greatly. If the original blueing is reasonably good, leave it alone; if it's shot, rebluing with the proper old-time method improves the appearance of the piece, and probably its value. The same goes for the stock finish. If the old finish is beyond touch-up, a new finish that "looks old" is the way to go. As with other antiques, you're striving to restore the gun to original, not "new" appearance. Every gun must be treated on an individual basis, and with any cosmetic improvements in keeping

with what is currently acceptable. If you get into this area of gun restoration, your best sources of answers are experienced dealers you meet at gun shows, and the various publications specializing in percussion arms. If you get your hands on an authentic Kentucky rifle, revolver, or other truly rare specimen, lay off on the cosmetic work, and everything but the most *basic* cleaning and adjustment, until you *know* something about that gun — what it's worth, whether you can secure needed parts, how far you should go in redoing the blueing and finish, etc. To plunge blindly ahead and subject the gun to uninformed ideas of antique restoration may "cost" you several hundred dollars!

Antique gun restoration requires considerable patience, a good deal of common sense, and above all a respect for the gun. If these old-timers could talk, what tales they could tell of long-ago hunts, Indian fights, battles between "The boys in Gray and Blue." Restoration of these guns involves both challenge and responsibility. Since there are no schematics as such on most percussion guns, and methods of manufacture differed widely, this subject can only be treated in a general sense. However, the similarities were greater than the differences between most makes.

PERCUSSION SHOTGUNS

Shotguns are the most common percussion arms around today. In the 1800's, the same as now, more scatterguns were made than rifles or pistols (Figure 4). You might occasionally come across an extremely valuable U. S. or foreign-made top-grade specimen, like a Joseph Manton, worth several hundred dollars. However, few common-grade doubles, even when in top condition, are worth more than \$100. Guns in good condition are frequently available for about \$50, those in poor shape for as little as \$25.

The brand name usually tells you nothing. In the last century it was a common practice for a wholesale hardware or farm equip-





FIGURE 1 — Nearly as many percussion guns are being made today as in the 1800's! Above are racks of new Navy Arms double-barreled shotguns and Zouave rifles, muzzleloaders all, ready for shipment. (Courtesy Navy Arms)

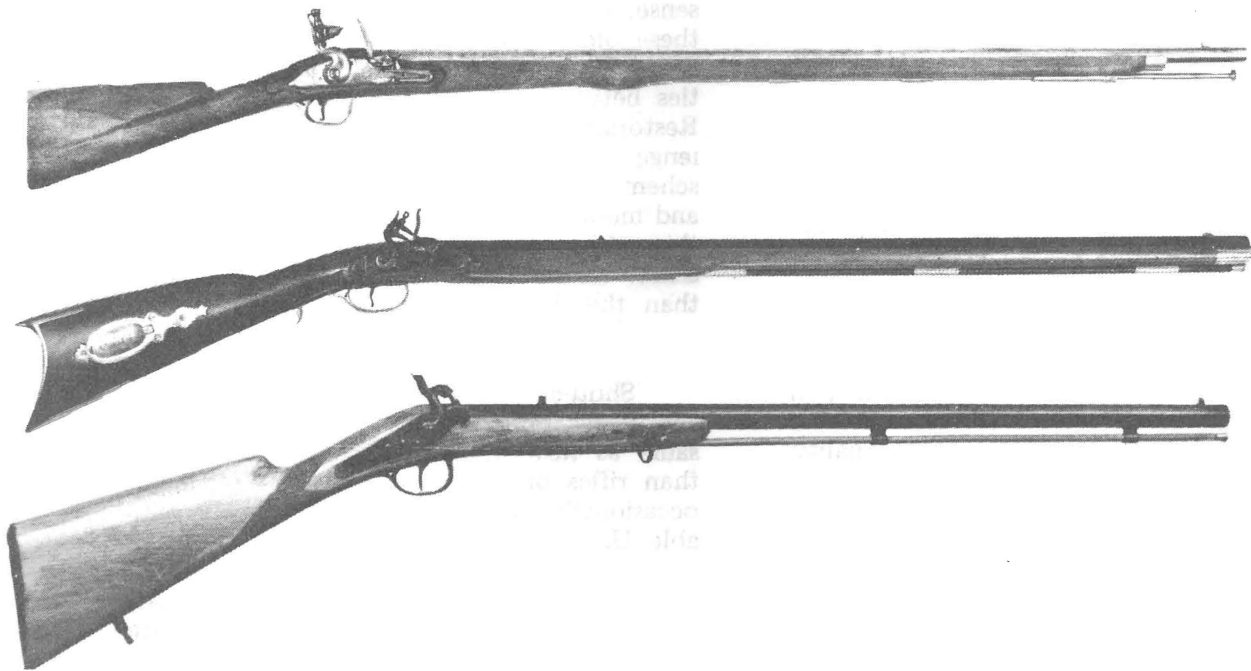
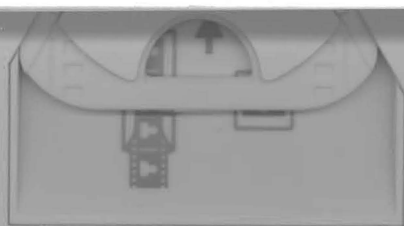


FIGURE 2 — The revived interest in blackpowder shooting has led to the manufacture of all types of replica long guns. From top, British Brown Bess musket, .74-caliber, by Arms International; Kentucky rifle, in .36 and .44-caliber, by Centennial Arms; double-barreled shotgun, 28-gauge, by Dixie Gun Works.



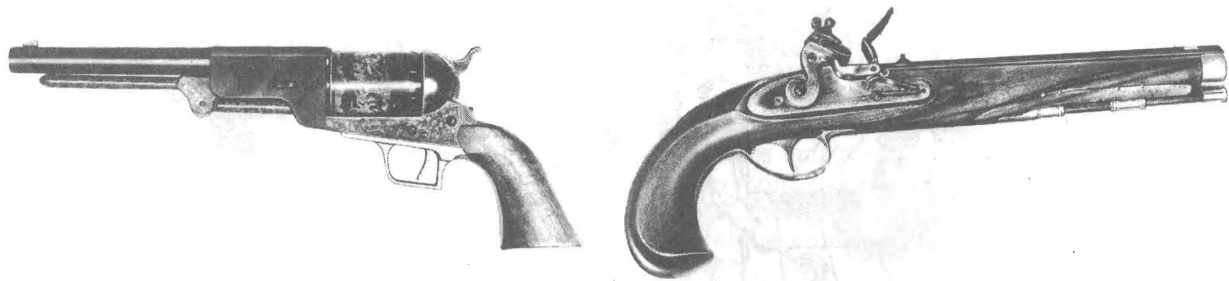


FIGURE 3 — New blackpowder pistols, of both muzzleloading and percussion persuasion, are available in replica form. Flintlock version of the Kentucky pistol (left) and Walker Model 1847 (right) are both by Navy Arms.



FIGURE 4 — Authentic percussion shotguns are quite common, and in the common grades are available for less than the cost of other percussion arms. Many scattergunners won't hunt with anything but a toploader! (Courtesy National Rifle Association)

ment company, ordering a couple of hundred guns to have its name engraved on the side-locks. For this reason many of the parts between different "make" guns are interchangeable.

Small wonder. They're often the same gun, made by the same manufacturer. The myriad brand names on old doubles sometimes confuse even the most experienced collector. A better clue to the value of a gun is its quality as reflected in workmanship and materials. When exceptional wood is used, when the metal-to-wood fit is superb, and the

craftsmanship is outstanding, that gun may have been hand-made by a small shop, and worth a lot of money. As you gain experience you'll know what to look for other than a brand name which may be meaningless (Figure 5).

Check to See if It's Loaded

Let's assume, that you picked up an old "Hunter's Pal" or whatever brand double, in sore need of repairs. The first thing to do is check to see if it's loaded. It's downright astonishing how many antique guns are fully



FIGURE 5 — These 16th-century woodcuts illustrate the blackpowder manufacturing process of the time. Left, purification of saltpeter; right, distillation of a basic component.

charged. Because of the time required for loading and the fact that a gun was often kept "on the ready" for emergencies, a large percentage of old scatterguns are loaded, with sometimes several charges — one on top of the other. Over the years Grandpa might just forget the gun was charged, and load it again, just to play safe. Kids also delighted in cramming marbles or any small objects they wanted to hide down the open tubes. You never know what to expect in the way of surprises with old guns!!

To check, run the ramrod all the way down the bore, and mark the rod where it's even with the muzzle. Withdraw the rod and place it alongside the barrel, with the mark again lined up with the muzzle. If the rod ex-

tends all the way to the breech, fine. If not, aren't you glad you found out that Ol' Betsy was still loaded for bear! You may get the bright idea of shooting the gun to clear it. Logical, but not very practical. You don't know the condition of the bore, how much powder and shot are under the wad, or whether someone dumped an iron object that could be rusted into place. (Also, some barrels that look good are rusted paper-thin on the inside.) The old-timers used a "worm," which was simply two corkscrews attached to the ramrod, to pull out the wad and free the charge (Figure 6). You can get a worm from Dixie Gun Works or make your own of brass, as steel can spark and blow-up the works. Blackpowder is sensitive. Always keep your head,

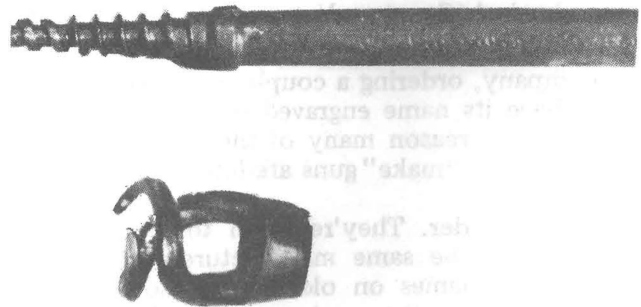
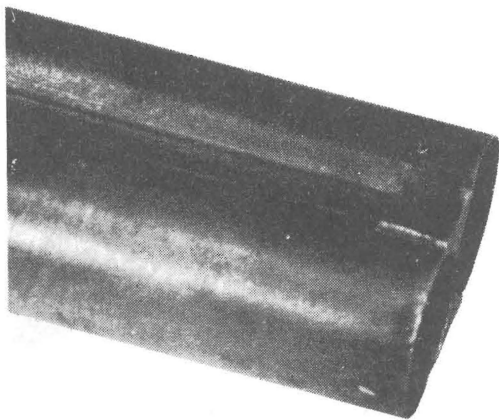


FIGURE 6 — Two types of wad pullers used to unload BP scatterguns. The homemade device (top) has a brass wood screw soldered to the end of a rod. The "worm" type was used in the past and also today.

hands, etc. away from the muzzle when attempting to unload any blackpowder gun.

It's a good idea to deaden the powder before you even attempt unloading. Most percussion doubles have fixed breech plugs which are impossible to remove. If they come free, dump out as much powder as possible and kill the rest with water. However, first try to remove the nipples with a nipple wrench. The chances are they'll be frozen. Excessive force will only damage the nipples and may create a spark which will ignite the powder (Figure 7). An easier way is to cock the hammer and, with a throw-away hypodermic needle, inject water through the hole in the nipple. Squirt in as much as you can, let it stand an hour or so, and you can then work at the charge from the muzzle in relative safety.

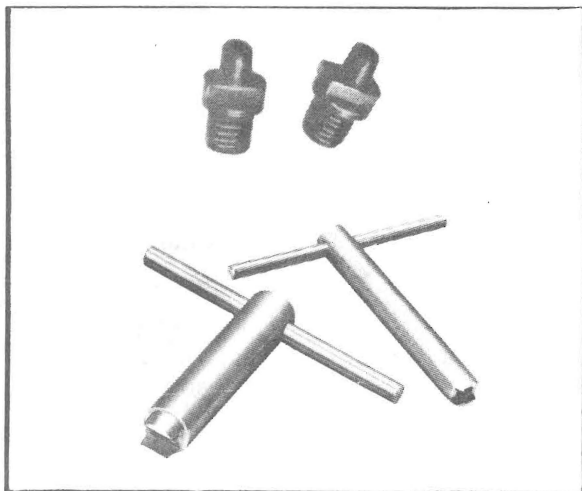


FIGURE 7 — Replacements for battered nipples (top) are available from the supply houses. Special wrenches (bottom) are used to remove the nipples without damage.

But never, we repeat, never, trust a loaded gun — water or no water. Keep your anatomy away from the muzzle!

Disassembling the Gun

Removing the Barrels. Don't be in a hurry. Have an assortment of different-sized screwdrivers on hand, and be prepared to make drivers if necessary, for a perfect fit. Next to patience, the right drivers and plenty of penetrating oil are musts for taking down antique arms. As you work, keep a notebook handy. Make a sketch of the gun, and jot down the sequence of parts removal. Be sure to identify each and every screw and its location. Two screws may look alike, but they won't seat properly in the wrong holes.

The first step is to remove the barrels from the breech. The majority of these guns

have two male hooks or lugs at the rear of the barrels, which engage matching recesses in the patent breech — a formed bar of metal screwed into the forearm (Figure 8). When the barrels are pivoted down, the two hooks slip into the recesses and the barrels are locked into place. The front portion of the barrels is secured to the forearm with from one to four barrel wedges, which must be pushed out to free the barrels.

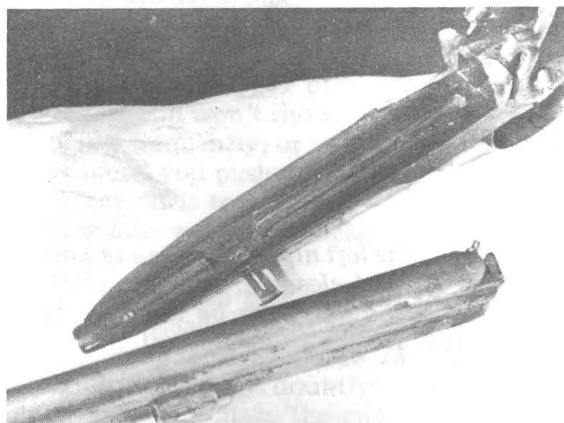
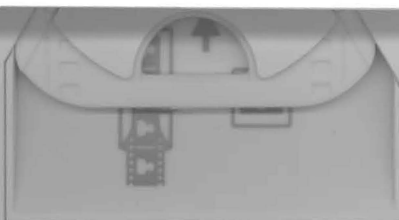


FIGURE 8 — This Joseph Manton double has but one lug on the barrel, which engages a recess in the patent breech (still in the forend wood). Note the barrel retaining wedge, pulled out at the front left of the forend. (Courtesy Hobby Gunsmithing)

Chances are the barrels are "glued" to the forearm (and to the patent breech) by aged dirt and grease. After removing the barrel wedges, tap down on the barrels, lightly, from one end to the other, with a rawhide hammer. This usually breaks the age bond, permitting the barrels to be pivoted up at the muzzle and away from the wood and breech. It is then an easy matter to remove the screws holding the patent breech to the forearm and lift the breech clear of the wood.

Inspecting/Repairing the Nipples. The nipples on which the percussion caps are placed are the most used and abused part of any muzzleloader. Dry-firing modern guns is bad enough, but hauling back on the hammers of a muzzleloader and letting them snap (which thoughtless people invariably do) soon batters them into uselessness (Figure 9). If they look okay on the outside, examine the hole through which the exploding cap fires the powder. It should be small and of uniform diameter, except in the few instances where the holes were made with a pronounced and obvious taper. If you plan to shoot the gun, it's a good idea to replace the damaged nipples. Substitution won't impair the value of the gun (except



on a very rare and expensive specimen).

Replacement nipples are invented by blackpowder supply houses in many different

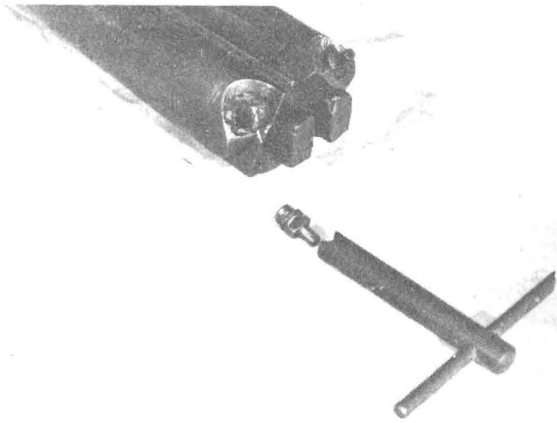


FIGURE 9 — The left nipple has been removed for inspection and cleaning, with the wrench shown. Pliers should never be used for this job. (Courtesy Hobby Gunsmithing)

sizes — you shouldn't have any problem matching the threads. The real fun with nipples is getting the originals out, for clean-up and for access to the breech end of the bores. Use a regular wrench or pliers and you'll probably either ruin or break off the nipple. A nipple wrench, costing little more than a dollar, usually breaks most nipples free with a quick turn of the wrist — although particularly stubborn cases often require the penetrating oil treatment. Occasionally a nipple is badly frozen, requiring heating with a propane torch, plus repeated soakings with penetrating oil. Never, *never* use the torch unless you *know* that gun is not loaded!

Cleaning the Bores. Once the nipples are out, you're ready to clean the crud of ages from the bore. An ordinary scalding hot detergent solution, swished up and down the bore with a piston made of a long dowel with a rag wrapped around the end, is just the ticket. Ten minutes of scrubbing is usually enough to break down and flush out the caked powder residue. Switch over to "piston-ing" with hot, clear water until the bore is clean. Then follow up with commercial bore cleaner and a brass brush, finishing with clean rags.

When the nipples are out, enough light can be beamed through the holes to let you examine the bore. If, however, the nipples are still in, you can make a simple device that will light up the bore like a night baseball game. Glue a small piece of mirror to a thin section of dowel, slightly smaller than bore diameter.

Then grind off the edges of the mirror until they are flush with the dowel. The device is dropped into the bore, mirror side up. When flush against the breech end, it brightly illuminates every part of the bore interior. Tilt the muzzle down, and the dowel and mirror drop out. Simple, but most effective.

Inspection will most likely reveal some pitting, much of which can be polished out with aluminum oxide cloth attached to a wood dowel and power drill. The remaining pits won't affect performance, and if they hold powder residue, so what? Blackpowder guns must be cleaned frequently anyway.

Before going on, please do Programmed Exercise 1. Make sure you write your answers on a separate sheet of paper before looking at the answers on the page specified.

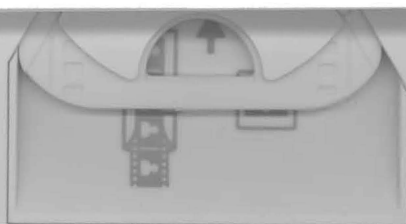
PROGRAMMED EXERCISE "

1

1. When someone brings you an antique double, what should be your first inspection step?
2. You want to unload old powder from a shotgun. What are two hazards if you use excessive force in testing the nipples with a nipple wrench?
3. What should you do first when dismantling an old gun?
4. You have an old shotgun of moderate collector's value. If you replace damaged nipples, will you decrease the gun's value?
5. How can you free a badly frozen nipple?

Answers on Page 8

Repairing Damaged Barrels. Unfortunately, percussion doubles often have muzzles that are ragged, worn, or a bit pucked — from being closed on in closets, used as a crowbar, or who knows. These defects can often be corrected with a few cross-strokes of a file. If the damage is too extensive, the barrel should be cut off just behind the irreparable area. You may or may not be removing part of the choke, as many older doubles had straight-



cylinder bores. If the patterns are too open, you can always form a jug choke.

Heavily rusted or deeply marred exterior areas can only be corrected by draw filing, which necessitates refinishing; also, fitting thins the barrel. Unless the gun is valuable, you can touch up the bare spots with cold blueing; otherwise it should be rebrowned. Thin barrels are dangerous. If you plan to shoot the gun, don't file deeply into the metal. Use emery cloth or a burnishing wheel to remove most of the nicks. Better a few exterior blemishes than a dangerously weak barrel.

Barrel dents are removed the same as in a modern shotgun barrel, with a dent raising tool — as has been discussed in a previous gun shop.

The top and bottom ribs, which hold the barrels together, should be carefully examined. Often a short section at one end or the other will be loose, which must be silver-soldered into place (Figure 10). The areas between the barrels and adjoining the ribs are prime locations for heavy rust deposits. Remove as much as you can with emery cloth and a burnishing wheel. If the rust is excessive, hang that gun on the wall as it's not safe to shoot. Sometimes an entire top or bottom rib is completely loose and has to be resoldered. Make sure you remove the rust from all soldering points or the joints won't hold. Other times, the top rib is damaged (Figure 11).

The thimbles, the tubular appurtenances that hold the ramrod to the barrel, are frequently loose or missing. Replacements are available from the supply houses, or you can

make them from cartridge cases (Figure 12). They are usually attached to the bottom rib by silver solder.

Basic Metal Repairs. A common cause of looseness in old doubles is improper fit due to excessive wear and soft steel between the barrel hooks and the recesses in the patent breech. After removing the breech from the wood, this can often be corrected and a tighter fit achieved by peening in the outside edges of the recesses with a ballpeen hammer. Confine your labors to the back portion of the breech, where your primitive method of metal extrusion won't show. Check your work in progress frequently, or you'll wind up filing off the metal you pushed back in.

If the fit is too sloppy, you have no recourse but to weld extra metal in the recesses, then file to fit.

Often the top tang of the patent breech is cracked, usually at the screw hole (Figure 13). If the crevice is wide or completely through the metal, it's doubtful that any silver solder repair will make the gun safe to shoot. Never buy an old gun with this defect. Sometimes, on valuable guns, a skilled smith will make a metal patch about 1/8" thick, the width of the tang, and extending at least 3/8" on either side of the crack. When the tang is relieved to accept the patch, the patch is silver-soldered and held in place with a C clamp. After cooling, the patch is fared into the adjoining metal by filing and polishing, and the tang hole is redrilled. Such a repair usually holds up when done expertly, but it's no job

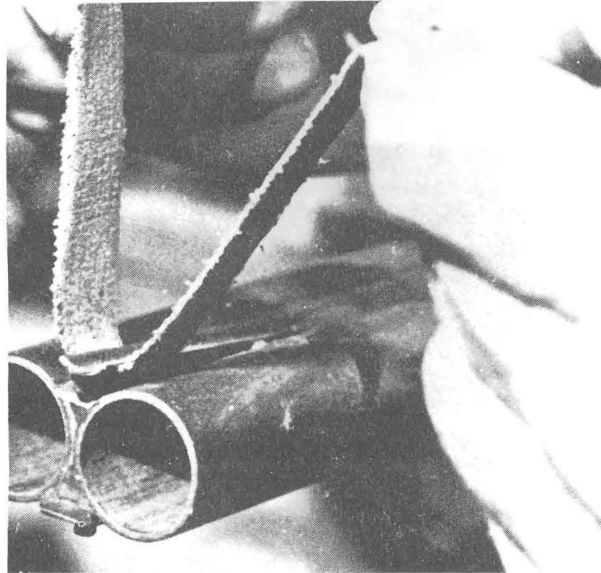
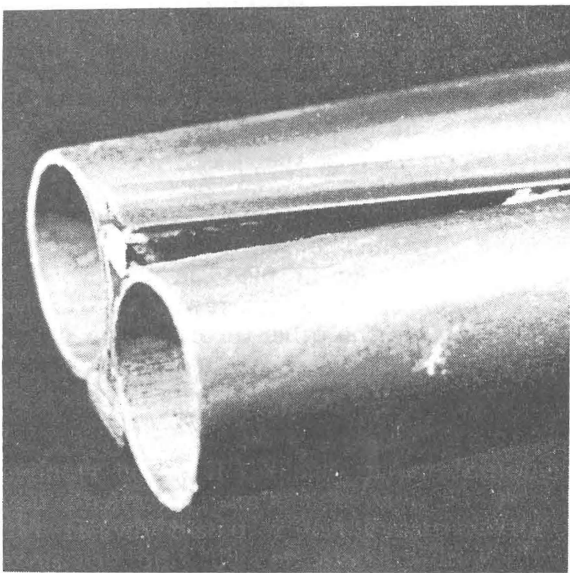
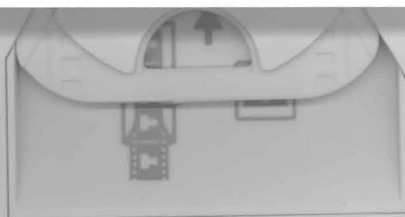


FIGURE 10 — Ribs are often loose at the front on old doubles. Raise the rib lightly to the point where the solder still holds (left), then use a strip of abrasive cloth to clean off old solder, rust, and crud — preparatory to resoldering. (Courtesy Hobby Gunsmithing)



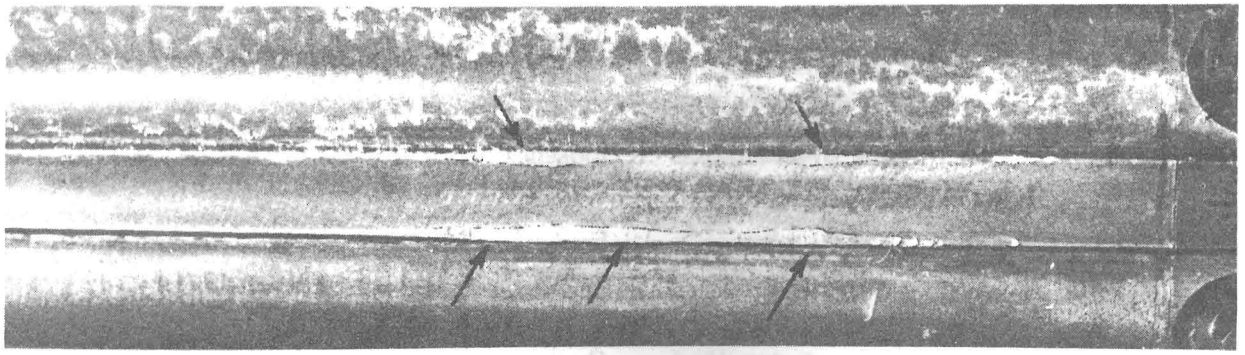


FIGURE 11 — Ribs on old doubles are sometimes pushed out of shape. The remedy? Push the metal back into place with a carefully applied cold chisel or punch.

ANSWERS

1

1. See if it's loaded!
2. (1) Damage to the nipple. (2) you may create a spark that ignites the powder.
3. Make a sketch of the gun.
4. No.
5. Heat with a propane torch and soak in penetrating oil.

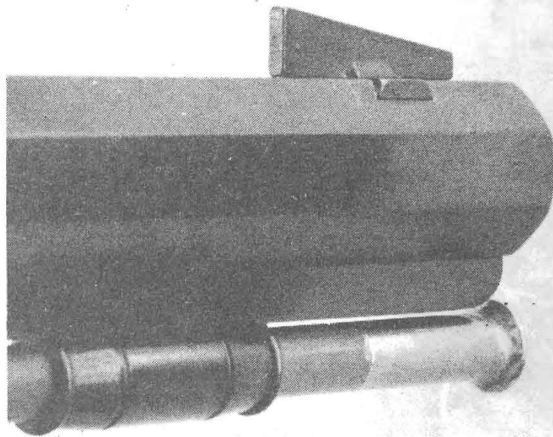


FIGURE 12 — Thimbles are used to secure the ramrod to the barrel on both BP rifles (as shown) and shotguns. Replacements are available or can be made out of cartridge cases.

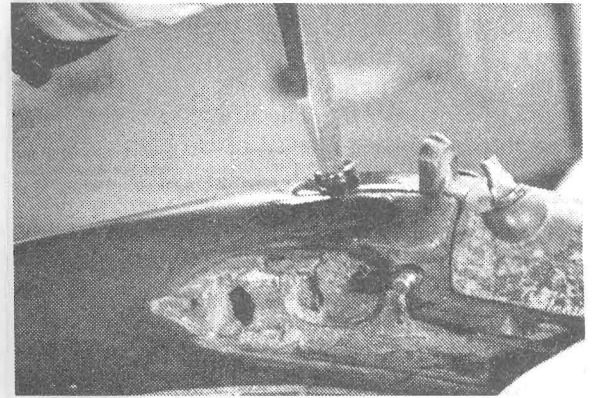


FIGURE 13 — Always carefully inspect the tang area around the screw hole. A bad crack here is difficult to repair (see text).

for the novice. Only the more valuable doubles are worthy of the time and trouble involved in this repair.

Before going on, please do Programmed Exercise 2. Make sure you write your answers on a separate sheet of paper before looking at the answers on the page specified.

Inspecting/Repairing the Locks. Most percussion shotguns are of sidelock design, with the locks held in place in the wood mortises by one or two long screws which pass from one lock to the other through the wood (Figure 14). The threads are usually frozen, requiring patience, a perfectly fitted driver, and penetrating oil for removal. Once the screw or screws are loose, use the screw, which is nearly but not quite free of its threads, to pull the first lock free of the wood. Then, using a small punch, push the second lock out from the inside. Never attempt to pry out a lock with a screwdriver or wedge; you'll splinter the wood for sure!

Old sidelocks are invariably in one of



PROGRAMMED EXERCISE

2

1. What potential trouble can result from heavy filing to remove rust or nicks from a barrel?
2. How would you normally correct moderate looseness between barrel hooks and recesses in the patent breech?
3. How would you correct excessive looseness in the same situation?
4. Thimbles are missing and you haven't time to get them from a supply house. What can you do?
5. A customer offers you an average old double for sale or trade. You see that the top tang of the patent breech is hairline-cracked clear through the metal at the screw hole. How should you handle this? (a) silver-solder it carefully. (b) make a 1/8" thick patch. (c) don't buy the gun (d) nothing; a hairline crack there is no problem.

Answers on Page 10

two conditions: splended or awful. Few are "in between." Generally, they are free of rust as previous owners kept these critical assemblies well oiled. If a lock works, leave it alone except for cleaning and oiling. Disassembly here is just asking for trouble.

Malfunctioning sidelocks are usually suffering (in order) from a loose or wobbly hammer, a broken or weak-sister mainspring, badly worn sears, or a combination of all these maladies. The hammer is connected to a lock component known as the tumbler, and the point of contact is the trouble spot. Some hammers have a square "hole" which fits over a square spindle or lug on the tumbler, other hammers have oval holes which fit over oval-shaped spindles. In better guns, the hole and spindle are tapered to compensate for wear and provide a constant tight fit. Other guns do not incorporate this self-adjusting taper. In any case, with or without tapers, the fit can become sloppy after years of use. If you can't locate a replacement hammer and tumbler, use the oldest gunsmithing technique around. To "tighten" the fit, position a small cold chisel parallel to the sides of the hole in the hammer and smack with a hammer. The chisel then extrudes or pushes the lips of the hole back into place. (Always do your work on the inside of the hammer, where it won't show.)

A second cause of a loose hammer is a worn, oversize hole in the side of the lock-plate, where the tumbler comes through. Again, extruding or pushing the metal around

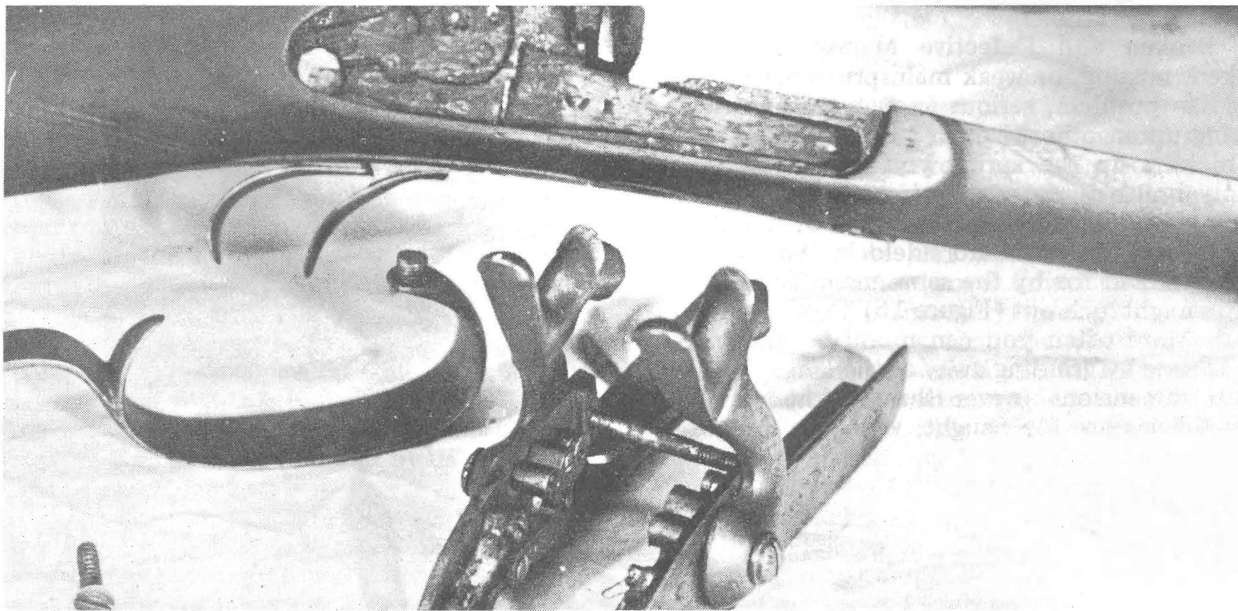
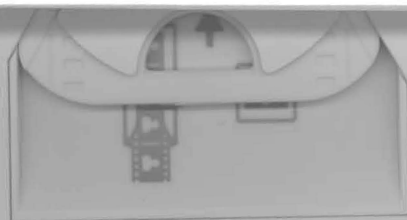


FIGURE 14 — The sidelocks in most percussion doubles are secured by a crosspin. Note the hole through the wood just above the triggers, through which the sear bars extend to connect the trigger sears. (Courtesy Hobby Gunsmithing)



2

1. A dangerously weakened barrel.
2. Peen in the outside edges of the recesses at the back of the breech.
3. Weld extra metal in the recesses, then file to fit.
4. Make them from cartridge cases.
5. C.

the hole back into the hole is the easiest solution. Here, you would get a piece of steel tube slightly larger than the oversize hole. After the lockplate is heated red hot, the rod is placed over the hole. By tapping the other end of the rod with a hammer, the metal can be shifted back into the hole.

Another problem that causes loose hammers is a broken or missing screw which is threaded into the tumbler spindle to prevent the hammer from working off the spindle. If the screw is missing, maybe you can find a replacement of the proper head size. Otherwise you'll have to drill and tap for a slightly oversize make-do screw. If the screw head is broken off, the same remedy is indicated.

Broken and Defective Mainsprings. A broken, missing, or weak mainspring can be a king-size problem, serious enough to warrant passing up an otherwise fair gun. Your chance of picking up the spring you need from a supply house is not overly impressive. Many of the old-time doubles, regardless of brand, had more or less standard sidelocks that were subcontracted for by the same manufacturer, so you might luck out (Figure 15). Don't count on it. More often you can modify a similar mainspring by grinding away at the length and width dimensions (never the thickness). If your efforts are for naught, you have no re-



FIGURE 15 — Types of mainsprings used in the various makes of muzzleloading rifles and shotguns. The similarities are pronounced, but sufficient difference remains to make interchangeability impossible.

Unit 13, Part 2

Page 10

course but to sit down and make your own or have someone skilled in the art make it for you (Figure 16).

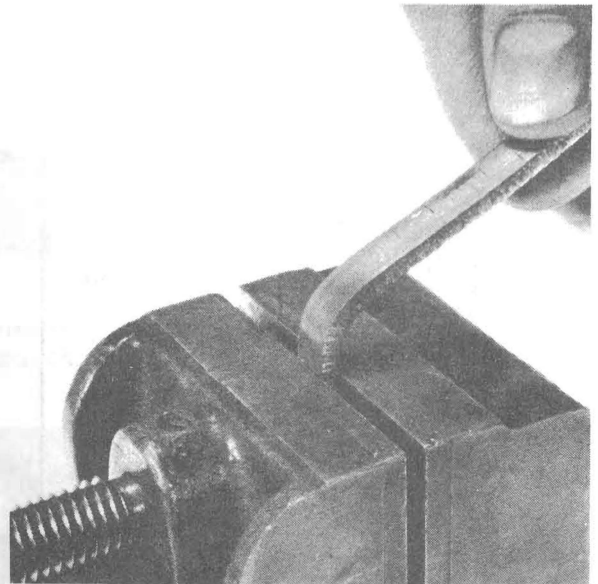
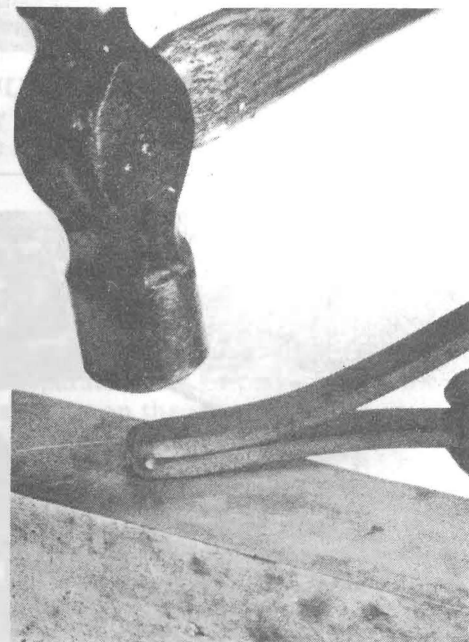


FIGURE 16 — When making a new mainspring, annealed (heat-softened) bar stock must be used. The metal is sawed and cold-formed, then retempered.



Weak mainsprings, with insufficient power to make the hammer explode the primer, can often be restored to full efficiency by retempering. You'll have to remove *both* the weak spring and its brother in the other lock. For this, a spring vise is a must. Try to remove these springs without such a tool and you can easily break them from a too-sudden release from compression.

To retemper the weak spring, heat it to a dull red to draw the remaining temper. Then bend it with pliers until its shape conforms to that of the "brother spring" you removed for comparison. When the spring is still dull red, plunge it into a small container of linseed oil. In a pinch, you can get by with 30-weight non-detergent motor oil. Water should *not* be used for tempering as it will make the steel brittle. After the spring has cooled down by itself, it must be drawn for additional strength. This is done by placing the spring in a small container, such as the lid of a mayonnaise jar and filling the lid with enough linseed (or motor) oil to completely cover the spring. Set the oil on fire, let it burn down completely, and permit the spring to cool by itself. The result should be a superbly retempered spring, equal to those processed in the most costly furnaces.

Worn Sears. Old doubles with worn sears have the disconcerting habit of discharging both barrels at the same time, with nearly as much damage to the shooter as to the target.

The problem usually results from wear on the tumbler sear notch, which can be corrected by simple stoning. Sometimes, though, the trouble is caused by a worn sear bar — an L-shaped link between the tumbler and trigger. This bar is mounted by and pivots on, a screw in the side of the lockplate. The upper part of the L engages the tumbler notch. When the trigger is pressed, the trigger bar presses up against the foot of the L and the sear bar pivots on the screw — thus slipping the top of the L out of the tumbler notch and permitting the hammer to fall. The top of the L where it engages the tumbler is frequently rounded or chipped, which can be corrected by stoning. If this doesn't do the trick, a new part is needed — and lots of luck in the finding. You may have to make a new sear by using the old one as a template.

About the only other common cause of trouble in the sidelock mechanism is worn screw holes, which usually involves drilling and tapping for a slightly larger screw. Sometimes the worn, overly large holes can be fixed by the cold chisel technique, extruding the raised metal back into the holes.

The foregoing applies to the most com-

mon types of sidelocks. You will occasionally run into locks that differ slightly, but common sense usually unravels the mystery. Percussion sidelocks aren't all that complicated, and they're all close relatives (Figure 17). Aside from the trouble spots mentioned, sidelock malfunction is often due to rust, burrs, and grime.

Percussion Double Triggers. Single and selective triggers weren't even on the horizon during the heyday of the percussion double. The systems used were simple on even the most expensive guns. The common-variety doubles have two triggers which pivot on a crosspin extending through the wood. On such guns, it didn't take much time until the crosspin's wood anchor points became sloppy. You *can* drill a larger hole through the wood and triggers and use a larger pin. A better idea is to glass-bed the anchor points of the existing pin. Drill a hole through the stock, use a special long pin of the same diameter as the trigger pin, and cover it completely with a release agent. After the glass has hardened, the long pin is removed and the old pin and triggers are reinstalled. The problem is over.

The better grade doubles had their triggers fitted to a special plate or to the trigger guard, with the crosspin anchored in metal. Such arrangements give little trouble, although wear sometimes enlarges the crosspin holes. This problem can be corrected by drilling a new and slightly larger hole through the triggers and mounting plate and using an over-size pin — or by the old cold-chisel extrusion "technique."

Making a Replacement Ramrod. Most percussion doubles (and rifles) are sold without the original ramrod, or with a homemade job that looks like an Indian kid's first arrow (Figure 18). It's no big trick to make a replacement that *looks* and works as well as the original. Get a *hardwood* dowel of the right diameter to slip smoothly through the thimbles, and no shorter than the length of your barrel. Push it through the thimbles and into the hole in the forearm, making sure that said hole isn't clogged with debris or crud. When the rod is all the way home, mark the muzzle point and saw off the rod at the muzzle point. You will need a concave brass button for the tamping end, which is available from antique and replica parts suppliers. Such buttons are secured to the rod with epoxy or a crosspin. When the button is in place, the rod should be trimmed so that the button is about 1/4" behind the muzzle when the rod is in position under the barrel.



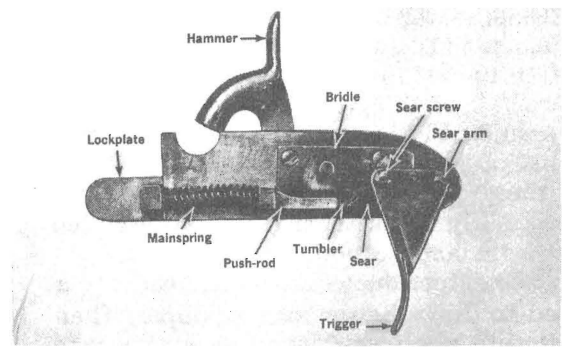
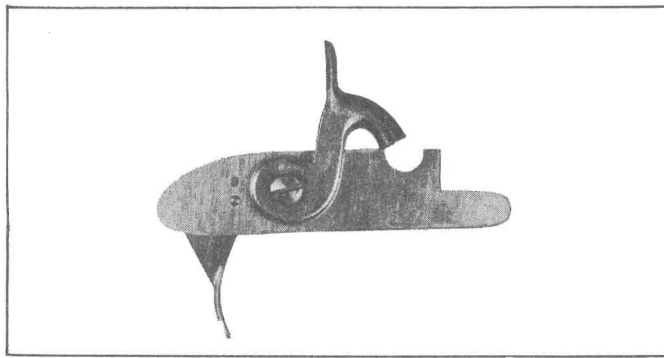


FIGURE 17 — Improved, modern versions of old sidelocks usually employ a coil spring which makes for a much simpler design. (Courtesy National Rifle Association)

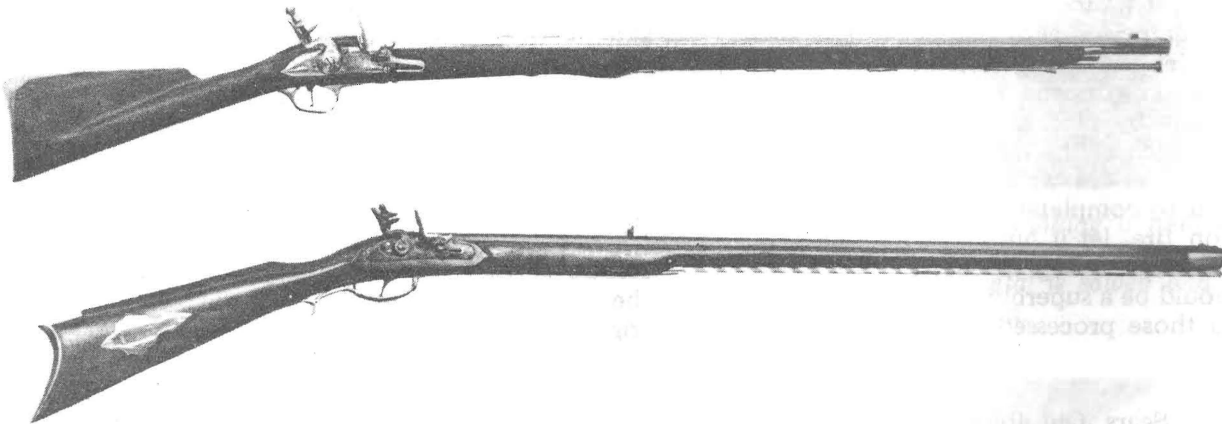


FIGURE 18 — All muzzleloaders had integral ramrods for loading and cleaning. Military rods were usually made of metal (top), as shown with the Brown Bess musket; rods used with non-military guns such as the Kentucky rifle were invariably of wood. Note the traditional wood striping.

The traditional spiral markings on antique rods can be duplicated by using a propane torch adjusted to a needle flame. Set the burning torch on your workbench, then slowly move and rotate the rod past the flame, carefully controlling the burning. With a bit of practice on a scrap dowel, it shouldn't take long to get the old technique down pat. Then sand the patterned dowel lightly; if it's too white, stain the wood to match the stock. Apply a coat or two of stock oil and everyone who sees the rod will "know" it's the "real thing."

Before going on, please do Programmed Exercise 3. Make sure you write your answers on a separate sheet of paper before looking at the answers on the page specified.

Stock Repairs and Refinishing. The value of all but extremely rare and valuable doubles can usually be increased by gussying up the original stock or even restocking providing a traditional finish is used. Shaped stock blanks

(you do the inletting) are available from many suppliers. Old stocks are frequently rotted out in the areas adjacent to the nipples because of the corrosive percussion caps exploding over the wood. The giveaway is a dull white color in these areas. About the only remedy is cutting away the rotted portion and replacing it with a wood inlay, or plastic wood or epoxy — which will stand out like a streetwalker at a revival meeting.

Often the wood around the sideplates will be mangled, through the less than tender care exercised by previous owners in removing the plates. Here, too, wood inlays or glass are about the only solution. If the stock is too far gone, and the hardware and barrels are in good shape, you're usually better off restocking the old gem and retaining the decorative furniture.

A Word of Caution. After restoring an old double, you want to shoot it. Fine. But remember, that's a blackpowder gun and you shouldn't consider using even light charges of



1. What's the most common cause of malfunctioning sidelocks? *LOOSE HAMMER*
2. Which one of the following is not a cause of a loose hammer? (a) poor spindle hole fit. (b) enlarged lock-plate hole for tumbler. (c) broken screw in tumbler spindle. (d) wear on the tumbler sear notch.
3. What would you do about a weak mainspring that doesn't have the power to make the hammer explode the primer? *RETEMPER*
4. How is a sear bar mounted? *SCREW ON SIDE OF LOCKPLATE*
5. What is the most common problem in the standard old double-triggered crosspin anchoring system? *WORN SCREW HOLES*
6. You are making a ramrod for an old percussion double. You have gotten a hardwood dowel that fits through the thimbles and is longer than the barrel. You've checked it against the gun for length and sawed it off at the right point. What do you do next? (a) affix a tamping button. (b) fine-trim the rod to fit 1/4" behind the muzzle. (c) burn in traditional spiral markings. (d) stain and oil the stock.

Answers on Page 15

smokeless powder under any circumstances. If you're not sure of the gauge, and it might be an 11, 13, or 15-gauge, measure the bore with a bore micrometer or calipers. Then figure out the closest "standard" gauge on the small side, and use the loading data for that standard gauge. In other words, if you have an 11-gauge gun, select a 12-gauge rather than 10-gauge load as an index. What do we mean by "loading data"? Modern shotshells are still rated by blackpowder equivalent. If a modern 12-gauge load is 1-1/8 ounces of shot with the smokeless powder equivalent to three drams of blackpowder, you'd simply use three drams of blackpowder with 1-1/8 ounces

of shot. You go back to the *original* loads and forget the smokeless "equivalent" (Table 1).

CHRONOGRAPHED VELOCITIES WITH PLASTIC WAD

Round	Velocity, fps		
	3 drams/ 1-1/8 oz.	3-1/4 drams/ 1-1/4 oz.	3-3/4 drams/ 1-1/2 oz.
1	1017	1087	962
2	1060	1047	978
3	1050	1075	1068
4	1000	1078	1061
5	1016	1081	890
6	1069	1059	984
7	1010	1073	1058
8	1011	1042	994
Average Velocity	1029	1068	999
Maximum Average			

PATTERN TEST RESULTS

Gun/Barrel	Felt Wad	Cal West Slit Cup	Herter Cap
Green River Fowler	51.5%	55.9%	69.4%
N.J.S. (right)	45.8%	53.3%	66.5%
N.J.S. (left)	47.5%	50.3%	66.95%

TABLE 1 — Velocities nearly equal to modern loads are gained with "equivalent" BP loads as shown in the top table. Same open-bored guns achieve cylinder patterns with felt wads, full-choke patterns with plastic shot cups.

Always fire four or five test shots from each barrel, with the gun supported by an old tire and discharged by a string, before shooting it from your shoulder.

PERCUSSION RIFLES

Non-replica percussion rifles like the Hawken, Sharps, and GI. Springfields without the trapdoor modification are quite rare today (Figure 19). Your chances of picking up an original frontloading rifle are only about half those of locating a shotgun of the same vintage. Fewer rifles were made, and fewer survived. As a result, percussion rifles are valued at about twice the price of percussion shotguns of comparable condition and quality.

The procedure to follow in restoring and repairing antique rifles is quite similar to that used on venerable shotguns, and is, if anything, a bit simpler — you have but one barrel and one lock to challenge you. The first step, as with all toploading guns, is to determine whether the rifle is loaded. It frequently is, and for the same reason old shotguns are often



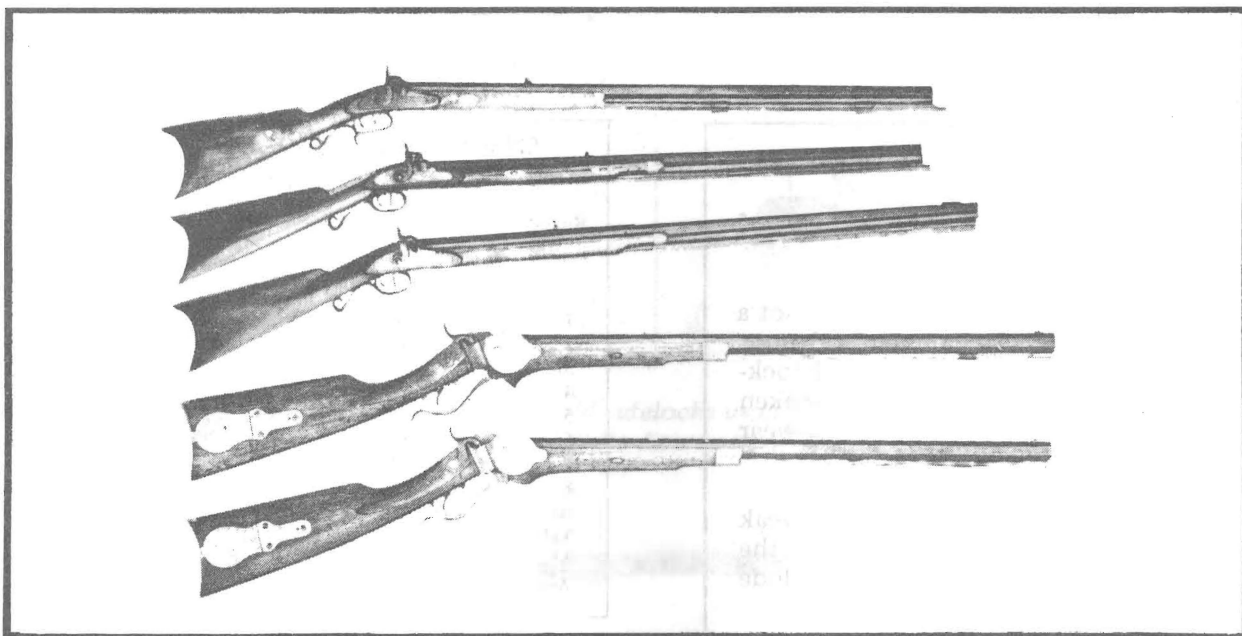


FIGURE 19 — The three guns at the top are original Hawken muzzleloading mountain rifles, circa 1855-1860. The two rifles at the bottom are converted breechloading Sharps.

found loaded but unprimed — the gun was kept semi-ready for a chance shot at game out the back door, or for self or home defense. The same safety steps outlined for shotgun “deloading” should be observed. However, a special screw tool is necessary for pulling the ball.

Removing the Barrel

When you’re sure the barrel is clear, release it from the wood by pushing out the barrel wedges or pins along the forend and driving off the barrel band (Figure 20). Using a properly fitting driver (and probably penetrating oil), remove the tang screw. Don’t tap the barrel upward and out of the stock right away or you’ll probably splinter the wood because of the dirt and grease age bond between the metal and wood. Tap lightly down on the barrel with a rawhide hammer, moving from one end to the other. Then lift the barrel straight up without twisting to either side.

A percussion barrel looks much like a contemporary barrel except for the breech plug threaded into the bore. The breech plug is usually soldered or otherwise permanently set into the tang. Leave it there.

To screw out the plug without damage to the tang or gripping lug, a special wrench must be made. Use an ordinary wrench and you’ll scar the tang and lug badly. Make a template by using two pieces of cardboard, one for each side of the lug. When the pieces are cut out to fit snugly around the lug, tape them together. Lay the template on a piece of



FIGURE 20 — Old barrel bands can be tough to remove. Plenty of penetrating oil, a C clamp to compress the band retainers, and a wooden dowel tapped with a hammer usually do the job.

strong, flat 3/8” steel and scribe for cutting. The wrench should have at least an inch of metal on either side of the jaws, and a handle about a foot long for leverage. File and fit until the plug/wrench contact is snug.

Penetrating oil should be run down the bore, squirted around the plug/breech junction, and allowed to soak in for 20 minutes or so. Mount the barrel in a padded vise and tap the wrench handle with a hammer. If the plug doesn’t break free, repeat the penetrating oil/soaking procedure. If the plug is still frozen, discontinue hammering as too many blows will damage the plug and the wrench.



ANSWERS

3

1. A loose or wobbly hammer.
2. D.
3. Retemper the spring.
4. With a screw in the side of the lock-plate.
5. Crosspin anchor points in wood quickly become enlarged.
6. A.

Removing Frozen Plugs

Now heat the breech plug with a propane torch until it's too hot to touch. Let it cool by itself. Then heat the breech or threaded end of the barrel until it, too, is too hot to touch. Before it cools, fit the wrench over the lug and start tapping. This procedure (you may have to repeat the heat-treatment a couple of times) usually expands the metal to the point where it will break free of the rust/residue bond. Naturally, and unless you're interested in swapping your gun for a harp, don't apply heat unless you *know* the gun is not loaded!

When the plug is free, clean it and the internal threads thoroughly, then screw the plug back into the bore (Figure 21). Ideally

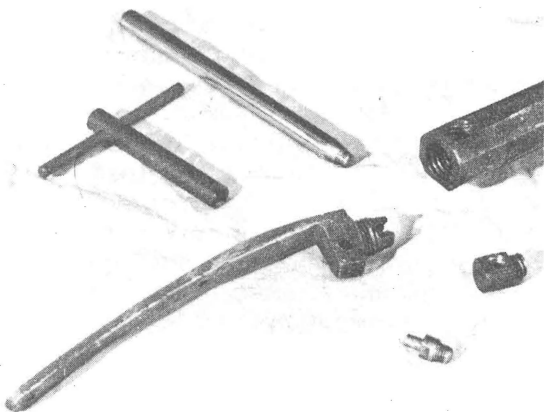


FIGURE 21 — BP barrel disassembled. Note that the breech plug is permanently affixed to the tang. The nipple was removed with the T-shaped wrench. The drum was unscrewed from the barrel with the threaded rod. (Courtesy Hobby Gunsmithing)

and with hand force only, the plug should stop about 1/8" short of the travel necessary to prevent gas from escaping when the gun is fired. If the plug is worn and goes *past* the alignment point with only hand pressure, a doughnut-shaped brass washer or spacer must be cut to a thickness that permits the breech plug to align perfectly with only light tapping of the wrench. A lead washer can be used, but only if the plug will be left in place. Repeated screwing and unscrewing of the plug soon renders a lead seal useless.

Before going on, please do Programmed Exercise 4. Make sure you write your answers on a separate sheet of paper before looking at the answers on the page specified.

PROGRAMMED EXERCISE

4

1. What does a dull white color in the stock area near the nipples tell you?
STOCK IS ROTTEN
2. If you restock the average old double, you will probably: (a) destroy its value. (b) increase its value. (c) not affect its value. (d) decrease its value only slightly. **(B)**
3. To determine loading information for an old double, you should use the loading data for a standard gauge that has what relationship to the old gun gauge? **(a)** one number higher. (b) one number lower. (c) two numbers higher. (d) two numbers lower.
4. How much should a percussion rifle (of comparable condition and quality) be worth compared to a percussion shotgun? (a) half as much. (b) about the same **(c)** twice as much. (d) four times as much.
5. When can you use a lead washer to correct the alignment point of a breech plug? *ONLY IF PLUG WILL BE LEFT IN PLACE*
6. You are replacing and realigning a cleaned breech plug. You find that the plug is worn and goes past the alignment point with only hand pressure. You know that the breech plug will be dismantled frequently in the future. What will you use to seal it properly? (a) a lead washer. **(b)** a brass washer. (c) a square washer. (d) liquid washer filler.

Answers on Page 16

Removing, Repairing, and Replacing Nipples

On the majority of percussion rifles, the nipple is threaded into a drum and the drum is threaded into the breech end of the barrel. A few old rifles have a shotgun-type arrangement where the nipple is threaded directly into the barrel. Removal in this instance is the same as when removing a nipple from a percussion shotgun.

With the more commonplace drum arrangement, the nipple is removed from the drum with an appropriate-sized nipple wrench. (The use of pliers or ordinary wrenches usually dings and batters the nipple.) The drum often creates a bit of a problem. Sometimes a drum has flats on the base which permit the use of a tight-fitting wrench, common or custom-made. More frequently, there is no point on the drum for the wrench to grip. In these cases, the best procedure is to turn a foot-long length of steel rod so it can be threaded into the nipple hole in the drum. When turned, the rod acts as a wrench and lever (Figure 22). Penetrating oil and sometimes heat are necessary to break the nipple free of the drum and the drum free of the barrel.

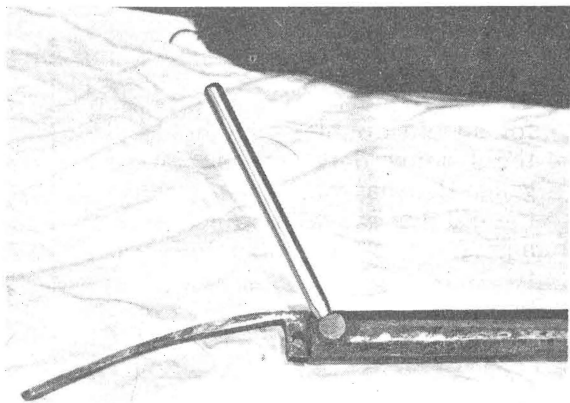


FIGURE 22 — Removing the drum. The threaded rod is inserted into the nipple hole and tightened down. Plenty of leverage is provided by the long handle. (Courtesy Hobby Gunsmithing)

Both nipple and drum should be thoroughly cleaned and inspected for damage. If the nipple is badly battered, order a replacement — slightly oversize if necessary — which will work when the drum is drilled and tapped. Cracked or frazzled drums can sometimes be replaced with units of the correct thread; at other times the barrel will have to be drilled and tapped for an oversize drum. If a replacement isn't available and you have the proper

ANSWERS

4

1. That the stock is rotted out.
2. B.
3. A.
4. C.
5. Only when the plug will be left in place.
6. B.

equipment or know a good machinist, it's best to turn, drill, and thread a new, matching drum. When working with antique guns, you have to know a good deal more than how to order and replace a part from a manufacturer's catalog!

The new drum (and nipple) must fit tightly and provide a gas-tight seal. Sometimes a brass or lead washer will do the trick when the fit is too loose. Because of the many different types of percussion rifles and modifications made over the years, there is really no such thing as factory-standard repair procedure. Each gun is an individual.

Cleaning and Checking the Bore

Your next step is to clean the bore thoroughly, with the plug out. Use hot water and detergent, followed by a commercial bore cleaner and brass brush treatment to remove light rust and any blackpowder residue. The barrel will probably show some pitting, but if minor this will have little adverse effect on accuracy. A condition that *will* louse up accuracy is excessive wear at the muzzle, caused not by bullet wear, but by decades of "pistoning" the ramrod up and down in the loading procedure. Many early shooters didn't have or use false muzzles to minimize bore wear at the muzzle (Figure 23).

If the bore diameter is badly oversize near the muzzle, an inch or two of the barrel can be cut off and filed square. This often restores accuracy while having no appreciable effect on velocity. However, it's always best to shoot the gun first to see how badly accuracy is off before resorting to such drastic measures. Also, barrel shortening can reduce the value of the gun while creating additional work, es-



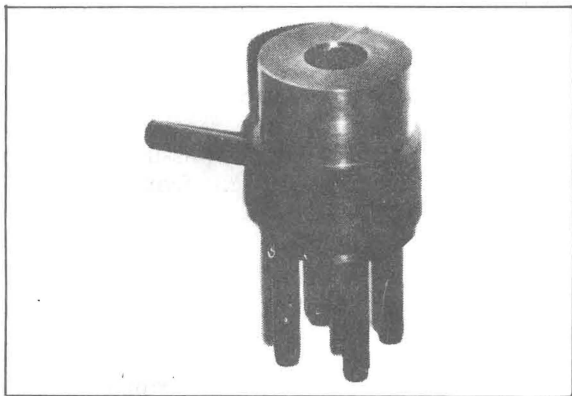


FIGURE 23 — A false muzzle, when inserted into the bore, holds the ramrod away from the bore. Wear at the muzzle plays hob with accuracy.

pecially if the stock extends out to the end of the barrel.

If the entire bore is badly worn, the gun may be worth “freshing out.” Many an old-time rifle started out as a .40-caliber and ended up, years later and after several “freshings,” as a .50 or even .58-caliber. As you’ve probably gathered, “freshing” refers to re-

boring — cutting the bore and grooves to the next size up as the existing bore became worn. There are firms that specialize in this work. The basic value of your rifle may justify a new lease on its life (Figure 24).

Determining Caliber

Old guns seldom have the caliber stamped on the barrel. You can determine the exact bore measurement by using a lead ball that will just fit, pushing it through the bore and out the unplugged breech end with your ramrod. Measuring across the raised lands with a micrometer will provide the groove diameter and the size of Minie ball to use (Figure 25). You normally allow .01” for the patch, so if the groove diameter is .45 you would use balls of .44 caliber. For faster loading, some of the old-timers used .45-caliber balls in .45 bores, but “one caliber for the patch” (one-hundredth of an inch) provides better accuracy because of the tighter bore-to-patch fit.

When the ball and patch are of the correct size, the ball can be seated with only firm hand pressure on the ramrod. If tapping is necessary to drive the ball home, either the

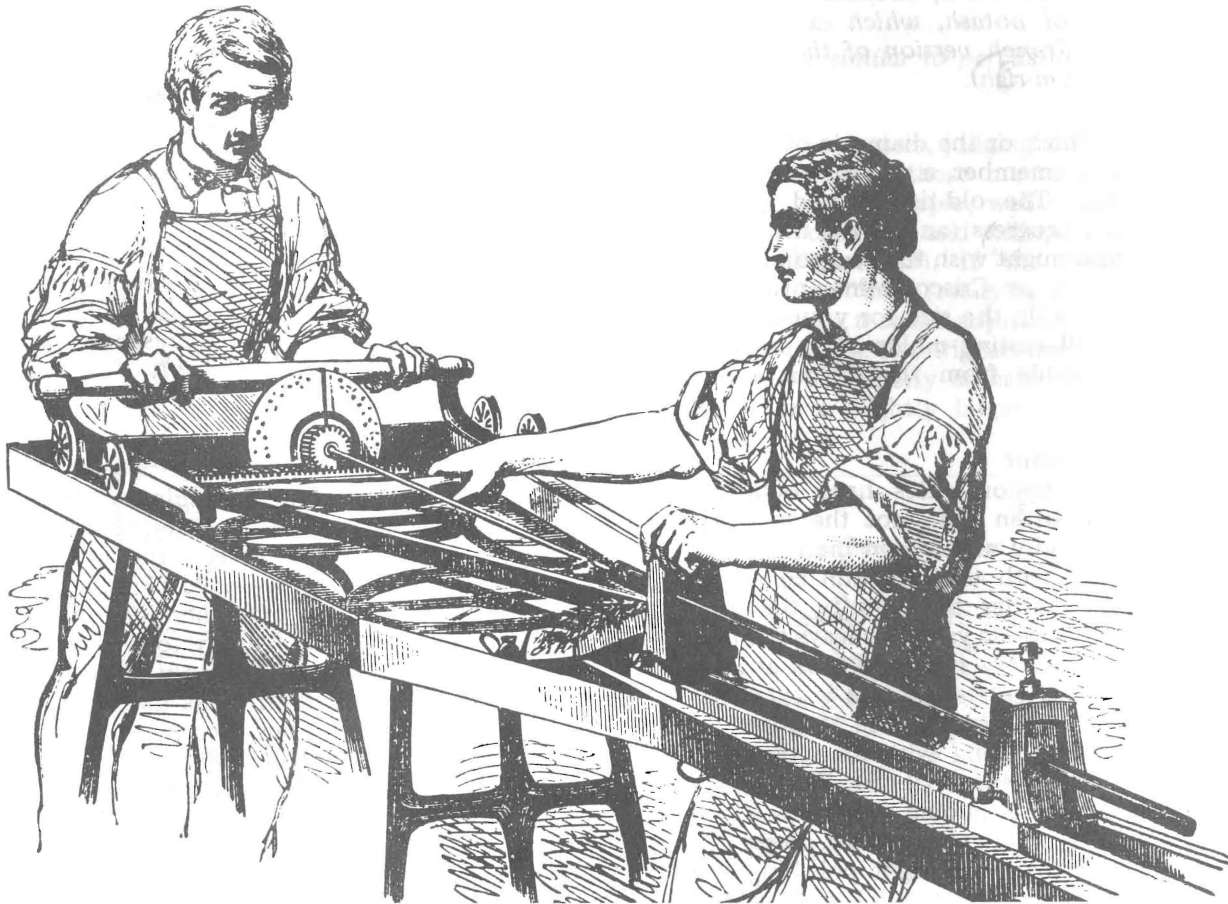


FIGURE 24 — Old woodcut showing one of the better types of rifling machines of the 18th century. The barrel was held stationary while the cutter rotated by a cog arrangement.

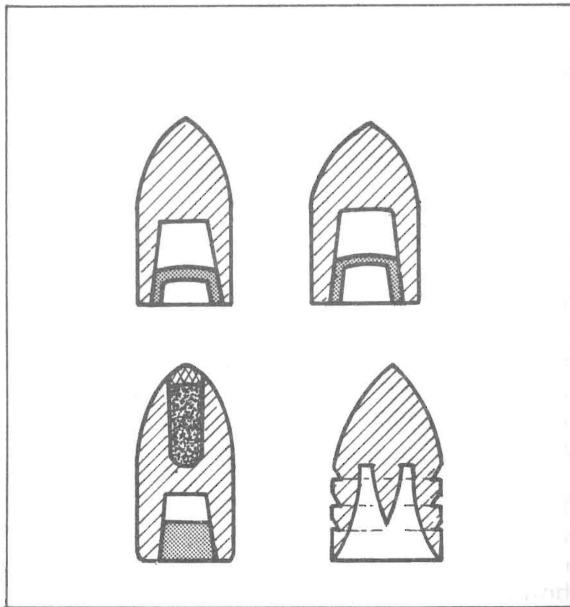


FIGURE 25 — Variations of the famed Minie ball (or bullet). The British Pritchett bullet (top) used iron (left) and wood plugs at the base to aid expansion. The British Metford bullet (bottom left) had a cavity which was filled with a mixture of sublimated sulphur and chlorate of potash, which exploded on impact. The French version of the Minie is shown at bottom right.

patch is too thick or the diameter of the ball is too large. Remember, a patch must always be lubricated. The old-timers used spit. In keeping with progress (and in the interest of decorum) you might wish to use a commercial patch lubricant or Crisco. Minie projectiles and round balls, in the size for your rifle and bullet and ball casting molds of appropriate size, are available from the various supply houses.

The Barrel Exterior

Most percussion rifles have octagonal barrels. More often than not the flats and edges will be badly nicked and marred. Here, you are faced with the common collector's dilemma of whether to beautify the beast (and maybe reduce its value) or leave the tube as is and wince every time you look at it. In many cases, and unless the gun is extremely rare, removing the blemes will improve the gun's value right along with its appearance. Octagonal and hexagonal barrels can be smoothed up on a milling machine. If you don't have one, plenty of elbow grease and draw filing, followed by light polishing with abrasive cloth, will do the job just as well. Old rifles customarily had a near-matte finish. A glistening high-polish job is as out of place

as make-up in a nunnery. When you reblue the gun, be sure to use a process that won't dissolve the solder bonds.

Check for loose and/or missing ramrod thimbles which should be resoldered and/or replaced. If the ramrod is missing, you can either order a replacement from a supply house or make your own, as has been previously explained.

Sometimes, the front or rear sight may be missing, broken, or badly bent. Replacements are easily made, or are usually available from supply houses such as Dixie Gun Works. The rear sight is normally dovetailed into a slot just ahead of the lock; the front sight is a blade or post, notched and soldered or dove-tailed into place. Final sight adjustment (i.e., filing the V notch and/or top of the front blade) should be done at the range. Muzzleloading rifles are always zeroed for a specific charge, with the shooter holding higher or lower for heavier or lighter loadings. The sights are primitive by today's standards, but that's part of the fun (Figure 26).

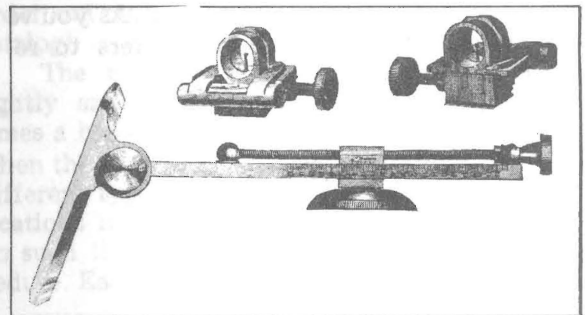


FIGURE 26 — Typical muzzleloader iron sights. The vernier, tang peep sight, and adjustable globe front sights represented the ultimate in 19th-century iron sights.

Percussion Rifle Locks and Triggers

There is a pronounced similarity among the locks used in percussion rifles, shotguns, and single-shot pistols; indeed the components are often interchangeable (Figure 27). Therefore, the remarks made here concerning percussion shotguns also apply to percussion rifles. In addition, there are only minor differences (if any) between locks used in percussion and flintlock arms, except for the external appurtenances (Figure 28).

Most percussion rifles were fitted with single triggers, a few with the double-set variety. The former were quite simple, and judicious honing of rounded or too-deeply notched sears will usually correct any problems in let-off or pull weight. Missing parts or those worn or broken beyond repair can be



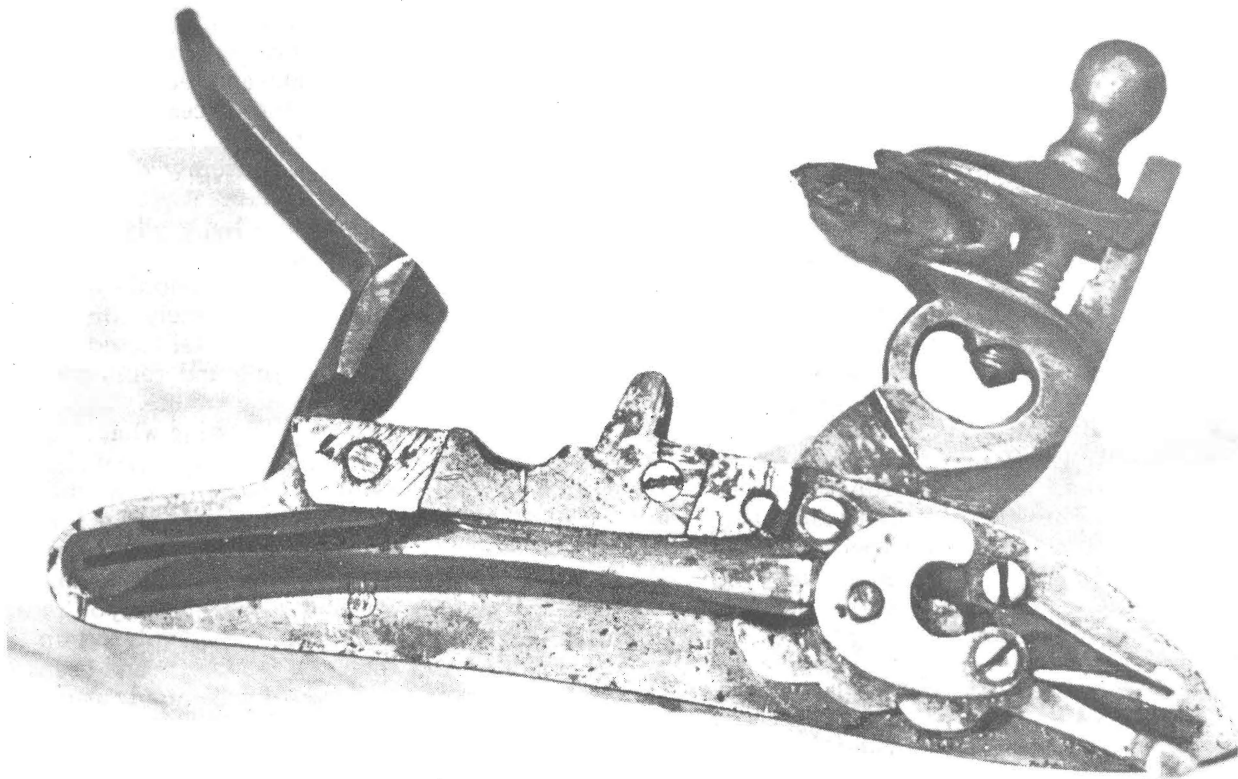


FIGURE 27 — Lock from a flintlock pistol. Internally, it's quite similar to percussion sidelocks. (Courtesy Hobby Gunsmithing)

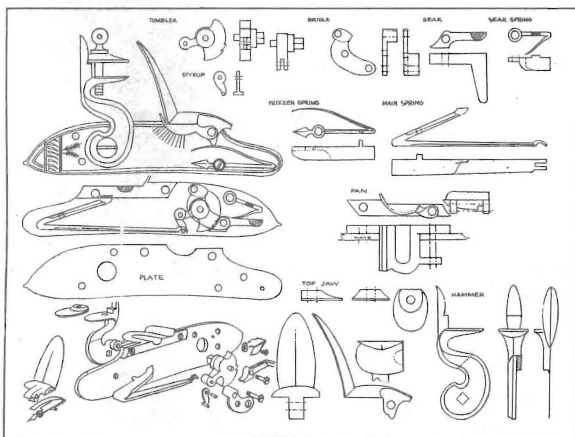


FIGURE 28 — Diagram of the "stirrup type" lock mechanism used in the better-grade flintlock Kentucky rifles of the 1770 period. (Courtesy Dixie Gun Works)

made from bar stock. When you have the original part for a pattern, the job is relatively easy. If a part is missing, the shape can sometimes be figured out by common sense, guesswork, and a bit of luck. Otherwise, write the various suppliers and perhaps the NRA and the various blackpowder publications for help.

Guns with set triggers were usually treated with more respect and used by more

sophisticated shooters, judging from the usual good condition of these mechanisms. They are usually quite simple, well-made, and require only cleaning and oiling to function properly (Figure 29). If the rear trigger won't hold the "set" (readying the front trigger for firing), a small adjustment screw located between the two triggers may be broken, missing, or improperly adjusted. Drilling and tapping for a slightly larger screw may be necessary.

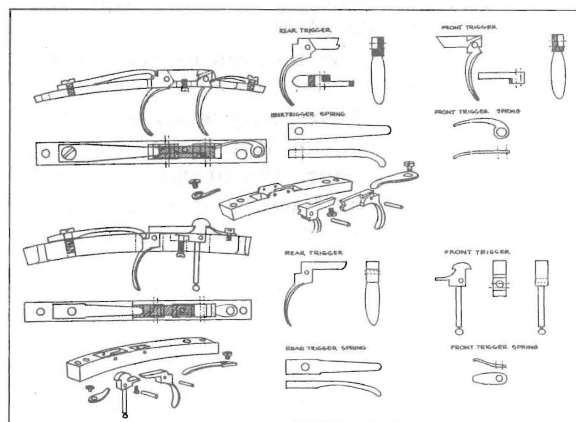


FIGURE 29 — Diagrams of two types of set triggers used in Kentucky rifles and in later percussion arms. (Courtesy Dixie Gun Works)

If the adjustment screw isn't the problem, check the sears for wear and breakage. Honing or parts replacement may be indicated. The fit (or lack of it) of the crosspins in their anchor points may also be the problem, and extruding metal into the oversize holes with a cold chisel the solution.

Restoration

The question of whether or not to refinish or replace the badly worn or marred stock of a percussion rifle has the same answer as when raised for percussion double shotguns. Unless the gun is exceedingly rare, a good oil finish or restocking will usually improve the arm's value. Many muzzleloading rifles have ornate and decorative metal fittings on the stock called "furniture." Some are functional, like the patch box. These fittings are usually made of brass, and sometimes (on expensive or presentation guns) of silver. If a piece of the furniture is missing, an entirely new figure may be cut from sheet brass for replacement. An ugly gouge or dent in the wood can sometimes be covered with a decorative eagle, deer's head, boar, etc. cut from sheet brass and inletted into the wood. About the only mechanical thing that can go wrong with the furniture is the spring in the patch box which may require replacement, cleaning, or stretching. Old furniture is usually covered with verdigris, which can be removed with a commercial brass cleaner. There's something about century-old furniture softly gleaming like new, that has made many a die-hard magnum nut trade in his cannon on a rifle from yesteryear!

PERCUSSION PISTOLS

Percussion pistols, like those of the "dueling" and horse pistol genre, are actually miniature percussion rifles from the standpoint of design and function. Much that has already been said about percussion rifles applies equally to the toploading pistols. The locks, stocks, and barrels are virtually identical. An exception sometimes exists in the method of attaching the ramrod to the gun. Such thimbles have often seen hard use and are badly worn or broken. About the only solution is to make replacement parts, working from the originals, from drawings available from NRA or other publications, or by copying the parts from a borrowed and similar gun.

An example of this type of pistol, the U. S. Model 1842, and disassembly instructions, appear in Gun Shop 11.

PERCUSSION REVOLVERS

Original percussion revolvers are about as rare as a bankrupt Arab and as expensive as a barrel of honest silver dollars. If you get your

hands on one of these, you better ask yourself if you're *really* qualified to attempt the restoration. If the answer is maybe, maybe you had better set it aside for a while and let it grow in value, while you grow the necessary skills through practice on lesser guns.

Some models can be severely damaged just by taking them apart incorrectly or in the wrong sequence. Parts are often available (at high price) from collectors specializing in this type of antique. Generally, you should leave the finish as is, unless it's completely gone or some dummy in the past has nickel-plated the gun. By removing the plating and rebluing, you can often increase the gun's value.

Here, more than ever, knowing what you shouldn't do in the way of restoration is of paramount importance. Check around, talk with knowledgeable collectors, even fire off a few letters to publications in the field. Only when you're certain of what you can do without impairing the gun's value, and certain that you're capable of doing the work, should you roll up your sleeves and approach the task — and then with the care and patience of a diamond cutter.

In Gun Shop 11 you'll find disassembly instructions for the Colt Model 1852 Navy

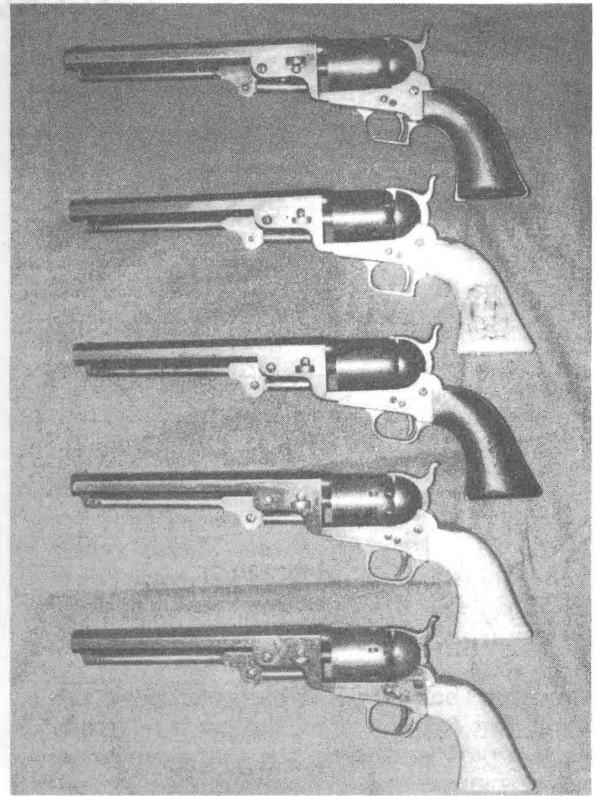


FIGURE 30 — Authentic Navy Model Colts, courtesy of Albert Watson III. The top four are factory models. At the bottom is a factory-engraved fourth model.



Revolver (Figure 30) which apply to the original and, basically, to most replicas.

Before going on, please do Programmed

Exercise 5. Make sure you write your answers on a separate sheet of paper before looking at the answers on the page specified.

**PROGRAMMED
EXERCISE "**

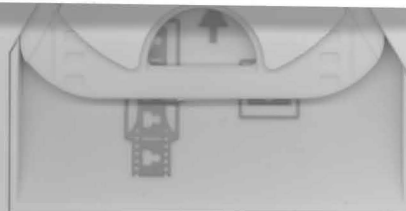
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1. On most percussion rifles, the nipple is threaded into: (a) the barrel. (b) the drum. (c) a rod. (d) a flat.
2. "Freshing out" means: (a) dismantling and completely cleaning a gun. (b) cutting the bore and grooves to a larger size. (c) resetting the alignment of all screws. (d) shortening and filing the barrel to the correct oversize bore diameter.
3. When should you fresh out a badly worn bore? SHOT OUT
4. You are determining the caliber of balls to use in an old percussion gun. You have measured the groove

diameter. It is .44. On the basis of the patch formula, what caliber of balls would you use? (a) .42. (b) .43. (c) .44. (d) .45.

5. What must you always do to a patch before loading? LUBE
6. In refinishing an old rifle, which of the following finishes should you try for? (a) high-gloss. (b) medium-gloss. (c) semi-matte. (d) flat.
7. Does a percussion revolver have any collector's value? YES
8. You've taken in a percussion revolver with a nickel-plated barrel. Should you refinish it? YES

Answers on Page 22



ANSWERS

5

1. B.
2. B.
3. When the value of the gun warrants it.
4. B.
5. Lubricate it.
6. C.
7. Yes.
8. Only if you're highly experienced.





N2513-1

EXAMINATION FOR STUDY UNIT 13

When you have finished this Study Unit, complete the examination, then:

1. transfer your answers to an EXAMINATION ANSWER SHEET, and
2. mail your EXAMINATION ANSWER SHEET to the Education Service Center for grading.

KEEP THIS ORIGINAL EXAMINATION in your files. **MAIL ONLY YOUR ANSWER SHEET** for grading.

I. **MULTIPLE CHOICE QUESTIONS.** Select the answer which best completes the statement or answers the question. Write its letter (a, b, c, or d) in the blank to the right of the question. (3 points each)

1. Before offering a used gun (not a collector's item) for resale, which of the following should you do? (a) stock refinishing. (b) checkering. (c) rebluing. (d) minor clean-up and touch-up. D
2. In selling ordinary used guns, the basic guideline to profits is: (a) rapid turnover. (b) selling only completely rebuilt stock. (c) offering generous trade-in allowances. (d) investing time at your workbench and setting higher prices. A
3. If your customer wants to buy an inexpensive new gun and offers you a trade-in that is unsuitable for local shooting conditions, your best course of action is to: (a) make him an offer on his gun that you know he will refuse. (b) make a generous trade in offer, then try to steer him into buying a higher-priced new gun. (c) offer to take his old gun on consignment. (d) take his trade-in, but increase the price of your gun. C
4. Your most current source for the going rate on a given gun would be: (a) the manufacturer's list price for the gun. (b) the *Red Book* of gun values. (c) gun bulletins and catalogs. (d) a recent trade publication such as "*Shotgun News*" or "*Gun Week*." D
5. Which of the following is *not* a factor in determining the value of a custom-built rifle? (a) appearance and workmanship. (b) type of action and barrel. (c) caliber. (d) maker's cost. D
6. To establish the retail value of a custom-built gun, you would mark up the replacement cost by: (a) 10%. (b) 15%. (c) 25%. (d) 35%. C
7. A trade-in allowance should be based on a realistic retail price less at least: (a) 15%. (b) 25%. (c) 35%. (d) 50%. B
8. What's the best way to deal with any good custom sporter brought to you? (a) take it on consignment. (b) buy it outright. (c) offer a generous trade allowance. (d) make a minimal trade offer. A
9. The retail price of a used gun is usually what percent of the retail price for a comparable new model? (a) 25%. (b) 35%. (c) 50% to 60%. (d) 80% less your cost of repairs. C



10. On outright purchase (no trade) of a popular used gun in good condition, you should offer the seller what percent of your planned retail figure? (a) 40% to 50%. (b) 50% to 60%. (c) 60% to 70%. (d) 70% to 80%. B
11. On an outright purchase, if the gun needs a fairly simple repair you would offer the seller what percent of your planned retail price less part/replacement costs? (a) 30%. (b) 40%. (c) 50%. (d) 60%. C
12. In checking headspace, if you can close the bolt with light pressure on a .008" shim, the headspace is: (a) just right. (b) a little too much, but will remain stable. (c) a marginal problem, and will need repair soon. (d) dangerous. D
13. Trigger pull weight of less than how many pounds is dangerous? (a) two pounds. (b) three pounds. (c) three and one-half pounds. (d) four pounds. B
14. Which of the following is *not* a proper test for a too light trigger pull? (Each test is done with the safety on and then with the safety off.) (a) tap the butt on the floor. (b) squeeze the trigger firmly. (c) twist the bolt and exert pressure on the hammer. (d) measure trigger free-play with a shim. D
15. An ordinary old double-barreled shotgun can be expected to sell for about what percent of the price of a new, economy-grade double? (a) 75%. (b) 50%. (c) 25%. (d) 15%. B
16. If a customer offers you a plain, vintage European shotgun, in which case should you consider purchasing it? (a) if it's made by a famous manufacturer. (b) if it's in good condition. (c) if it's made of fluid steel. (d) if it tests out with "low-base" shells. B
17. An old gun found "in situ" means a gun: (a) found to be defective. (b) used in a crime. (c) found in a historical or dramatic situation. (d) imported illegally. C
18. Which of the following pre-1898 military arms would have little collectors' value? (a) Ward-Burton. (b) Mauser '93. (c) Trapdoor Springfield. (d) Hotchkiss. B
19. What's the average top price for common-grade doubles in excellent condition? (a) \$50. (b) \$75. (c) \$100. (d) \$125. C
20. The best guide to the value of an old (1800's) shotgun is: (a) fireability. (b) brand name. (c) workmanship and material. (d) parts interchangeability. C
21. When unloading an antique double, your first step is to: (a) use a brass worm. (b) use a steel worm. (c) cock the hammer. (d) deaden the powder. D
22. To deaden the powder in a loaded old shotgun, which of the following would you do? (a) shoot the gun to clear it. (b) cock the hammer and squirt in water with a hypodermic needle. (c) run the ramrod down the bore. (d) clean the bore with a damp cotton swab attached to a dowel. B
23. In disassembling an old shotgun you find the barrels are sealed to the forearm and patent breech by ancient grime. How can you best break the age bond? (a) strike the barrels gently against the edge of your workbench. (b) tap along the barrels with a rawhide hammer. (c) pour penetrating oil along the seal and wait five minutes to remove. (d) remove the barrel wedges. B



24. With what is the patent breech affixed to the forearm on an old shotgun? (a) bands. (b) screws. (c) wedges. (d) hooks. C
25. Original percussion revolvers are: (a) rare and valuable. (b) good subjects for practicing restoration. (c) impossible to get replacement parts for. (d) almost always nickel-plated. A
26. In what element does a percussion pistol sometimes have a design different from that of percussion rifles? (a) lock plate. (b) thimble. (c) grip. (d) barrel. B
27. What can you use to best illuminate the interior of a bore when the nipples are still in? (a) a long stemmed wooden match inserted in the bore. (b) a mirror on a dowel dropped in the bore. (c) sunlight reflected from a shiny metal backdrop. (d) a pinhead spotlight. B
28. You've just cleaned the bore and polished out pits in an old percussion gun. Powder residue remains in the pits. What should you do about it? (a) nothing. (b) run rust solvent through the bore and repolish. (c) attach fine steel wool to a dowel and ream out the powder. (d) suction the powder out gently with a vacuum tool. A
29. A percussion double has a muzzle too badly damaged to be repaired. What do you do? (a) give up on the gun; it's valueless. (b) cut off the damaged part. (c) replace the barrel. (d) seal the barrels and sell it as a display piece. B
30. You inspect the ribs which hold the barrels together and find a loose short section at one end. What should you do? (a) retire the gun. (b) tighten the rib grip with pliers. (c) solder it into place. (d) fit a small wedge between the barrel and the rib. C
31. You check the area where the barrels adjoin the ribs and find excessively heavy rust. What should you do? (a) retire the gun. (b) swab with rust remover. (c) clean off as much rust as possible with emery cloth. (d) clean with a burnishing wheel. A
32. If you can't identify an old gun in any standard way, you can probably get an identification from: (a) "Shotgun News." (b) Brownell's. (c) Gun Trader's Guide. (d) National Rifle Association. D
33. A beaten up gun found "in situ," should be: (a) completely restored. (b) rebarreled. (c) left as is. (d) fired to determine if operational. C

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