INTRODUCING – THE GUN PRO

WHAT THIS COURSE IS ALL ABOUT

There's a *right time* for everything —
And the time is right for *you*
To start your career as a gun pro!

To hear some gloomy prognosticators, you'd think the only unexplored frontiers still left were somewhere in outer space. Well, the day may come when gun pros will specialize in laser ray rifles and atomic pistols, but right now there are opportunities aplenty on Planet Earth — for the man desiring a fascinating and rewarding career in firearms.

Gun sales are at an all-time high and, according to a leading sporting goods association, have increased every year for the past five years.

This sales upsurge is largely due to two factors: (1) the "forbidden fruit" syndrome invoked by restrictive gun legislation, and (2) shorter work weeks (and hours), affording more leisure time for hunting, plinking, and target shooting. To a lesser extent, our burgeoning population and expanding cities have created a new appreciation for the "great outdoors" and related activities.

On a less altruistic level, honest citizens, concerned with the rising crime rate, are purchasing more firearms, particularly handguns, for personal, home, and business protection.

Firearms: One of Our Fastest Growing Industries

At this writing nearly all major arms manufacturers are oversold. Remington and Sako can, reportedly, only meet an estimated 60% of dealer product demand. Leading handguns such as Colt and Smith & Wesson are usually available on back order only, with a wait of three or four months commonplace. Unquestionably, America is having a tremendous "love affair" with firearms.

Who is going to service these millions of rifles, shotguns, and handguns now in the hands of U.S. shooters? Sooner or later they are going to need the attention of skilled repairmen. In nearly all communities, established gunsmiths are swamped, with a simple repair job often backlogged a month or more. Want work done just before hunting season? Forget it.

FIGURE 1 — More leisure time for hunting is one of the reasons that gun sales are at an all-time high. (Photo courtesy Wildlife in North Carolina)

Yes, qualified gun repairmen are needed *now*. The demand is bound to become even more crucial in the years ahead as now-new and near-new weapons start wearing out. This is a big reason your Gun Pro Course came into being.

A Typical Example of the Gunsmith Shortage

Consider the plight of Alpine Reloading Shop in Reno, Nevada. Operated by two gun pros, Wayne Stevenson and Harold Schlapia, its inventory was increased from $7,500 cost to over $90,000 cost in just two and a half

years. Larger quarters were needed, so they put up a building complete with room for a resident gunsmith. *What* gunsmith? As Harold lamented, "We can't find one. Anywhere. There are only two or three good 'smiths in town and they're not about to come in with us. They hardly leave the bench long enough to answer their phone."

The Alpine owners, while quite capable of doing minor repairs, adjustments, scope installations, etc., are simply too busy advising and selling customers to devote much time to gun work. And they make more money *selling* guns than *fixing* them.

The need for qualified sales/advisory people is every bit as great as the need for repairmen. For this reason your Gun Pro Course deals extensively with the knowledge you must possess to "win customers and influence sales."

FIGURE 2 — "A little knowledge is a dangerous thing," especially in the guns and ammo field. And with more people than ever before buying guns and ammo today, the services of knowledgeable gun pros are sorely needed.

Gun Pros are Counselors First, Salesmen Second

The days when a gun buyer walked into the county store and plunked down 15 or 20 bucks for a "thutty-thutty" Winchester or .22 Stevens Favorite (those two about ran the gamut for large and small game) went out before the Tin Lizzie.

Today's buyer is faced with a bewildering array of guns and calibers, ammo and accessories, iron sights, scopes, and mounts. He needs *and deserves* expert advice and counseling. Choosing reloading equipment and components can be even more confusing. This industry has grown to a multi-million-dollar giant in just a few years. Almost all serious shooters have turned to the loading bench for fun, economy, and the satisfaction that comes with tailoring optimum power/accuracy loads.

With few exceptions, the only retail outlets that do a good job of advising and selling are those staffed or owned by gun pros — usually custom gun and reloading shops. These establishments, while often tiny, rapidly build a following and sales volume all out of proportion to store size. They prove that when you treat a buyer *right*, recommending and selling what is best for him (even though it means passing up an opportunity to get rid of a slow-moving gun), success is nearly axiomatic. Get that customer into reloading and he can bring you hundreds of dollars in sales annually. Reloaders are both repeat buyers and "missionaries."

FIGURE 3 — Today's gun buyer is faced with a bewildering array of guns and calibers. He needs the services of a gun pro.

In short, if you create a happy customer, you'll soon be "talking guns" with, and selling, most of his hunting buddies. The circle is ever-widening.

Chain Stores and Large Sporting Goods Stores Especially Need Gun Pros

Contrast the above "gun pro/customer"

relationship with the sales "policies" of large discount stores that inventory many guns and usually a large supply of reloading equipment and components. These gun departments are often "mausoleum-quiet" — empty of customers *or* sales people. They sell quite a few rifles and shotguns before hunting season and at Christmas, but that's about it. If a prospective buyer doesn't *know* what he wants, the answers to his questions are about as productive as asking Smokey the Bear directions to the nearest match factory. Here's a typical response from a salesgirl concerning a "test" loading press question we recently asked: "Sorry, Sir, but I don't know how that thing-amajig works. My regular job is in the candy department."

Even though discount stores sell for less, few serious shooters patronize them. They usually stick with their gun pros who have the answers, even though the merchandise cost is a bit higher. Of course, when a discount gun department is staffed by an expert, it's a different story. The combination of gun pro counseling and low prices is nearly irresistible!

Stores are Aware of the Problem

The manager of a large Western sporting goods discount store recently summed up the situation: "We sell a lot of the standard stuff — Remingtons and Winchesters — to casual shooters. But our large inventory of RCBS loading pressures and other accessories hardly moves. Our sales people don't know enough to attract sophisticated shooters or counsel anyone interested in taking up reloading. Gun pro sales advisors? Where do you find them?"

FIGURE 4 — Here are some basic tools that enthusiasts will purchase when they get into reloading. As a gun pro, it is possible for you to sell (and make a profit on) every one of these items. (Photo courtesy RCBS)

Confirming this picture is the following letter excerpted from the "Letter to the Editor" column in a recent issue of the *American Firearms Industry* trade magazine:

> "I am national sales manager for one of the major manufacturers in the reloading and powder market. I travel the whole country visiting [sporting goods] dealers. The lack of knowledge as to reloading and powder is a continuing source of amazement. In addition, most of them seem unwilling to learn."

As you can see, employment opportunities seem almost unlimited at large sporting goods stores and chain outlets where they have the merchandise, but no one to sell it intelligently. You, as a gun pro graduate with the training to do the job in a very uncrowded profession, may well find yourself in the position of choosing from many possible opportunities. You're in on the ground floor of a growing, rapidly expanding industry!

Just What is a Gun Pro?

What is a gun pro? Essentially, he's a "gun nut" who has graduated — whose interest in firearms is backed by solid knowledge. He has progressed beyond the hobby stage and is able to speak authoritatively on almost anything concerning guns, from basic design to merchandising practices.

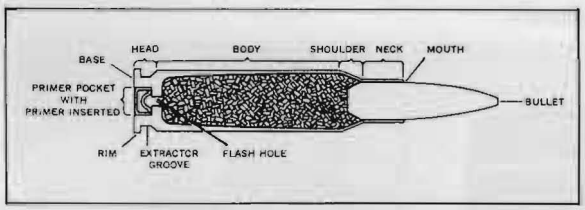

FIGURE 5 — Reloading, like golf, tennis, fishing, or boating, has its own language. We suggest that you spend just a few minutes daily familiarizing yourself with the terms in your Let's Talk Guns *glossary. Then, when you get to the reloading section of the Course, you will really be ready to gain full understanding. (Schematic courtesy RCBS)*

He probably has a specialty (most do) such as gun repair, stock customizing, perhaps custom ammo-making for local shooters and police. But aside from his specific interests, he is *knowledgeable* in ballistics, firearms design, reloading, merchandising, scope and sight installation, public relations and advertising — anything and everything to do with guns. He possesses the expertise in a given field, a field that has high interest and enjoyment for him.

Where can you get gun pro training? To garner only part of the information in this course, you'd probably have to attend a military ballistics school; devote months to resident gunsmith training; read every gun publication and trade manual published in the past five years to extract pertinent data; then apprentice yourself for a year or so at a custom gun shop to learn the rest of the answers. Or some of them.

The authors of your course have already done this for you. You benefit from their experience. And, being gun pros themselves, they know what *you* should and must know to get started.

Few fields offer so many different ways in which your basic interest can produce a fine income. Your specific talents will undoubtedly lead to specialization. You may, for example, have an affinity for tools and metalworking; or perhaps you have a feel for wood and will excel at stock finishing and checkering. If you have a warm, outgoing personality, perhaps you are best suited for customer counseling.

Regardless of Your Specialty, You Require a Broad Background

Whichever specialty you elect to follow, to practice and perfect, remember that you still require in-depth general knowledge. A good gun repairman doesn't *have* to know ballistics, but he should; a good sales counselor doesn't *have* to know how to mount telescopic sights or install a recoil pad, but he should.

FIGURE 6 — Most gun pros have a specialty, such as stock customizing, custom ammo making, etc. But they are able to advise and counsel on most aspects of gun repair, and may take in and send out jobs they can't handle to another specialist.

In the gun field there is considerable overlapping of "specialties." Freeboring a chamber to increase velocity without raising pressure involves knowing how to use a reamer and depth gauge — which is in the province of the gunsmith or repairman. Yet it is equally important for you to know the ballistics involved. One diameter of freebore is equal to how much additional case capacity? What about two diameters? How many grains of what type powder should be used to gain what velocity at what pressure level? Very soon you'll have your chance to become adept at ballistics *and* the use of reamers. Versatility is the hallmark of the gun pro.

Your course enables you to become "master" of as many specialties as you wish, "jack" of all the others. It's all there in the lessons that follow.

Now let's get into some "previews" of the experiences you have coming up. Educational? Of course. But you'll probably soon think of them as "adventures."

INTRODUCTION TO GUN REPAIR

A substantial part of this course, "The Gun Shop," is devoted to gun repair, adjustments, and customizing, with schematic drawings and detailed instructions for modern sporting and military rifles, shotguns, and handguns.

The word "gunsmith" is a misnomer. Originally the term referred to a "maker of guns," when parts for an individual piece were tediously hammered, filed, and forged (smithed), and barrels were rifled by hand. The modern "gunsmith" seldom *makes* a gun; he's basically in the business of installing sights and scope mounts; replacing worn or broken parts; adjusting or installing trigger assemblies; correcting head space; extracting burst "overloaded" brass; rechoking shotguns and installing variable chokes; reassembling dismantled guns (that the owners couldn't get back together); and occasionally blueing an in-the-white barrel or beat-up "vet" deserving new cosmetics.

The competent gunsmith or repairman is also adept at "accurizing" rifles and pistols. You'll learn how easy it often is to make factory-new arms, and even venerable military rifles, reduce group size from 4 inches at 100 yards to that coveted 1" MOA. This may be accomplished by no more than adjusting or honing the trigger, tightening down the sights, checking and correcting the bedding, and, in the case of old guns, giving the bore a thorough cleaning. The final step, a custom handload brewed for a particular rifle, completes the "accurizing" — often producing near-match accuracy.

The man who elects to specialize in the metalworking aspects of firearms is not necessarily good at working with wood. There are exceptions, of course, but generally gunsmiths concentrate on "specialty" areas and refer other work out to other specialists.

A gunsmith, therefore, may seldom have much to do with stocks other than cutting for installation of recoil pads and buttplates, and rebedding barrels (which isn't woodworking in the usual sense).

This "referral" arrangement provides one-stop service for the customer and a tidy commission for the gunsmith.

The truth is, and any honest gunsmith will admit it, about 85% to 90% of all jobs require only a honing stone, special screwdrivers, B-square jigs permitting drilling (and tapping) with an inexpensive hand drill, and a padded vise. A drill press, blueing tanks, and perhaps a lathe for chambering and working new barrels, while desirable, are not necessary for the beginner and can be added later as your knowledge and abilities increase.

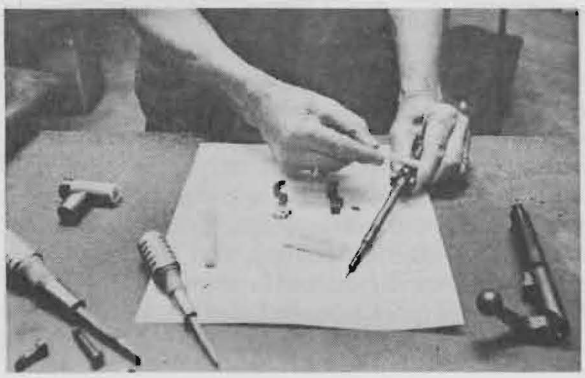

FIGURE 7 — A large percentage of the jobs of the modern gunsmith requires only a honing stone and other simple tools.

Most gun repairs can be accomplished with tools costing less than $75, working from your garage or basement bench. We show you exactly what is needed for each job and how to do it — step by step.

Even though you may consider yourself less than a mechanical marvel, you'll find that many simple adjustments and repairs are well within your capabilities. The first thing you're going to need (if you don't already have one) is a workbench. Therefore, our first "Gun Shop" project deals with this all-important accessory.

BEGINNING BLUEING

As a gun pro, you will be advising customers about the care of their firearms, more specifically, about the quality of its metal finish. Some shooters prefer a high-luster, shiny black or blue finish, which depends on polishing the steel to a mirror-like sheen. This will call for some knowledge of polishing. Other, usually more sophisticated gun owners, want a non-reflective, velvet finish. This will involve some knowledge of blueing or reblueing techniques.

If "blueing" brings to mind an expensive shop set-up and complicated processes that make you want to hide under the nearest loading bench. . . forget it, and rest easy. The men who experimented and invented methods of blueing were not ivory towered genuises with expensive laboratory equipment, but practical men, like yourself. Expensive equipment was not available for blueing until relatively recent times in the history of the art.

You'll be learning how to blue guns *inexpensively* and professionally from *proven* methods, the result of trial-and-error experience. As a matter of fact, why don't we get into that right now as our "preview" of the blueing section which we will cover in depth later.

HOW TO BLUE GUNS

A soft, lustrous, blue-black patina, the hallmark of the superbly finished firearm, is easier to produce and requires less equipment, than you probably imagine!

Modern blueing set-ups, utilizing several tanks, burners, temperature control, etc., are nice to have but cost anywhere from $300 to $500, depending on whether you make, modify, scrounge, or buy the components. The only real justification for this kind of a cash outlay is volume. When you're called upon to color-refurbish maybe a dozen guns a week, then the cost of equipment which reduces blueing time to a minimum, is quickly amortized.

You can, however, get into blueing for a fraction of this amount and turn out deluxe, top-quality blueing jobs that will assuredly win the admiration and envy of friends and customers alike! Later in your Gun Pro Course, you'll learn *all* the blueing techniques, including the common black-oxide method, which requires rather elaborate and costly facilities.

To demonstrate how simple and inexpensive blueing *can* be, and to get you started immediately in one of the more profitable aspects of your new trade, we're presenting a preview of your comprehensive Shop Unit on Metal Refinishing (blueing). You're going to learn, right now, how to impart a satiny "Connoisseur's Finish" to any previously-blued firearm, and to new, in-the-white rifle hardware. What's more, you can do the job in a couple of hours and for only a few dollars in equipment and supplies! The secret? Old-time

"hot water" blueing — a process used on the fanciest, most expensive guns of a generation or so back, and still proudly preferred by some European manufacturers and by "carriage-trade" shops specializing in truly custom, rifle and double-gun blueing (Figure 8).

BASIC METHODS OF BLUEING

Before proceeding with the "step-by-steps," let's place "hot water" blueing in perspective. At this point you're probably confused about blueing in general. It figures. As a budding bluer you're faced with more ways to go than a green pup in a covey of quail. There is a bewildering array of methods and formulas; browning, blueing, and blackening techniques; hot and cold, fast and slow, old and new ways of getting the job done. Gun writers and closemouthed gunsmiths haven't done much to clear the smoke. Most of these gents would have you believe that blueing is only slightly less complicated than the latest IRS tax manual. Bunk! Let's sort out the facts.

There are only a few *basic* methods of blueing — plus an infinite number of variations. Over the years various inventive types have added a pinch of this or a drop of that — which changed the basics hardly a whit. We're not talking now about the various "cold" wipe-on creams and solutions which are essentially for touch-up work by the amateur; nor are we discussing plating or color case-hardening, which aren't "blueing" in any sense (Figure 9). Following are the best known *four basic* methods of blueing:

The "Browning" Process

All blueing is *controlled* rusting. The first blueing or "browning," dating back to the early 1700's, was just plain rust rubbed smooth. On a production basis, a stripped gun was doused with a salt water solution (the salt hastened rusting), then swathed in brine-soaked rags and placed in a box overnight. Next day, the newly-formed rust was wire-brushed off ("scratched" was the term), more salt water applied, and the gun placed back in the box for further rusting. This went on for weeks or months until the correct "plum brown" color was achieved. The metal was then bathed in oil to stop the oxidation (rusting), which at best represented a nice try.

Too often, "after-rust" kept nibbling away until the barrel resembled, in strength and appearance, the stove pipe in a weathered shanty. "Browning" took time and wasn't really the answer. Today the process is seldom used except when restoring antique guns (Figure 10).

The Cold "Acid-Blue" Process

About 100 years later gunsmiths and gun makers were still seeking an "elixir" that darkened gun metal, provided a handsome, durable finish, and inhibited after-rust. Finally, around 1820, someone got the bright idea of dumping a fistful of nails in a mixture of hydrochloric and nitric acids. Amid billowing fumes the nails disappeared, and the resulting brew (caustic as a housewife whose hubby just blew his paycheck) proved the answer. When

FIGURE 8 — Expensive custom sporters made before World War II and shortly thereafter, like the Mauser shown, were almost always blued by the "hot water" blueing process.

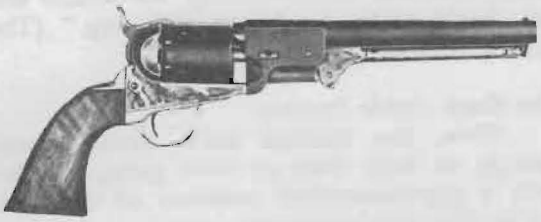

FIGURE 9 — Revolvers of Civil War vintage, like the Confederate M 1862, often had a color case-hardened frame; blueing was of the cold "acid-blue" variety.

applied to a gun, the metal darkened to a deep dark blue! The first "blueing" had arrived. It stopped after-rust, but like "browning," was slow as molasses running uphill in January. So a growing number of gun manufacturers looked around for a faster way to color metal (Figure 11).

"Hot Water" Blueing Process

It was no secret that *hot* steel rusted faster than cold steel. But, the "acid blueing" solution didn't work with heat. So, manufacturers and village smithy types embarked upon the great "Secret Formula" race for a concoction that was compatible with *heat.*

FIGURE 10 — Most flintlock guns were "browned"; newer versions were acid cold-blued.

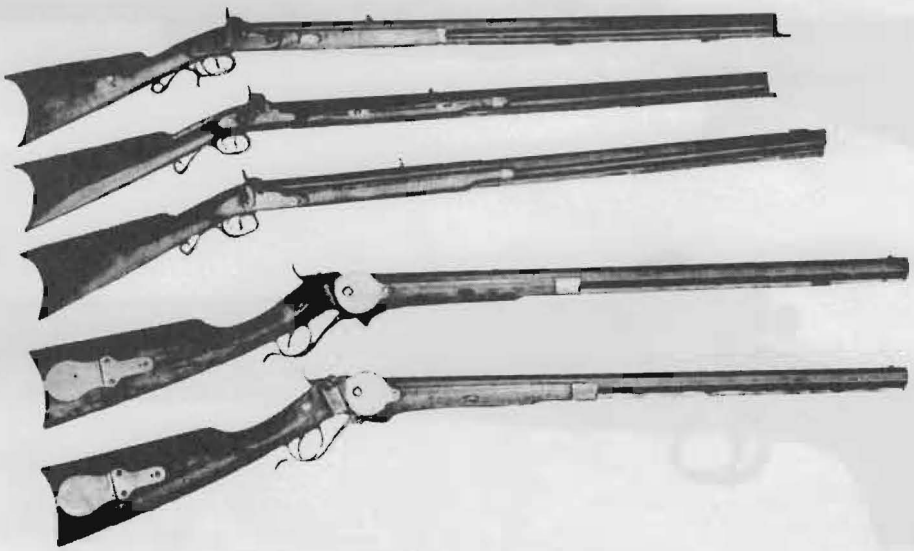

FIGURE 11 — The legendary Hawken (top three) and Sharps rifles, circa 1855-1960, were acid cold-blued.

Finally, in the late 1800's, the problem was solved. The new formula contained, basically, sodium and potassium nitrates, potassium chlorate, and bichloride of mercury, mixed in distilled water. It was essentially the same as the commercial "hot water" blueing preparations available today (Figure 12).

For the first time, heat and a blueing tank were required. But, unlike the later black-oxide set-ups, the tank wasn't used to contain a caustic blueing solution. It merely held the gun parts which were heated by boiling water so the blueing solution, when applied to the metal outside the tank, would "take."

"Hot water" blueing was used successfully for years to produce the soft, deep velvet finish that is still highly regarded by knowledgeable gun buffs today. It is as durable and long lasting, and at least as attractive, as black-oxiding. It was discontinued by modern professional gun shops only because the latter method proved about twice as fast for volume work. However, "hot water" blueing is still a must for side-stackers with soldered barrel-to-rib bonds and for most small blueing shops (Figure 13).

Soon, we'll show you how to master the art of "hot water" blueing. But first, let's briefly describe black-oxiding, the fourth and last *basic* method of gun "blueing." (The color produced is actually black!)

The Black Oxide Process

Here, the blueing tank, usually large enough to hold four or more guns, is filled with a super-saturated solution of commercial blueing salts (potassium nitrate and caustic soda), and heated to a high, extremely critical temperature — in the 285-300°F. range. The gun parts are suspended in this solution and, depending on steel hardness and composition, left in the tank for 30 to 90 minutes. Any non-ferrous parts, aluminum trigger guards, floor plates, soldered bonds, etc., must *not* be immersed or they disappear faster than a salmon egg in a trout hatchery!

No carding is required. After the desired color is reached, the parts are lifted out, rinsed in cold water, and immersed in an oil bath to halt the blackening process (Figure 14). The result is the familiar, shiny black sheen found on most new and reblued guns. Black-oxiding, because of high initial set-up cost, is economical only for volume blueing. You may eventually want to establish such a facility. Or, when you see what terrific results you get with "hot

FIGURE 12 — Springfield rifles, released as surplus after World War I, were often sporterized and reblued by the "hot water" process.

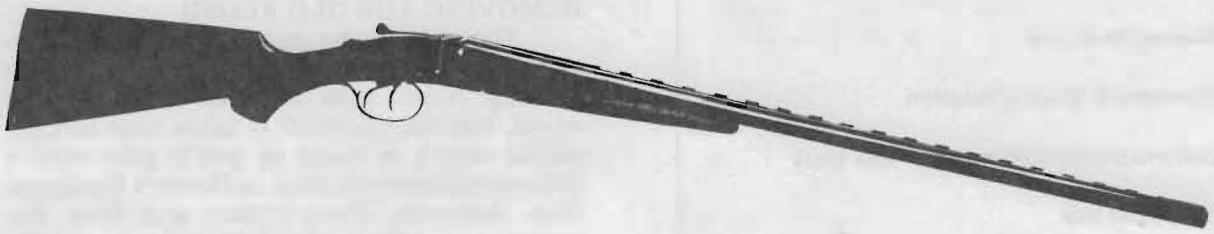

FIGURE 13 — Venerable side-stackers like the L.C. Smith have soldered tubes and must be "hot water" blued. (Black-oxiding separates barrels.)

water" blueing, you may want to stay with the process — producing undeniable custom-quality work, economically, and nearly as fast as with the widely-used black-oxide technique.

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

PROGRAMMED EXERCISE 1

1

1. Of the four basic blueing techniques discussed ("browning," cold "acid blueing," "hot water" blueing, and black oxiding), which one has a major "after-rust" problem?

2. The "caustic brew" of the cold "acid blueing" process was achieved by mixing hydrochloric acid, nitric acid and what else?

3. Black oxiding, although more expensive initially to set up than "hot water" blueing, may eventually be economical to you. Why?

4. The "hot water" blueing process is inexpensive and is highly recommended as your basic blueing technique. What results can you expect from carefully following instructions for blueing with this technique?

Answers on Page 11

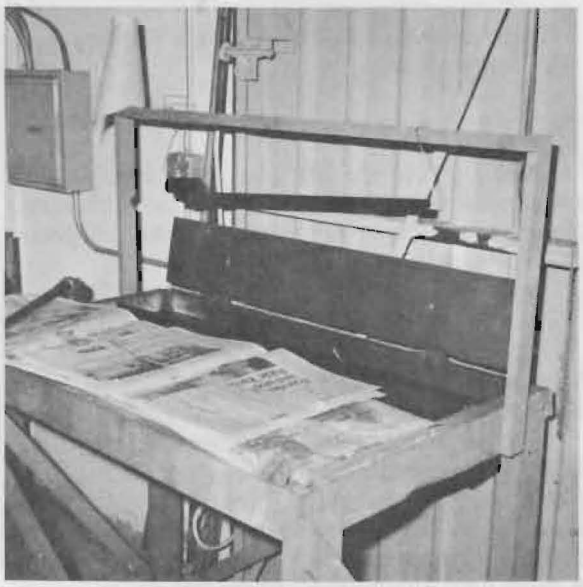

FIGURE 14 — In black-oxiding, the gun is dipped in oil to stop the blackening process, then placed on newspapers and wiped clean.

"TANKS FOR THE ARMORY"

About the only "expensive" item required for your "hot water" blueing shop (see Table 1), is *one* tank. (You could use *two*, but the extra tank isn't absolutely necessary.) To hold an average rifle or shotgun, the tank should be 36 to 40 inches long, with a width and depth of 6 to 7 inches. Such a tank is relatively small, and as it will not hold a strong caustic solution, it can be lightweight and of copper or galvanized steel. The seams, because of their proximity to heat, cannot be soldered. Otherwise, almost any suitable-size metal container will do. You might use a section of ordinary rain gutter with the end-caps brazed into place; a poultry feeder; or even a tray from a discarded room planter. Inexpensive tanks are available from Herter's and Brownell's (Figure 15), or you may wish to make your own or have one made at your local

Blueing Tank, one
Commercial Blueing Solution
Commercial Blueing Remover (see text)
TSP, small box
Distilled water, 3-5 gallons
Rubber Gloves
Steel Wool, 00 and 0000 grade
Sheet Abrasives, 200, 320-A, 400-A, 600-A, and Crocus Cloth

TABLE 1 — Above are the basic equipment and supplies required for "hot water" blueing. Other items are probably at hand in your house or workshop.

sheet metal shop. For handguns, a metal cake pan is just the ticket.

Other equipment and supplies required are either available at low cost, or are probably already at hand in your home or workshop. Now, let's get on with how you can produce a deep velvet "Connoisseur's Finish" on your own finish-worn firearms!

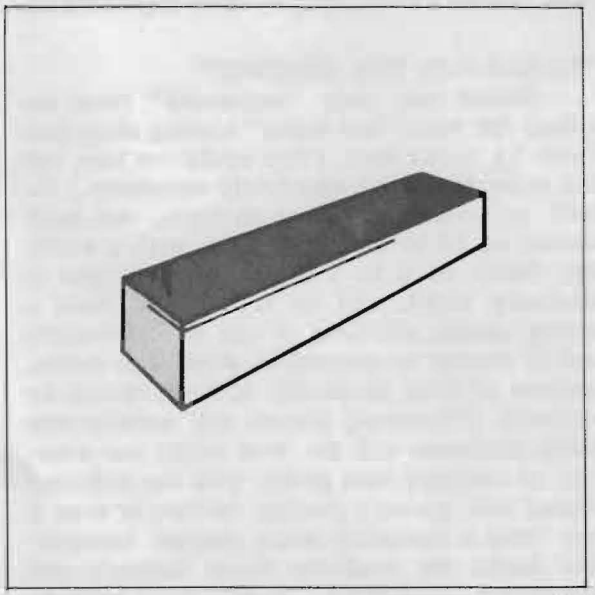

FIGURE 15 — Inexpensive blueing tanks, like this one from Brownell's (about 4-1/2 gallon capacity), hold one long firearm.

REMOVING THE OLD FINISH

The old blueing *must* be removed before applying the new. You can worry-off the existing finish with abrasives or a buffing wheel, but why bother? It takes time and the results aren't as good as you'll gain with a commercial remover such as Herter's European Blue Remover, Casey's Blue and Rust Remover, etc. (Figure 16). Or, you can easily make your own — a 50% solution of either commercial grade hydrochloric or muriatic acid and distilled water. The acids are available from any chemical supply house and some pharmacies, and cost very little. To prevent splatters, *always* pour the acid into the water and use a glass container. (It's always a good idea to wear safety goggles when fussing around with any acid.) Acid is strong stuff, so wear rubber or plastic gloves and work outside or in an open garage when mixing *and* applying the solution.

FIGURE 16

First, disassemble your gun, set aside any non-ferrous parts, and wipe off excess oil and grease. Use white gasoline and a good detergent to remove oil and grease, then rinse parts. Saturate a cotton wad about two inches square, and apply the acid solution or commercial remover to the old blueing with long, firm strokes (Figure 17). Treat one area, then let the fluid "work" for a couple of minutes before returning to that area for additional rubbing. Use Q-T swabs for reaching small, out-of-the-way areas and recesses.

In minutes the worn blueing will melt away, leaving a grayish film (Figure 18). Inspect the metal carefully, removing any old rust with fine steel wool. Then, rinse off the parts in warm tap water and dry them *thoroughly* and quickly. It's surpising how fast new rust will form, and you don't want rust. Not yet.

While stripping off the old blueing, you

FIGURE 17 — Commercial removers or your "homemade" solution, quickly strip off the old finish.

ANSWERS

1

1. "Browning." This process is only justified when restoring old and antique guns, which you may allow to "rust in peace."

2. A handful of nails — or clean scrap metal.

3. When you see what terrific results you get with the "hot water" blueing method, you may want to stay with the process — but, black oxiding is economically feasible when you do volume blueing.

4. If you followed instructions carefully and didn't abbreviate the polishing, boiling or heating periods, the quality of your blueing will rival that of the finest custom blueing shops! A "Connoisseur's Finish" is your aim when "hot water" blueing.

FIGURE 18 — The former blueing is replaced with a grayish film which is rinsed off with warm tap water.

have *also* "etched" the metal, providing the proper bonding surface for the new blueing to "take."

METAL POLISHING

Blueing doesn't cover or hide anything, and the world's best blueing job over poorly-prepared steel is about as appealing as heavy makeup on the lined face of an elderly dowager. If you're experienced with power equip-

ment, a buffing wheel makes metal polishing easy. If you're not experienced, do the work by hand. Don't chance rounding corners and flattening screws. Anyway, most reblue jobs require a minimum of polishing unless the gun was badly abused and marred. (Smoothing-up arms in this condition is covered later in your Course.)

You're going to need an assortment of abrasive cloths or papers — 200, 320-A, 400-A, 600-A, silicon carbide or aluminum oxide, plus crocus cloth, generally provide the "spread" required. Cut the abrasives into strips about 1-1/2 inches wide by the depth of the sheet. Mount your action or barrel in a padded vise and don't use too much pressure (get heavy-handed and you might collapse the part). Depending on metal condition, start with the coarsest abrasive you'll use — generally 200, but if the steel was originally well-polished, 320-A. Move the strip in a "shoeshine" motion, back and forth and around the metal (Figure 19). Then, using the same strip, move it lengthwise until you've polished out any cross-marks made by your first passes. Repeat this procedure, using progressively finer strips and finishing with crocus, until the metal is shiny bright and chrome-like in appearance (Figure 20).

Check the work frequently in good light, removing any remaining cross-marks, scratches, or dull spots. The metal must be uniformly smooth and shiny; any blemishes overlooked will stand out like a lighthouse beacon after the blueing is applied. Spend an extra 15 minutes polishing. Remember, you'll probably live with that blueing job for a long time!

DEGREASING

Before blueing, all parts must be *clean*. The faintest smudge of oil, even a fingerprint, will leave a light splotch that no amount of blueing will cover. You can use commercial solvents or white gasoline for degreasing, but the hazards are considerable. Also, some solvents leave residue which can really bollix-up the job. Your best bet is TSP (Tri-Sodium Phosphate) or Oakum, if you can find it, which are sold in hardware stores. (Brownell's Gunsmith Supplies sells these degreasers.) Use a cup of TSP, or one and a half cups of Oakum, to three gallons of water — which is about what you'll need for a small, one-gun tank.

"TO PLUG OR NOT TO PLUG, THAT IS THE QUESTION"

There are two ways to go in making handles for raising and lowering parts. If you wish to retain the pristine purity of your bore and keep it mirror bright, make plugs of wood dowels or clothespins, which are tapped securely into both ends of the bore. (Drive them in too lightly and the trapped air, expanding under heat, may shoot 'em out like mini-torpedoes!) The plugs, extending out two to three inches, also serve as handles around which you can loop wire for ease of barrel

FIGURE 19 — Polishing goes fast when you use a padded vise.

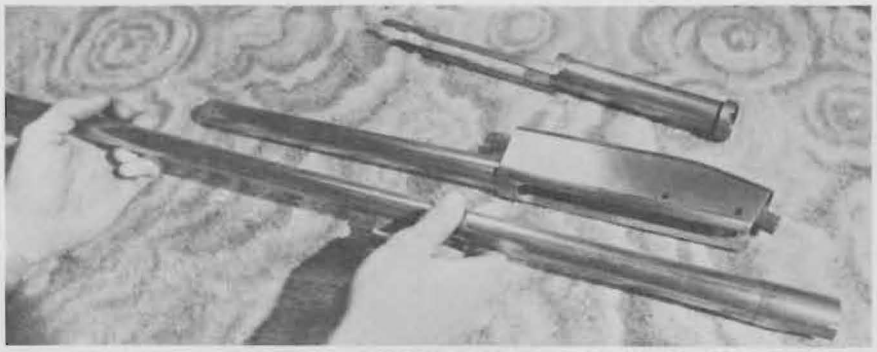

FIGURE 20 — Following polishing to a bright luster, the parts are ready for the degreasing tank.

manipulation.

The *easiest way* is to make "Z"-shaped handles, with the legs four to six inches long, of welding rod or wire (Figure 21), which you need anyway, for handling other parts. Smooth off the ends to prevent bore scratching. Without plugs the bore is, of course, left open. Later, when you start blueing, the solution will "bleed-off" the treated metal and into the tank water, producing a mild, diluted blueing solution that will lightly color the bore. This isn't harmful and the color will eventually "shoot-out" after continued use. But it's your decision; generally, rifles are left open; scatterguns are plugged.

There's no point in sealing the bore when degreasing, but if you have the wooden plug-handles you might as well use them during this operation, too.

Now, make two or three (depending on length of gun parts) "U"-shaped brackets of welding rod or heavy wire with flanges to hook over the sides of your tank of a size that positions parts about an inch above the bottom of tank.

"IF YOU CAN'T TAKE HEAT — STAY OUT OF THE KITCHEN"

Use the kitchen stove and you'll get plenty of heat — mainly from the lady of the house! For safety and domestic tranquility, set up your tank and stove on the garage or basement floor, making *sure* any flammable materials are out of the area (Figure 22). Position your "U"-brackets in the tank and pour in sufficient tap water to cover all parts (allow for evaporation). Add the TSP or Oakum and fire-up your stove.

A two, preferably three-burner camp stove, serves as a good heat source. Use one that is fueled with white gasoline, as the cost of three or four propane cylinders (which we *shouldn't* have used in illustrating this unit) runs the cost of the job sky high. When the solution reaches a boil, position the parts on the brackets, making *sure* there is ample room at all sides for the liquid to circulate. Let the parts boil a *full* 15 minutes.

Slip on clean gloves (from now on your bare hands must not touch the metal) and lift the parts, one at a time, from the tank (Figure 23). Rinse each part, in turn, in warm tap water; dry thoroughly and place the parts on clean rags or paper (not newsprint as the ink contains oils). Now, a second tank *would* come in handy. Assuming you're working with one tank, empty the degreasing solution and rinse the tank with tap water.

Incidentally, never place an aluminum or alloy trigger guard or other part in the TSP solution; it will remove the finish and pit the metal badly. Such parts should be left as is or

FIGURE 21 — Z-shaped handles are necessary for parts handling, even if you use plug handles for the barrel.

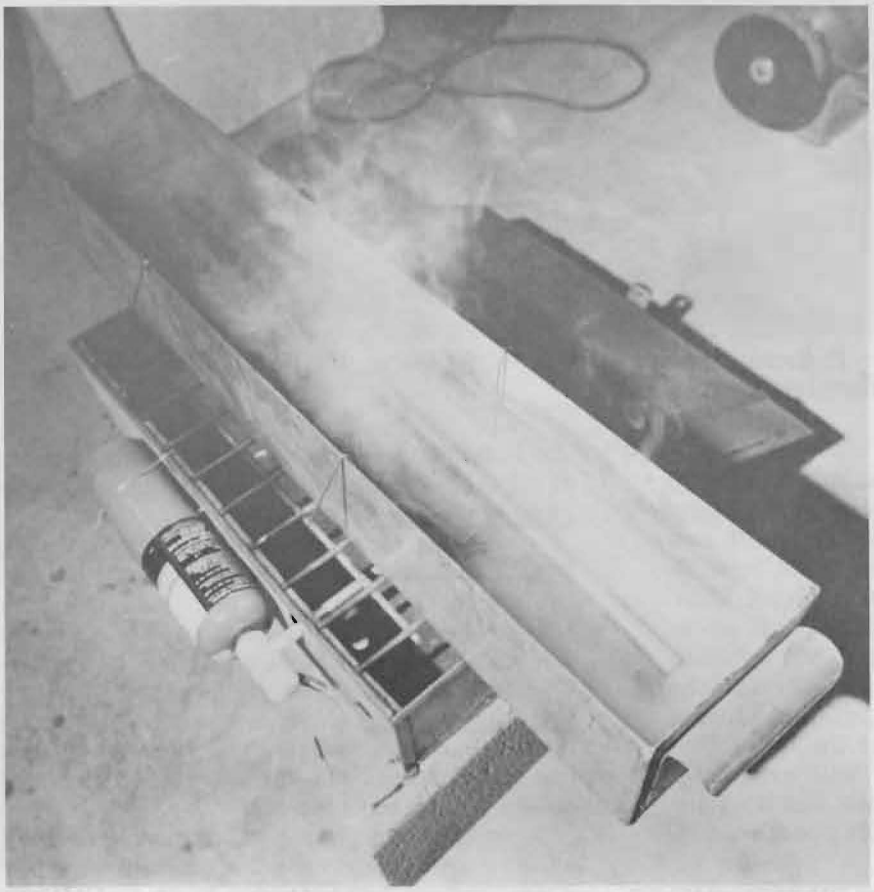

FIGURE 22 — A garage floor set-up works fine. Note U-brackets suspending parts in degreasing solution.

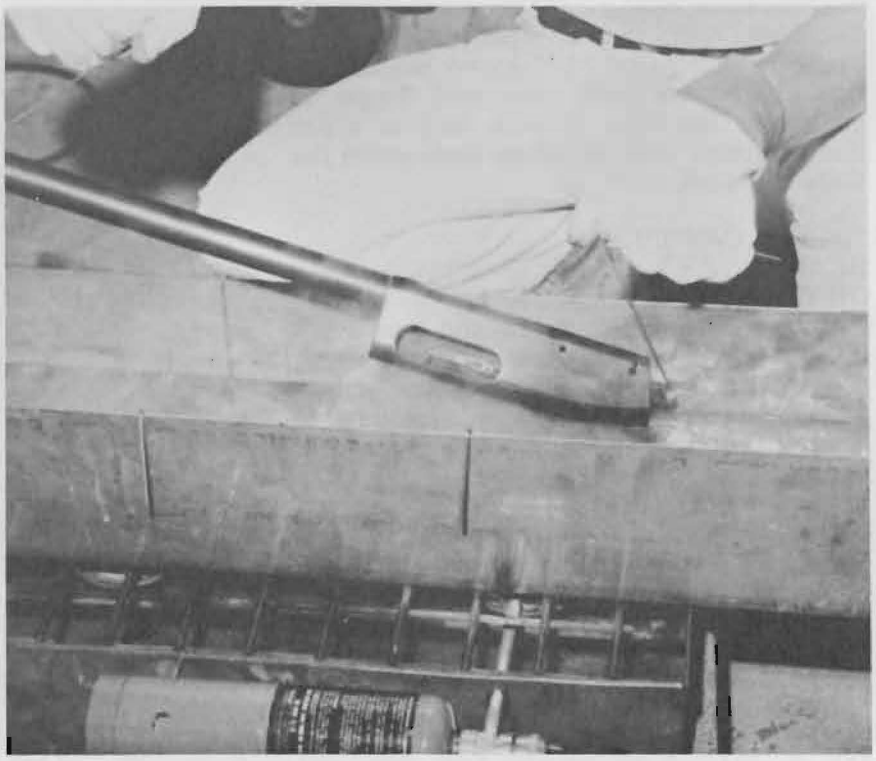

FIGURE 23 — After 15 minutes in the degreasing solution the parts are removed, rinsed, and dried.

cleaned with solvent and touched-up with a commercial preparation such as Brownell's Aluma-Hyde (Figure 24) or Casey's Aluminum Touch-up, which gives the appearance of blueing. Reanodizing is too expensive to even consider.

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

FIGURE 24 — Brownell's Aluma-Hyde is a spray-on lacquer which gives the appearance of blueing.

PROGRAMMED EXERCISE

2

1. How do you mix hydrochloric or muriatic acid and distilled water to minimize the danger of "splatter"?

2. What else is accomplished besides stripping when you apply Herter's European Blue Remover or your 50 percent solution of acid and distilled water to gun metal?

3. Why should aluminum or alloy trigger guards *not* be placed in a degreasing tank with TSP solution?

Answers on Page 19

BLUEING

Now the fun begins — the near-magical transformation from "degreased-gray" to lustrous deep blue-black! We recommend using Herter's Belgian Blue, one of the finest commercial bluers available as your blueing agent. Other solutions you may wish to use are Stoeger's Yankee Blue and Brownell's Dicropan IM, which utilize the basic "hot water" blueing procedure.

Set-up your tank as before, but this time fill it with *distilled water* (rain water, etc.). Tap or well water are *not* recommended, as impurities such as minerals, chemicals, etc., can set-up an electrolytic reaction between the minute particles and the gun metal, causing white "freckles" on your otherwise perfect blueing. (Rain water, if collected from a clean source, will be O K to use.)

Bring the water to a slow, rolling boil. Place the blueing bottle in a corner of the tank with a wire looped around its neck and bent over the edge of the tank, to prevent spilling. Carefully place the degreased parts on the "U"-brackets, taking care that none touch the side of the tank or each other. If this does happen, "hot spots" and blotchy blueing result. The reason for heating the parts in water, rather than with a torch, is to spread the heat evenly so the color will be uniform in all areas.

Small parts should either be individually wired or placed in a "french fry" basket which is suspended in the tank.

DON'T "SPEED" THE PROCESS

Permit the parts to boil a *full* five minutes. Then, wearing clean rubber gloves, remove the first large part and bottle of blueing solution (Figure 25) from the tank. Shake excess water from the metal. If it doesn't dry immediately of its own heat, place that part back in the tank (it wasn't boiled long enough). Lay the part on clean rags or paper. Now, tip the blueing bottle and dampen, don't "load," a two inch cotton square. Swab the solution on the hot metal with long, light strokes, avoiding runs and puddles. Allow the fluid to "work" about five minutes (Figure 26). While this is happening, take the next part from the tank and swab it with blueing solution. Do this to each part in turn, returning that part to the tank *after* the solution has "worked" about five minutes. Reheat, and apply the blueing solution *twice* to each part.

Following the second blueing treatment you'll see a grayish coat, flecked with rust, forming on the metal. Now, *before* returning the part to tank, rub it briskly lengthwise with fine 00 steel wool (Figure 27). As the gray disappears you'll see that beautiful blue-black

FIGURE 25 — Receiver ready for its first blueing solution application. Bottle (in corner) follows last part from tank.

color emerging like a butterfly from its cocoon, and suddenly realize that you're actually *professionally-blueing* a gun. Restrain yourself from calling your wife (or anyone else within earshot); try to get back to work!

Place the "blued" piece back in the tank and card (rub it briskly with fine 00 steel wool) the part on your bench that is awaiting its turn.

GET A SEQUENCE GOING

Now, do things in this order: heat each part five minutes; take it out and apply the blueing solution; wait three to five minutes; card the part briskly; return it to the tank for reheating. What about the blueing bottle? For a good "fix" the fluid has to be hot, too. Remove the bottle right after you take out the *first* part; leave it on your bench until you've finished applying the blueing solution to the *last* part; then put it back in the tank where it stays until you again remove the first part in your blueing sequence.

In most cases, five to seven "passes" or runs of all parts, produce the desired depth of

FIGURE 26 — Appearance of steel after blueing solution has "worked" about five minutes.

FIGURE 27 — Eureka — it's blue! Receiver will soon glisten like the magazine tube just carded.

color. Old guns with comparatively soft steels require only three to four passes; modern rifles with super-hard steels, as many as eight to ten passes (Figure 28). If in doubt, give the gun an extra pass. We've never heard of too much blueing, and the finished gun usually appears a bit lighter than it did after the final pass.

When the color is right, card the parts with super-fine 0000 grade steel wool, then it's back to the tank for a *final ten minute boiling* to stop the blueing action. Shake the metal vigorously to dislodge excess water, pull the barrel plugs (if any), and place the parts overnight in a safe, dry place. The next day, saturate a pad of 0000 steel wool with light oil and go over each part thoroughly, rubbing lengthwise only (Figure 29). Wipe off the excess oil, run an oiled patch through the bore, and the job is done (Figure 30)!

How much time have you invested? Perhaps an hour for polishing, maybe two hours for degreasing and blueing. Overall, you've spent about twice the time required for the rapid black-oxide process. The result? If you followed instructions carefully and didn't abbreviate the polishing or boiling/heating periods, the quality of your blueing will rival that of the finest custom blueing shops!

FIGURE 28 — Vintage .22's, like the Winchester Model 1890, have softer metal and require fewer "passes" than more modern arms.

FIGURE 29 — Final carding with oil-saturated fine steel wool brings out that old-time satin finish.

Before going on, complete Programmed Exercise 3 on Page 19. Be sure to write your answers on a separate sheet of paper before looking at the answers on the page specified.

FIGURE 30 — Finished. A blueing job that is professional in every sense!

PROGRAMMED EXERCISE

3

1. What precautions must be taken when you mix and apply blueing solution?

2. What must be done to the blueing bottle during the "hot water" blueing process?

3. After the second "hot water" blueing treatment, what must be done to metal parts which have formed rust *before* returning them to the tank?

Answers on Page 21

ANSWERS

2

1. You must remember to *always* pour acid into water, never the other way around. Also, use a glass container and glass or wooden stirring rod. Safety goggles and rubber gloves must be worn. Mark the solution "poison" and store it carefully when you are done.

2. The gun metal is "etched" to provide a proper bonding surface for the blueing to "take." Remember to wear clean gloves when handling a gun you have stripped to prevent finger printing, which no amount of blueing will cover.

3. Remember, alloy parts will pit badly if placed in TSP solution. Brownell's Aluma-Hyde or Casey's Aluminum Touch-up should be used go give the appearance of professional blueing to these parts.

BLUEING IN-THE-WHITE METAL FOR NEW, NEVER-BEFORE-BLUED GUNS

The "hot water" blueing process works equally well on new, never-blued metal (Figure 31). The procedure is the same as outlined, with this exception: the virgin metal need not, of course, be treated with blueing remover, which on blued guns, also etches the metal.

In-the-white steel also has to be etched for the blueing to "take," but it's done *after*

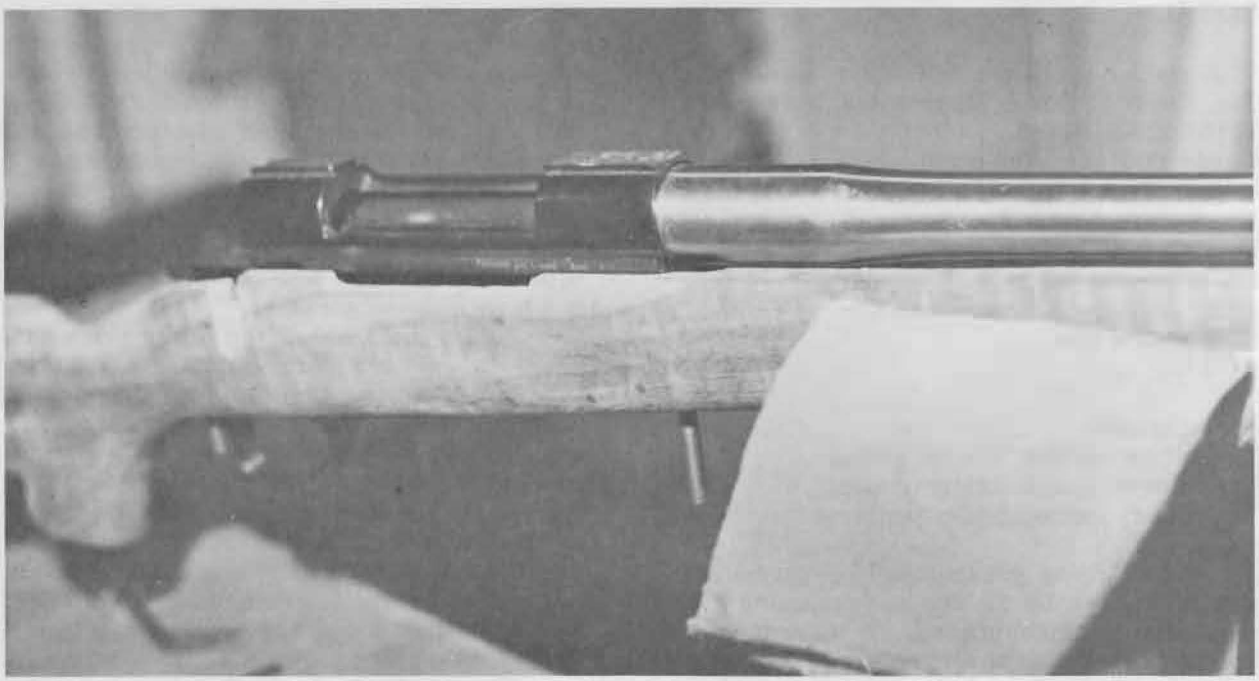

FIGURE 31 — "Hot water" blueing works well on new metal. Usually, receiver and action are blued simultaneously.

the parts have been degreased and following the first five minute boiling in distilled water. Also, a *different* type of etching solution is required for new metal. A solution of one part nitric acid to seven parts distilled water is used. (Pour the acid into the water and not vice versa.)

After the parts have been boiled and removed from the tank, swab on the etching solution with cotton. When the solution dries to a dull gray, place the part back in the tank and boil for another five minutes. Then remove the part and apply the etching solution for the second time. Two treatments are sufficient for all but the hardest steels. Following another five minute boiling, apply the blueing solution and start carding the same as when you're *reblueing!*

ORDERING YOUR BLUEING EQUIPMENT

Now that you have the basics of blueing, you can beg, borrow, or buy the equipment you need. There are two good sources for blueing equipment: Brownell's and Herter's. Here is a list of equipment you can purchase from *Herter's, Inc.*, R.R. 1, Waseca, Minnesota 56093 (507) 835-4011:

Extra fine steel fur — 6 pads	$ .80
Vite cleaner and detergent — 10 pounds	2.17
Blueing tank — 6x6x40" size	8.55
Blue remover — 4 ounce size	1.37
Cold blueing solution — 8 ounce size	1.90
TOTAL	$14.79

A similar list is available from *Brownell's, Inc.*, Route 2, Box 1, Montezuma, Iowa 50171 (515) 623-5401:

Grade 000 extra-fine steel wool — 1 pound	$ 2.25
Dicro-clean No. 909 — 8 pounds	7.94
Blueing tank — 6x6x40" size	14.95
Blueing remover — 1 quart size	3.25
Cold blueing — dicro pan T-4 — 4 ounce size	3.50
TOTAL	$31.89

Miscellaneous	
Kitchen variety rubber gloves	2.00
Ordinary plastic safety glasses	3.00
Ordinary carborundum paper	3.00

Enterprising gunsmiths, like yourselves, can economize by making or purchasing supplies in your neighborhood. For example, the blueing solution remover can be a 50-50 mixture of water and muriatic acid, nitric acid, or sulfuric (battery) acid. These acids are available at druggists and battery stores. Fine steel wool can be bought at hardware stores. Rubber gloves and plastic safety glasses at discount stores. About the only items you will have to purchase through the mail are blueing solutions, and possibly a blueing tank. There may be some trouble locating a detergent cleaner. However, its low cost may motivate you to buy cleaner through the mail also.

A final word. There are many gunsmith books and magazine articles on blueing. Processes improve yearly, so keep up with newer methods of cold and hot blueing. Later on in this Course you will learn the professional black oxiding procedure Winchester, Remington, and other arms companies use. For perfect blueing, the black oxiding surpasses all methods, and is fast.

AS A GUN PRO, YOU CAN BLUE GUNS FOR PROFIT!

The primary purpose of any educational program is to equip you for a career and the means of earning a living. This usually takes years in other professions. As a gun pro student, you have the opportunity to make money almost immediately. Your new-found knowledge of "hot water" blueing can be used to reblue your own guns now! You may become so adept at the "hot water" blueing technique that you'll think in terms of another and larger tanks, rather than a black oxide set-up.

The word has probably already spread among your friends that you're taking this Course. Any initial skepticism on their part will soon give way to respect — when friends and customers see your distinctive, satiny-soft blueing, the word will get around and you'll surely get most of your local double-gun business, and plenty from shooters who appreciate "old-time" blueing craftsmanship.

As you progress through your Course and your know-how on gun repair, blueing, handloading, etc., increases, that "following" will also grow. You'll be gaining a reputation as a man with the answers.

This is the heart of the gun pro concept. Know the *answers* and shooters come to you.

In a month or two you may be ready to make more money with minor repairs and adjustments. But your most valuable asset at this point is your ever increasing circle of friends, people who will soon look to *you* for advice and counseling. (You'll be amazed at how often the phone may ring, and a complete stranger will say, "Joe Balank suggested I call. I need my rifle blued and a new scope installed. What do you recommend?")

These individuals are fledgling gun nuts, usually just starting. They're interested in

"picking your brains." But they're also interested in buying guns and accessories. Later in this Course you'll learn where and how to buy any rifle, shotgun, handgun, or blackpowder weapon; any scope, loading press, and all components; *everything* sold in sporting goods and gun shops, at wholesale and lower prices.

Let your "following" know you can get many firearms or accessories they want at wholesale plus 10 percent, and you should be very, very busy writing orders.

All you require, basically, to go into business for yourself part-time, selling on a cost-plus basis, is an FFL license. You can operate out of your home, and you needn't inventory anything. Your customer puts up the deposit, and he pays when the parcel arrives. You don't tie up any cash.

Soon you'll receive complete information on how to apply and qualify for your Federal Firearms License. You'll learn where to buy at regular dealer prices. More important, you'll receive information on valuable, top-name guns and accessories available at low jobber close-out prices.

To gain some idea of the money you can make selling guns and related merchandise, see Table 2, which gives regular retail, wholesale, and *your price* on each item. Show this to your friends, and watch their enthusiasm when you openly and honestly tell them they can purchase any of these items at the lowest price listed, *plus only 10 percent.* Hundreds of gun pros throughout the country are already making extra and worthwhile monthly profits, doing their friends the favor of "getting it for them wholesale."

Few, if any, schools or courses offer such a surefire and proven way to make good money while learning. It's just one advantage of many in your beginning career as a gun pro.

Now you are ready to complete your first mail-in assignment. To *show that you know*, take EXAMINATION 1 now. Check your answers to make sure they are correct. Then MAIL IN your first EXAM in the envelope provided.

ANSWERS

3

1. You must wear rubber gloves, safety glasses, and work in a well-ventilated area. An open garage is OK to work in. Always protect your eyes, lungs and skin when working with acids and blueing solutions. Safe is better than sorry.

2. Keep it hot by immersing the blueing bottle in the tank. Follow the procedure of removing the bottle with the first part to be blued and returning the bottle to the tank with the last part. Repeat the procedure with each blueing sequence. Remember, it is important to have your blueing solution about the same temperature as the metal part.

3. You must card the gun metal (rub it briskly lengthwise with fine 00 steel wool). You'll see that beautiful blue-black color emerge after carding!

TABLE 2

Typical examples of the many close-out and "jobber specials" that may soon be available to you as a licensed FFL dealer! (Prices change from month to month, and many more products, from blackpowder replicas to loading presses and components, are also available at huge savings.)

Item	List	Regular Dealer	Your Price
Bushnell Banner 3x9 scope	$ 69.95	$ 46.62	$ 38.26
RCBS dies	15.00	10.00	7.50
Dan Wesson revolver	130.35	97.99	89.50
Husquarna Crown Grade Center-fire rifle	280.00	210.00	169.50
Winchester Model 70	195.00	146.25	135.73
BSA Monarch Center-fire rifle	199.95	149.95	119.95
Sako Finnwolf	259.95	195.00	149.95
Savage 99	169.50	127.45	102.50
Buscadero belt and holster	39.95	$20-$30	11.90
Imported revolvers			Low as $19.95
Imported automatic pistols			Low as $29.95

NOTES

NOTES

NOTES

NORTH AMERICAN SCHOOL OF FIREARMS

4500 Campus Drive, University Plaza, Newport Beach, California 92663

1

EXAMINATION FOR STUDY UNIT 1

When you have finished Study Unit 1, complete this examination, then:

1. transfer your answers to an Examination Answer Sheet, and

2. mail your Examination Answer Sheet to School Headquarters for grading.

KEEP THIS ORIGINAL EXAMINATION IN YOUR FILES, MAIL ONLY YOUR ANSWER SHEET FOR GRADING.

Name _____ STUDENT NO. _____
(Please print)
Address _____ SCORE: _____
City _____ (For office use only)

State _____ Zip _____ Phone No. (___) _____

☐ Check here if new address

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 (4 points each).

1. The inexpensive basic blueing technique used to impart a satiny "Connoisseur's Finish" to any previously blued firearm is called (a) "hot water" blueing. (b) "cold acid" blueing. (c) "browning." (d) black-oxiding. A

2. Which of the following is not recommended as good shop technique? (a) use a padded vise to mount your action or barrel (b) before blueing, clean all parts with TSP or Oakum (c) use plugs of wood dowel or clothespins in the ends of the bore for handles (d) use a propane gas stove for heating your blueing tank D

3. To degrease your parts in the "hot water" blueing process, it is recommended that you bring the degreasing solution to a boil and then place the parts in the hot solution for what length of time? (a) 5 minutes (b) 10 minutes (c) 15 minutes (d) 60 minutes C

4. To transform "degreased-gray" to lustrous deep blue-black using the "hot water" blueing technique, you must (a) card (rub briskly lengthwise with fine 00 steel wool) the metal part with fine 00 steel wool. (b) saturate a pad of super-fine 0000 steel wool with light oil and go over each part. (c) quench the metal part in cold tap water and apply blueing. (d) lay the part on newspaper, swab with vaseline thoroughly, and wipe clean. A

5. In "hot water" blueing, the second step (after degreasing) is the blueing sequence. The recommended procedure is to fill the tank with distilled water, bring it to a slow boil and place the blueing bottle and parts in the tank. How long a time is recommended for boiling before removing parts for the first blueing? (a) 15 minutes (b) 10 minutes (c) 5 minutes (d) 60 minutes C

6. To remove old blueing, you can save time and money by (a) using a commercial remover. (b) making your own remover from hydrochloric or muriatic acid and distilled water. (c) using a buffing wheel or strong abrasive. (d) lightly sand to get the worst of the old blueing, then blue over the smoothed barrel. B

7. A second tank would come in handy in the "hot water" blueing process because it could conveniently contain the (a) degreasing solution of TSP or Oakum and tap water. (b) etching solution of nitric acid and distilled water. (c) tap water for boiling and heating the parts, and blueing bottle. (d) distilled water for boiling and heating the parts, and blueing bottle. d

8. After a final ten minute boiling to stop the blueing action in the "hot water" blueing process, you pull the barrel plugs (if any), and place the parts overnight in a safe, dry place. The next day, you should (a) card the parts with an abrasive cloth. (b) card the parts with crocus cloth. (c) saturate a pad of 0000 steel wool with light oil and go over each part thoroughly, rubbing lengthwise only, wipe off excess oil. (d) saturate a pad of super-fine 0000 steel wool with metal polish and use a "shoeshine" motion until the metal is shiny bright in appearance. C

9. Degreasing refers to the step of removing the faintest smudge of oil, even fingerprints, from your gun parts. Your best solvent for degreasing is (a) white gasoline. (b) TSP or Oakum. (c) commercial solvents. (d) STP or 409. B

10. What may result if caution is not exercised, and you allow degreased parts to touch each other or the sides of the blueing tank? (a) "hot spots" and blotchy blueing (b) white "freckles" on your otherwise perfect blueing job (c) "scratches," which blueing will not cover (d) blueing "shoot-out" A

11. In "hot water" blueing, distilled water should be used (a) the second time you fill up the tank, after degreasing and before the blueing sequence. (b) after TSP is added the first time you fill up the tank before the degreasing operation. (c) the third time, when non-ferrous pats are etched. (d) to wash up after the blueing job is done. A

12. Never-before-blued guns may be blued by the "hot water" method, but first you must (a) use a 50 percent solution of either hydrochloric acid or muriatic acid to etch the metal. (b) use Herter's European Blue Remover to etch the metal. (c) use an etching solution of one part nitric acid to seven parts distilled water. (d) swath the part in brine-soaked rags and place it in a box overnight. C

II. **TRUE-FALSE QUESTIONS. Check the correct answer. If any part of the statement is false, the statement should be marked "FALSE" (4 points each).**

	TRUE	FALSE
13. "Hot water" blueing is an expensive and complicated process.		✓
14. "Browning" is a solution to the "after-rust" problem.		✓
15. Newspapers make excellent "rags" to dry degreased metal gun parts before blueing.		✓
16. All blueing is controlled rusting.	✓	
17. TSP is an excellent degreaser for alloy and aluminum gun parts.		✓
18. Metal polishing should be done to remove blemishes before blueing is applied, if necessary.	✓	
19. Removing the old blueing with a 50 percent solution of hydrochloric acid and water will etch the metal.	✓	
20. Brownell's Aluma-Hyde gives the appearance of blueing when used on aluminum parts.	✓	
21. Propane cylinders are an economical source of fuel for heating the tank in the "hot water" blueing process.		✓

22. Old guns with comparably soft steel require fewer "passes" or runs of all parts in the blueing sequence than modern firearms with super-hard steel to produce the same desired depth of color. ✓ _____

23. Tap water is not recommended in the "hot water" blueing process because of the possible electrolytic reaction, which can cause white "freckles" on your otherwise perfect blueing. ✓ _____

24. Herter's Belgian Blue is a blueing agent which can be used in the "hot water" blueing process. ✓ _____

25. One of the more profitable parts of a gun pro business can be learning how to blue guns quickly, economically, and like a professional. ✓ _____

****