Firearms Photography

Part I

A very serious problem faced by all custom gunmakers is the constant need for decent photography of finished work. For "decent" photography, read publishable, for if a gunmaker can't get his work before the public in a clearly discernable fashion, then he can't expect to garner much patronage except from people who can come by his shop and see the work first hand. While classified advertising and even small display ads may be of some help in bringing orders, or at least inquiries, such things never have the impact of large, crisp halftones in an article on new work, or perhaps in the custom gun section of a large annual such as Gun Digest, a publication which illustrates the work of custom gunmakers in each issue at no charge. Muzzle Blasts is particularly anxious to display as much new work as possible. For example, I've long been planning a major piece on work being done in the English style, including many of the techniques necessary to emulate the London fashion, but the paucity of usable prints I've been able to prize away from gunmakers doing that sort of thing wouldn't do for a two-page essay.

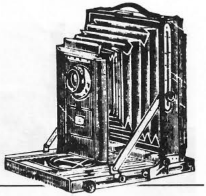
Another little matter, of course, might fall under the heading of "business graphics." Brochures, in other words. If a gunmaker is unable to send out a professional-looking set of photo prints or a right spiffy brochure which shows nice details, his prospective patrons might well wonder about how much care the guy gives the rest of his work. Sure, if we put in the hours at the bench necessary to do competent gunwork, none of us have the time to mess with secondary things like photographing guns. Let somebody else do it, we say. But who? Well, I've known a good number of fellows who could proudly advertise themselves as "professional photographers," and they weren't lying about it at all. The problem is that the greatest percentage of the subjects sitting in front of the lenses of most working photographers is people. Even a wiggly three-year-old with the humor of an unfed badger, however, may well be a far more cooperative subject than some objects. Of course, things generally don't move, and you don't have to get them to grin. But what if the doggone thing is shiny, has surfaces curving in every direction, and is loaded with miniscule detail, all of which must be captured on film? Well, even Richard Avedon might choke a bit over having to make a decent shot of a gleaming brass-mounted longrifle. The fact of the matter is that muzzleloading guns are some of the most difficult things around to photograph well, due to the problems of lighting such complex surfaces. Unless he has had experience with such things, the neighborhood "professional photographer" might well make as good a shot of your long gun as a visitor to the Louvre might get of the Mona Lisa with his pocket Polaroid. Even after handing over indifferent prints, the working photog will still have to present you with a bill that looks like the National Debt due to the time he's spent on the job, since a black-and-white series on a gun can easily eat of three hours' worth of sweaty fussing. Though I must hurriedly assure that I don't intend to condemn the photography trade, the fact is that guns can't be lighted and photographed like people, no matter how fine the camera equipment is. So, if we can't send our work down to the corner portrait studio, what do we do? Well, we don't send a stock blank out for someone to inlay or carve. We learn to do it ourselves if we want it right, and if we want good documentation of work that has used up a great deal of time, thought, and energy, then we learn to photograph it, too. It's part of the job.

The ironic thing is that all of us serious about the trade, whether we work at it full time or not, have long since found that things just can't be done efficiently without the right tools. Unless a chap has a long string of customers who sport beards, burnooses, and BMW's--one for each day of the week--gathering a really complete collection of hand tools is usually a long and slow process. I've been adding to my working tool collection for over twenty years, and I'd about have to sell my house now to pay the replacement cost of what I have, and my shop isn't known for any impressive array of machinery. The replacement cost of my gouges and chisels alone would now approach $3,500. I bought a good Rockwell drill press a long time ago for what seemed to be a very painful price, $275. The same machine now is nearly $700. Well, there are certainly things that we can do without, but what we need, we need. And sooner or later we all find out that the cheapest tool quite often is the expensive one. We grin and bear it, because we know that a quality tool will outlast us.

The one set of tools almost no gunmaker has is camera equipment. As for me, I'd give up half my carving tools before I'd get rid of the cameras, and I am in no sense of the word a photographer. In fact, I don't really have any business writing this article; it should have been done by someone who really knows photography, like Bob Roberts, George Shumway, or Hayden Allen. But I've had to learn to do it, and have worked out a seat-of-the-pants method that usually works. There are better ways, but I either can't afford the equipment or just plain don't have the inclination to learn about more gadgets. And I sure as heck don't know how to photograph people. The "por-

For The Gunmaker

by John Bivins, North Carolina



traits" I've tried printed out like something Picasso might have flung onto a canvas after spending a day swimming in sangria.

The problem with getting good, consistent results with firearms photography is that you really need total control of lighting. As we saw in Robert E. Mayer's article, Close-Up and Lighting Technique appearing in the May 1983 issue of Muzzle Blasts, it's certainly possible to make good record shots in indirect daylight. To consistently provide the dramatic effects or special emphasis on detail we might like to have in a publication, though, a studio setup is needed. The lighting principle is the same, though: the light must be diffused, not direct, or all of those lovingly polished curves, be they metal or wood, will glare like a 747 landing light.

Years ago I used to use George Shumway's "light painting" technique, which George should do a piece on. It involves long, long exposures with slow film and a constantly moving light source that quite literally fills in all of the desired surfaces. It works exceedingly well, but unless you're an old hand like George, you don't really know what's on the film 'till it's pulled out of the soup. Besides, all that moving around with a flood on the end of a stick left me feeling like I'd undergone a two-day attack of St. Vitus' Dance. I finally decided that the one way I'd know exactly what I was doing was to put the gun into a light tent which would provide good diffusion, and then fool around with the lights until I saw what I liked in the viewfinder. I found that the most convenient way to set up a gun, either short or long, for a photo session was just to stick the thing muzzle-down over a 3/8" steel rod a couple of feet long. I fitted my rod into a great chunk of poplar heavy enough not to tip even with a bubble-butted pre-Rev rifle poised on top. Any conceivable view can be shot of a gun that's vertically oriented, and the gun can be readily twisted about on its rod for special angles or to enhance the lighting effect in some way. In order to avoid showing that Rube Goldberg apparatus in a print, it's a simple thing just to wrap the block with photo-gray paper before jamming the rod in its hole. If you have a penchant for squirrel rifles, then you'll likely need a 1/4" rod as well. In either case, do round over the end of the rod nicely and polish it up. Scratched bores are nasty.

All right. Now the cheapest item in our mini-studio is out of the way; the next is the light tent. The best place to set up your rig is in a dry, clean, but unlived-in section of the house. A basement is dandy if it isn't damp; a clean garage (is there any such thing?) is all right, but not the best thing on a cold winter night. A fair amount of space is needed, about eight feet of clear floor next to a wall. You'll also need to have about eight feet of clear space out from the wall, but only in a relatively narrow "corridor;" that's for full-length shots. Most of the work will be much closer.

The light tent need not be anything fancy. Four floor-to-ceiling uprights are needed. If you have exposed joists in the ceiling, then 2 x 4's will work dandy. If you have a finished ceiling you don't want to mess up, then it's no big matter of skilled carpentry to build an open-sided frame of the same materials; make the thing 4' square, outside dimensions. I happen to use a set of spring-loaded uprights called "Pole Cats," but for a permanent installation wood is really better. The reason for that is the sides must be covered with diffusion material, and such things are easily hung when they can be stapled up.

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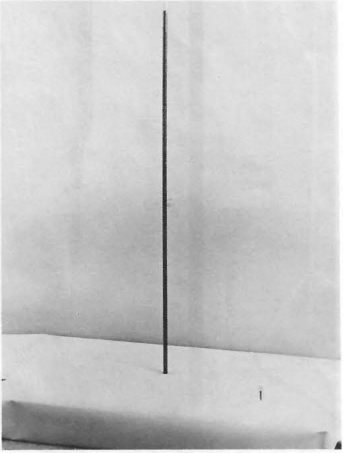
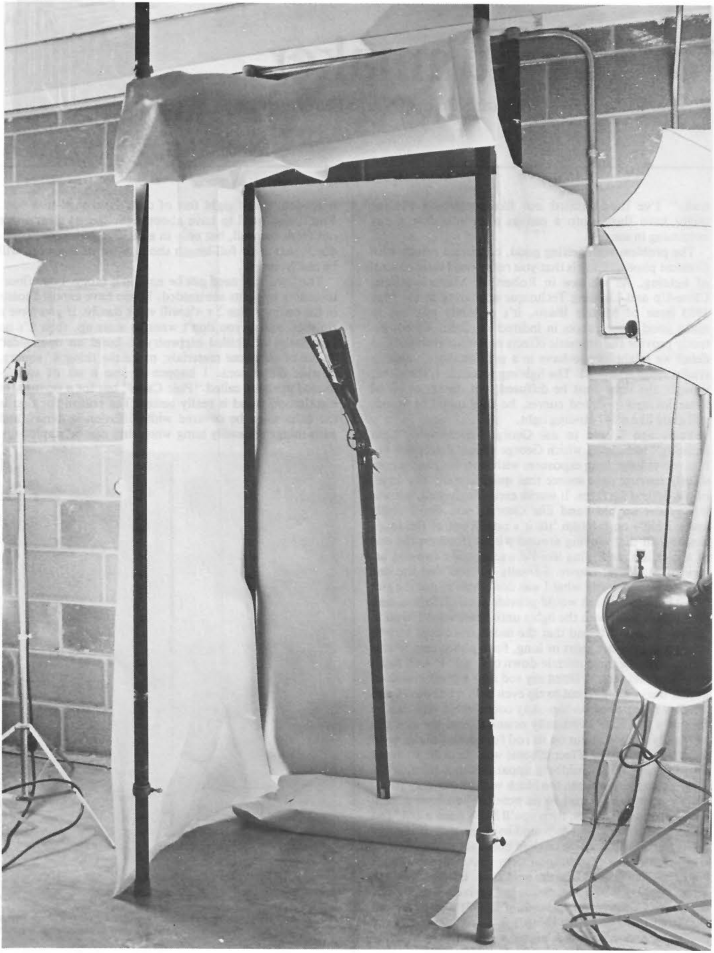


The quickest and cheapest gun stand to make: a steel rod stuck into a block of wood. The piece to be photographed is placed over the rod muzzle-down.



Metal poles require taping. So what is the "diffusion material?" Well, the most convenient and cheap stuff I have come up with is the common interface material used in making dresses and such. It's readily available in two-foot widths for about $1.25 per yard, and some shopping about will yield 52″ widths, which is better since you don't have to piece it together. Buy the light or medium-weight variety, and staple it to the sides of your frame. Fit another panel to the front of the frame, but attach it only at the top. If you have the wide material, take a sharp knife and make a three-foot slit right in the center of the panel. You'll see why later.

That's all there is to a light tent. For a backing surface, go to a largish photo supply and buy a roll of photo gray paper. A 12-yard roll of 53″ wide stuff is ten bucks. Various colors are also available and nice if you want to do color work as well, but the light gray--not white--is the right thing for black-and-white, and that's what we're primarily talking about here. Of all the color photography you might do, only a tiny percentage of it would ever have any hope of getting published. In any event, just whack off a piece of that paper and cover the wall behind the light tent with it. As you'll recall, we talked about wrapping the block for the vertical rod with the same stuff. When so done, the block tends to disappear visually against the backdrop of the same color.

The cheap part is now done. Let's get to the gut-ripping part. For this, you'll need to get yourself in the same state of mind that would allow you to rationalize pulling the cost of a nice used lathe out of the family butter-and-egg money. The premise here is that we're not going to photograph guns for a hobby; we're going to photograph them as a business. That is, we're going to provide ourselves with the wherewithal to photograph custom guns in a fashion that will allow us to send out publishable prints. The idea, then, is to put together a system that will do a professional job without spending megabucks, but some rubles indeed must flow. First comes the camera, which invariably is the item which will gag you the most pricewise. Except for tight detail shots, even a good quality 35mm just won't hack it. Even for closeups, a 35mm has the disadvantage of having to discern all of the nuances of your lighting through a small viewfinder. For that, a ground-glass viewfinder is ever so much easier to use. More importantly, making 8 x 10 enlargements from such a small negative invites grainy prints unless the film used is very slow indeed. For any publication, 8 x 10 prints are by far the best for several reasons we needn't consider here. For serious gun photography, a medium-format camera--that is, one using 120 (12 exposure) or 220 (24 exposure) film, and producing a 2 1/4 x 2 1/4 or 2 1/4 x 2 3/4 negative (there are also other size formats in this range)--is the handiest to use. Large format cameras such as a 4 x 5 are probably even better, but I have no experience with them myself. Most of the medium-format jobs have a viewfinder on top fitted with a generous ground glass that will give you an excellent look at what you're shooting. The prices of new cameras are horrible. The only lens you really need is an 80mm f2.8, which is usually standard on such cameras. Fitted with an 80mm lens, a new Hasselblad 500CM will set you back to the tune of $1300 from one of the New York discount houses. Take heart, though, you don't have to think of yourself as the Ansel Adams of gun photography. A Bronica SQ-A can be had complete for less than $600, and a Mamiya 645 for little more than $450. Both will do anything you'll ever want. I used to have the older version of the Bronica, called the S2-A, and loved it. Bob Roberts recomends the Pentax 6 x 7, which runs around $535 with 90mm f2.8 glass. It's rather like a huge version of a 35mm, though, since it uses a through-the-lens viewfinder like the smaller camera. I like a ground-glass job myself. There are other medium-format cameras to consider, though. Get a copy of Popular Photography or some similar magazine and look through the ads from the New York camera houses. Don't even think that you can get such prices from a camera store, but what you can do is find a really good used camera through the local want-ads, and the same is true of other equipment as well. You might well find a camera with a bagful of lenses for a few hundred bucks that would sell for thousands in the store. Just don't be tempted to buy anything that has the appearance of having been used hard, for camera repair is expensive and slow, and parts for older model bodies or lens may be difficult or even impossible to find.

Left: Bivins' light tent, here set up with Pole-Cats and interface fabric taped in place. A frame constructed of 2 x 4's will work just as well.

With a decent 2 1/4 camera fitted with an 80mm lens and a film back, preferably a back which will take 220

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Bivins considers the medium-format camera best suited to serious gun photography. While the Hasselblad shown here costs well over $1,000 wholesale, a number of other cameras of the same general type on the market can be bought for far less money.

film, you'll need some other goodies as well. For detail photography, either extension rings or a set of closeup lens are needed. The former is simply a precisely-made sleeve with bayonet fittings on both ends so that it can be placed between the lens and the camera body. Since an extension ring increases the distance between the lens and the film plane, it allows you to get closer to the subject. However, extensions can require a full f-stop change in aperture setting, which is a bit of an inconvenience--especially if you forget that little detail and underexpose all your shots, for your light meter doesn't know you've installed an extension. Close-up lens don't cause that problem, though every piece of glass you add in front of the lens technically introduces increasing problems of distortion or dirt. Even so, I like the convenience of closeup lens. With a 2 1/4 camera, a set of three will more than do the job; with them all coupled together, whatever you're photographing had best be clean work, or the smallest flaw will yawn like the Meteor Crater. Though it's best to buy good quality closeup lens, I have gotten good results from inexpensive ones like Vivitar. I don't use any filters for black-and-white work, though they can be used to do things like enhance figure in wood. I do like to use a light hood over the lens, which is an inexpensive accesory and helps to keep out stray "flares" from lamps close to the lens. Get a deep one that will work with closeup attachments or filters installed. A good quality cable release is an absolute must, since your exposures will be slow.

One item that's just as important as the camera is a light meter. Even if you must use a 35mm, consider what a photographer friend of mine says on the subject: "The best accessory for a through-the-lens metered camera is a hand-held light meter." Sure, having built-in gadgetry is handy for outdoor snapshots, but for studio work where you need precise readings from several different locations on a gunstock, a built-in light meter just averages things out too much for our purposes. I swear by, and have never sworn at, a Gossen Luna Pro meter. New ones sell for about $80 from the discount houses now. I have a $35 variable angle attachment on mine, which allows me to read very small sections of a gun very readily, and that "spot" attachment is useful for outdoor scenes as well. You can buy meters for as little as $25, but that's one of those critical areas where scrimping on price is going to cost you later. Buy a good meter to start with. A heavy-duty tripod is also something you can't do without; I use

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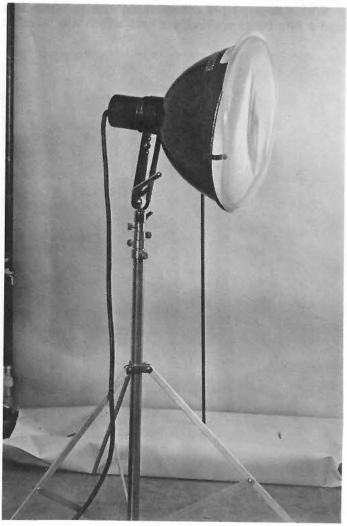

Unless a gunmaker opts for high-tech quartz lamps, the plain-jane studio floods fitted with plastic diffusers, 500-watt lamps, and a decent stand will do the job well enough.

GOSSEN
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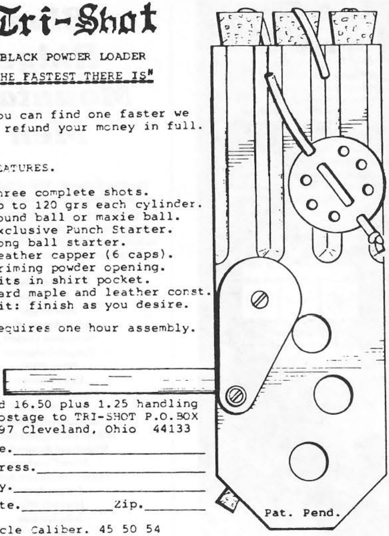
Zeit
time

A professional quality light meter is just as important as the camera itself; shown here is the Gossen Luna Pro which Bivins uses.



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Photography

(continued from page 8)

a Leitz Tilt-All which has precise, no-nonsense angle and height adjustments. It's an expensive item at nearly $90; good tripods can be had for less, but avoid anything with gadgets like cranks, and don't think that anything less than a $50 bill will pick up a new one that's at all good. Don't buy a used one unless everything on it is tighter'n Dick's hatband.

Next comes lighting, and gun photography is sort of like carving: you never have enough gouges for carving or lights for photography. I have gotten along fine with four lamps many, many times, though, and that's what I'd suggest as a start in order to save a few bucks. I use no lamps that are less than 500 watts. Now, you can get into high-tech with lighting equipment in a hurry, if you go to things like 1000-watt quartz heads which wholesale for $85 apiece. Bounced off silvered umbrellas which can be attached to the heads, those units provide a good diffused light. Far cheaper, though, are the standard old photoflood reflectors deep enough to take a big No. 2 500-watt bulb. Smith-Victor A-100 reflectors can be had new for $30 each, and next to nothing used. Incidentally, I prefer to buy the 3200K photoflood bulbs: they cost no more, and are balanced with the color film that I use. More on that later. For a softer light from your reflectors, you can buy clip-on plastic diffusers which are cheap. They will buckle and bulge with the heat of the 500-watt lamps, but who cares. I've been using one set for eight years. The set before that melted away.

If you find a good source for cheap used lighting, a specialized lamp you might want to consider is a pencil spot. I have an old hog which I don't illustrate here, but is neverthless a good old friend. It has a rotating aperture disc which allows me to change the diameter of the light beam from a pinpoint to a large circle, and is handy as the devil for throwing a tiny spot under the pan of a bright finished lockplate, or even for providing a highlight spot on the background behind a gun. That can be quite dramatic in a color shot.

Like tripods, there are a great diversity of lamp stands on the market. The cheap ones are miserable; the best ones are merely a nuisance. Don't buy the cheapos, and that means stands less than about $25 apiece wholesale. I like the 9′ Pic Professional stands which go for $55 each. They are rugged enough that if you find them used, even in battered condition, they can be a fine buy. I've seen used ones for as little as $10. While we're on the subject, be sure that you have electrical service that will stand two or three thousand watts' worth of juice flowing out. Constantly-blown breakers or fuses can be a little irritating. You'll also need heavy-duty extension cords, and the cheapest way to get those is to buy 50-75 feet of heavy grounded AC line cord and fit it to the ready-made plugs and sockets also available at the hardware.

That's about it. The only thing left to get, thankfully, is a piece of white matte board for cutting up into secondary reflectors, and the film, both of which are cheap enough. In fact, film should be thought of as the cheapest component of all, for we're going to burn up a bunch of it on every job we shoot. But we'll get to film types and how we can try to put sharp images on them in the next issue. You say that I've already spent all of your tool budget for the next five years? I know the feeling all too well. If we don't compromise the quality of our gun work, though, then we don't want to compromise with mediocre pictures of it.

(continued next month) ●

Firearms Photography

Part II

Well, last month we spent all of your money getting set up to photograph long guns--or short ones, for that matter--so since the hurting part is over, we might as well get along with the fun. With the light tent set up, the camera ready on its tripod, light cords snaking all over the floor, and hopefully no breakers blown, we've got to make some decent shots and get that work to press in order to sell a rifle and pay for all the new hardware.

As I mentioned in the first installment, black-and-white photography is the basic name of the game here, since shots are needed for brochures, magazine texts, and the like, the bulk of which are run in black-and-white halftones. You can't expect decent black-and-white reproduction from color prints, for all the red tones tend to go black. You may well want color for a portfolio, though, and if you're lucky, you might just turn a 2 1/4 color transparency into a magazine cover--*if* the shot is really high quality. There are quite a number of films available on the market for both purposes, so many, in fact, that understanding the properties of all of them is rather like undertaking a study of Persian carpets. I'm a simple-minded sort, and seldom have the time to experiment with anything other than benchwork. So I made myself a nuisance around a couple of good decorative arts photographers, and boiled my film choices quickly right down to a mere two. For black-and-white, a fairly slow, fine-grain film is needed. Kodak Plus-X fills the bill for all of my black-and-white; it has a speed of ASA 125. For convenience, and to avoid idiotic mistakes such as failing to change ASA setting on the light meter when changing from one film to another, for color photography I decided to use Kodak Ektachrome 160, a tungsten film with an ASA of 160. Since there is so little difference in the speed of this film and that of Plus-X, I don't bother to reset the meter; the differential between the two is more than compensated for in shooting bracketed exposures. That is, making the shot at the shutter speed recommended by the meter for the given shutter opening, and then making two additional shots, one faster, and one slower. I always do that, because film is a good deal cheaper than having a rifle shipped back for a second photography session.

Ektachrome 160 color film requires tungsten lamps, the 3200K jobs I mentioned before, and for such photofloods I use only the 500-watt bulbs. Tungsten film requires that you have only such color-corrected lamps illuminating your work. If you forget that, and are set up near a natural light source such as a window, or if you leave overhead fluorescents on, you'll wind up with blue pictures, and I don't mean the sort that are filled with folks in sporting poses. I mean *blue*. The same is true if you try to use this film outdoors unless you correct with a filter. This film, incidentally, is a transparency film, which is best if anyone is to make color separations from your photography, and that's a very necessary part of the four-color offset printing which produces most magazine covers. A color processing house can also make prints from transparencies as well, so don't feel that you need to be using a print film for color.

All right. The rifle is sitting on its rod, the lamps are switched on, you've fooled around with your camera enough to know how it works, and Plus-X is loaded in the film back, and perhaps Ektachrome 160 in a second back if you had the loot to buy one. Having two backs, say a 24-exposure cassette for black-and-white, and a 12-exposure for color, makes for less work if you're shooting color as well, since all that's needed to record the shot in color is to insert a slide in the back, remove it, and put the color back on. Simple, and with films of compatible speed, nothing else need be changed.

So where do we put the lights? That depends on about five million things, all of which you can plainly see in the viewfinder if you take the *time to look* carefully. Basically, the firearm is placed near the back of the light tent, and the lights at the sides of the tent near the front. They should angle back toward the object in most instances, though I'm not going to suggest any particular angle. I've never measured light angles, for the trick is to move the lights around until you see what you think is right in the viewfinder. In the first illustration, I had set up to shoot a full-length view, a shot not so easy to light evenly. Two 500-watt lamps were used close to the floor to light the forearm of the rifle, and two 1000-watt quartz lamps with umbrellas for the butt area; in place of the quartz lamps, two 500-watt photofloods would have done just as well. All of the photofloods should have plastic diffusers on them unless you use a heavy interface material for the light tent. It's not hard to see from this that a great deal of light, albeit soft and diffused, is being put on the subject. Why not use less, and avoid turning the room into a furnace? Good point. Using as much light as possible allows us to use a slow film with the lens aperture stopped down as far as possible for the best results; more on this anon.

In a sense, full-length shots are something of a throwaway. No matter how fine your lens and skill, when a full view of a long gun is reduced in size and made into halftone printed image, you don't see much detail. Conse-

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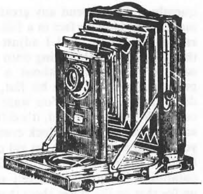
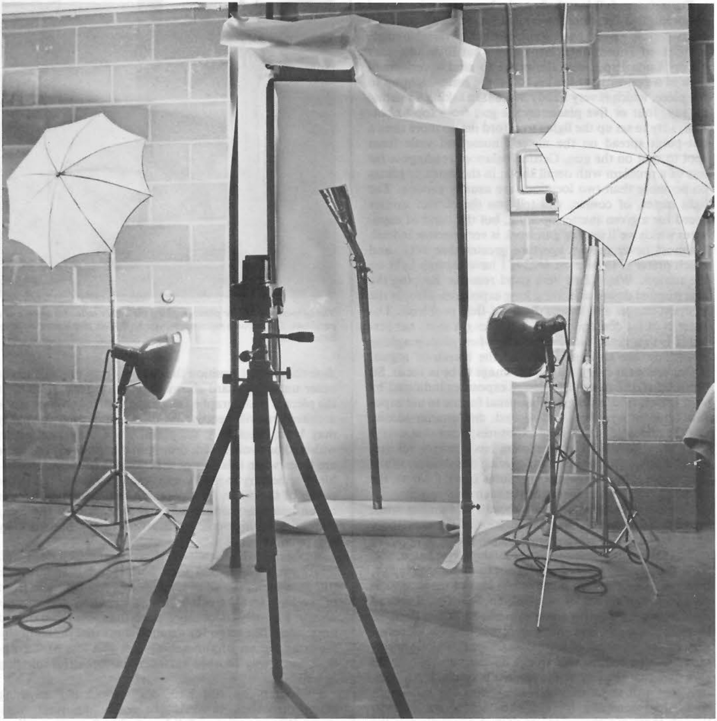


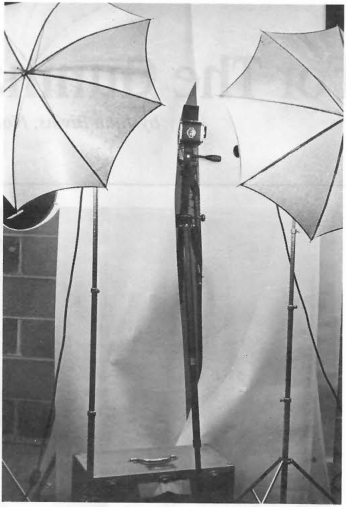


Bivins' light-tent setup for a full-length view; lighting the top of the scene are two 1000-watt quartz lamps with reflective umbrellas. 500-watt photofloods, like those at the bottom, would do as well.

quently, I don't spend any great gouts of time trying to make everything perfect in a full-length. I try to light the entire gun evenly, and I adjust the lights so that they throw a bit of highlighting onto sharply-curved surfaces such as the wrist. Without a little highlighting, the printed image will be a bit flat, and even flatter in reduced printed image. You want folks to see those nice curves. With this method, it's difficult to light metal such as a patchbox or bright lock evenly in a full-length view; you'll find it difficult to get rid of hotspots and dark reflections in brass. This is where George Shumway's light-painting technique is definitely superior, but we'll make up for that on the closer shots that really count.

For a decent full-length shot, the lamps must be moved about until a balanced meter reading can be obtained from muzzle cap to butt. Remember that variable angle attachment I mentioned last time? That little accessory on my Luna Pro meter allows me to read a very small area of a gun without having to get the meter right up to the piece, which is very handy indeed. In taking a reading at, say, four or five places on the gun from top to bottom, I try to set up the lights to afford me no more than a one-point spread on the meter's numerical scale from spot to spot on the gun. Getting balanced readings is far less of a problem with detail shots; in the latter, readings on no more than two locations are usually enough. The light meter, of course, will tell you the correct shutter speed for a given shutter opening, but the band of exposures which we'll use for gun work is very narrow indeed. I almost never use an aperture greater that f/11, and much prefer f/16 or even f/22 if I have enough light on the subject. Why? Two very good reasons. Keeping the lens stopped down, and using long exposures, affords the sharpest images and lessens depth-of-field problems. The latter is of no consequence in a full-length shot, but certainly is in a detail view, especially when photographing something like an angled view of the breech of a gun, where you want everything in the image to be in focus. So don't be afraid to use the slower exposures indicated by your meter. It's nothing at all unusual for me to use exposure times of a second, half-second, and quarter-second at f/11 and f/16. Such long exposures mean that everything must be *still*. If your camera has a mirror release, by all means trip that before triggering the shutter. When the focusing mirror swings, it causes quite a jar to the camera, which can be disastrous at such slow speeds.

The 2 1/4 cameras, at least those I'm familiar with, have a magnifier hinged to the interior of the viewfinder hood. Use it. Focusing for a full-length shot is simple; focusing for a detail shot may be something else again, and we'll go over that later. In order not to distort the image, be certain that the film plane or the lens of the camera is parallel to the object, or relatively so. Spirit-level attachments are available for some cameras to insure dead-on shots, but I don't find that much fussiness really necessary except when using a wide-angle lens, which we certainly don't need for this work. By the same token, do take care that the gun or the camera is situated in a position that will show only a frontal view for full-length shots, and generally for full-buttstock views as well, though there are exceptions to this. I generally use the trigger guard as a guide to the ninety-degree angle that's desirable here; I position the camera from one side to the other until the guard shows only its thinnest section. If the piece is photographed at an angle on long views, stock architecture will become distorted, and what in reality may be a beautifully sculptural stock may look either withered or swollen with dropsy in the print. Again, there are times when this sort of distortion is entirely permissible. Further, try to position the camera more or less in the center of the piece; for full-length shots, though, I focus on an imaginary center a few inches forward the lock, thereby reducing vertical distortion of the buttstock by lens parallax.



The light-tent in use for photographing the highly reflective surface of a patchbox. The tripod's not straight, you say? Well, that's what a tilting-head tripod is for.

A "standard series" of views might include a full length, full-length buttstock both obverse and reverse (the view including all of the butt to a few inches in front of the lock area), a comb view, a toe view, and various details. I usually shoot more views than just the standard ones, and I like to go for detailed shots that dramatically illustrate the art of gunmaking--not just lots of decoration, but finely-finished surfaces and beautiful inletting as well.

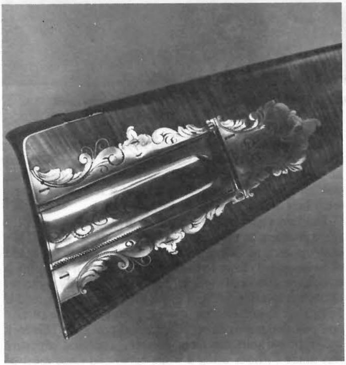
Photographing full buttstock views, and anything closer than that, is where the really important work starts. Where we light a full-length shot for even readings and a bit of high-lighting here and there to show curved

surfaces, the closer views, if they're effective, must show every detail on their surfaces. That means that the use of lighting becomes a matter of fine tuning in order to show both sculptural surfaces as well as "filling" a tricky reflective area such as a shiny patchbox. I'm not going to kid you; you're going to be moving lights around so much that you'll think you're going to grind the legs off the stands. But that becomes second-nature to a gun photographer.

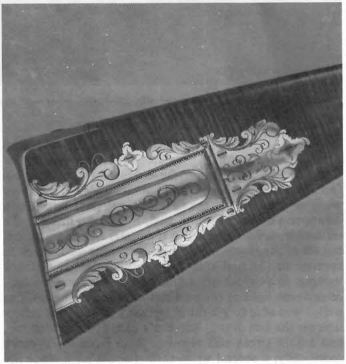
Photographing a brass patchbox, whether in detail or full--buttstock view, is a matter of some consequence. In fact, it's the sort of job that usually sends me down to the corner Quik-Rip for a jug of cheap Chablis. I'd far rather do something simple--minded, like inletting a big piece of pierced sheet-metal in front of a triggerguard. Perhaps that's one reason I stopped making anything but steel-mounted guns some years ago; they ain't so shiny. In any event, the thing must be done. When I set up the fine rifle being photographed here, I suspected that the box would be a *two*-jug job, since the gunmaker, Jim Chambers of Asheville, N.C., had wrought the patchbox lid into an elegant domed affair which provided me with more reflective angles than a goldplated sculpture by Bucky Fuller. How to photograph such a thing, or at least how to run out of film before running out of Chablis? Well, making a decent shot of such a shiny and perfectly-finished surface means that the entire box must reflect as much light as possible, and not reflect dark things like the camera body, your hair, or the room behind you. That means that light must come not only from the side, but must also be placed at a raking angle in *front* of the subject. The side lighting, done with two photofloods, provides the necessary highlighting for, say, the edge of the comb or perhaps to accentuate the roundness of the wrist. The angled front lighting fills the sheetmetal. If the lamps are beamed directly at the patchbox with no diffusion other than the clip-on plastic diffusers, the results are a mess. Some areas will be lit nicely, others will be a howling hotspot, and still others will be dark where the brass is mirroring something dark like the camera. The wood may look fabulous, but the engraving will disappear in a melange of reflection, something quite evident in our first buttstock view here. The solution to this is the front curtain we spoke of during the process of building the light tent; roll that thing down, slit it if it's one-piece, and let the camera lens, and hopefully little else, poke through. Light can then be arranged in front, as the illustration shows, and the lights moved about until a maximum amount of the patchbox shows white reflection. Note in that illustration that a metal box sits upon the floor under the tripod. That's to stand on, and you'll surely need such a thing when using most top-viewfinder medium-format cameras, unless you have the stretch of a Celtics center.

Lamps alone are seldom enough to completely "fill" the patchbox. In fact, it's rare that I'm easily able to remove *all* of the dark reflections; I just try to get rid of as many of them that I can so that the engraving will "read" as it should. In order to chase out most of the remaining dark reflections, I reach inside the tent with what photogs call a "white card," really nothing more than a piece of white poster board cut to a convenient size--maybe a foot square--and while watching the results in the viewfinder, I move that card around until it reflects in the patchbox, obliterating some dark reflection. At times, such a card may be needed on both sides, and that's when you have a helper on hand. Better get *three* jugs...

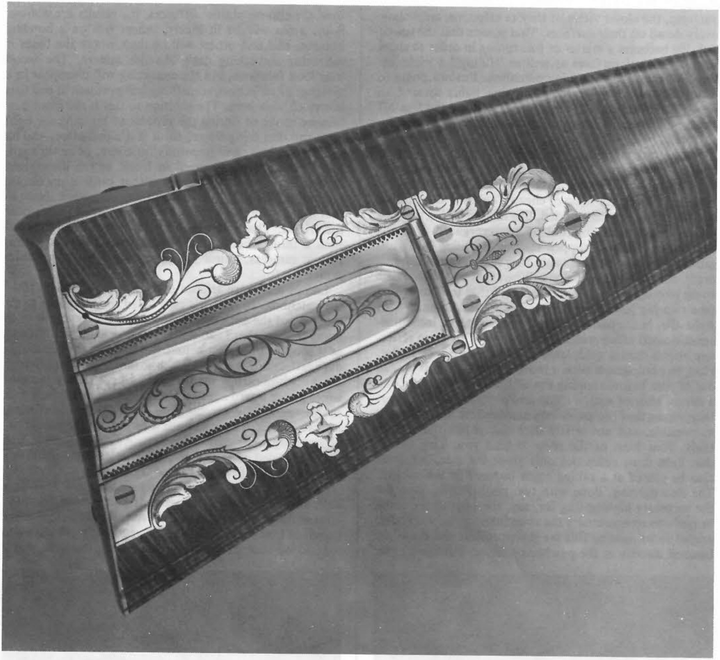
Since all shots should be bracketed, such a f/11 at a half, quarter, and eighth second, you'll need to study your lighting and card positions very closely before every punch of that cable release. That gets pretty sweaty when a good number of views are being shot, because you'll →



A buttstock view shot very badly with direct lighting...



...and correctly, with the front curtain of the light tent down and using a "white card" to diminish stray dark reflections in the metal.



A closeup of the patchbox on the same rifle, a fine specimen of work by Jim Chambers of Asheville, N.C.; note the clarity of engraved detail.

find that anything which requires front lighting will mean that you are working quite close to those hot lamps. That's the reason for using the lens hood I mentioned before. In any event, the second buttstock view shown here was shot precisely like the first, but with the front curtain down, and using one white card. Even so, a line of dark reflection may be seen down the center of the patchbox, but all of the engraving detail shows quite well, much in contrast to the first shot done with straight undiffused lighting. In a tighter shot of the box, where I was less concerned with lighting the architectural form of the stock as well, I was able to get rid of virtually all the dark reflection on the box finial, but Jim's nice dome eluded me, and a dark streak still remains. With more work--more specifically, a second white card--I could have made the entire box "white." But I can live with it; everything is revealed rather well, right down to Jim's three nice silver flowers. Note that all of the patchbox screw slots are aligned with the long axis of the rifle. That's more than just an academic touch; it speaks of a fellow who cares what he's doing.

The two views of the lock presented something of the same problem as the patchbox, but in smaller degree. If a closeup such as this is to be made, then the rifle stand must be pulled closer to the front of the tent if the thing is to be shot with the front curtain down. I usually try to set up decent lighting without using the front curtain, and if I can't get the effect that I want, then I drop the curtain and pull two lamps closer to a frontal position. This lock was shot without the front curtain. The first exposure was made without using a white card, and since most of the lighting was coming from the sides, the lockplate is

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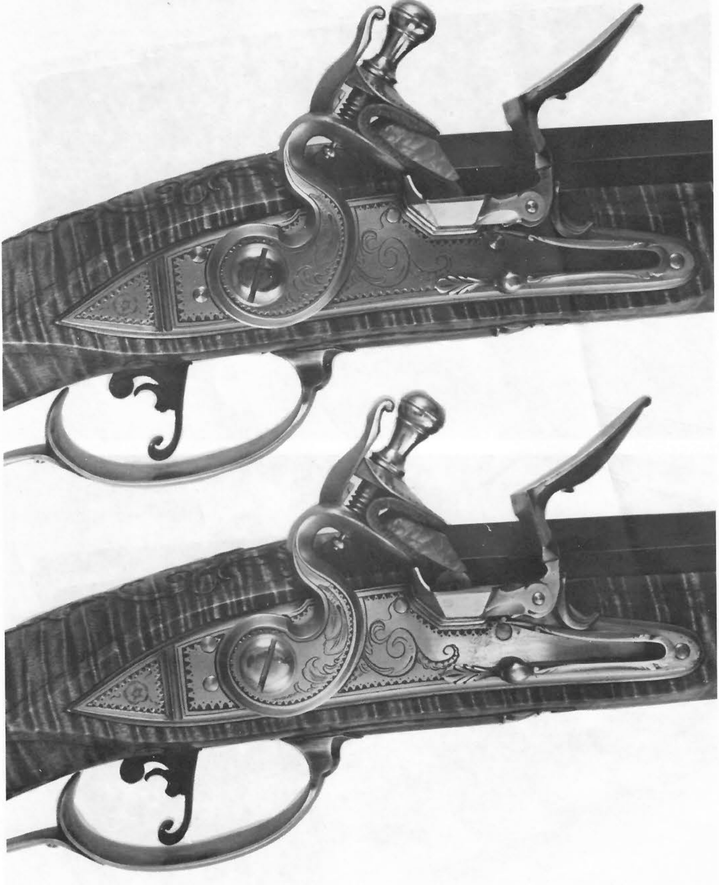
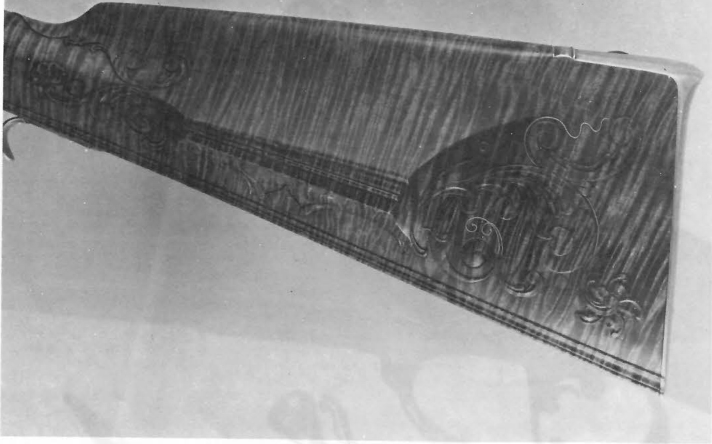
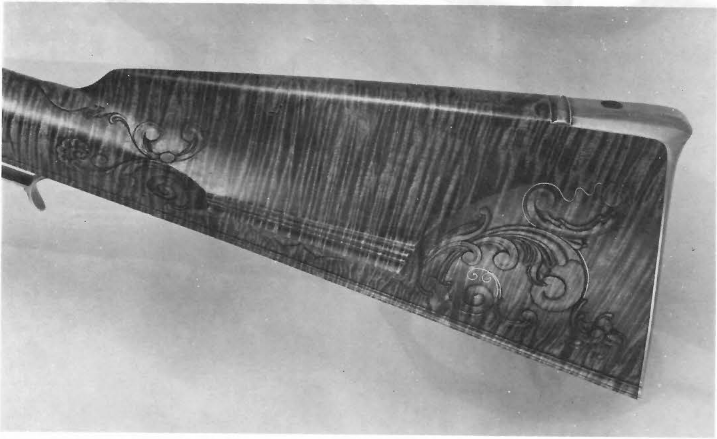
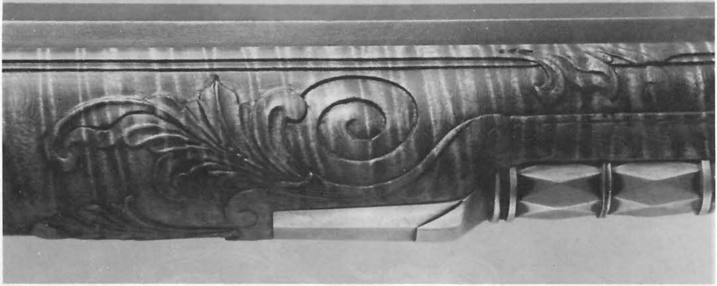


The bright-finished lock of the Chambers rifle shot at f/16, shutter speed 1/2 second, using Kodak Plus-X 220 film. In the top photo the exposure was made without the use of a white card......but in a second shot (bottom) at exactly the same settings, a white card was used to "bring up" the lockplate and reveal engraved detail.





Above the relief-carving appears flat and lifeless, lost in a frenzy of fiddleback figure, but... ...when a raking light is used (bottom), either by turning the subject or moving the lamps, a slight shadow-line is provided for the carving cuts, revealing them boldly.



Close details are dramatic, and particularly important for publication. Here carving at the rear ramrod thimble of the Chambers rifle is lit with raking light.

dark and the engraving muddy. The second exposure was made with a white card, nicely bringing up the engraving. Both were shot at f/16 at speeds of 1 second, 1/2 sec., and 1/4 sec.; it was the half-second exposure which provided the best negative in the bunch.

As you can readily see by now, the business of photographing guns in a useful fashion is a matter of understanding what to do with light, and really making an effort to see what you have in the viewfinder. I can't stress that enough, for what you see is what you get. Lustrous wooden surfaces can be as much trouble to light as shiny metal ones if you're trying to bring up detail. As I've mentioned, some curved or hollowed surfaces need mild doses of "hotspot" at times to accentuate their form, but all of that diffusion you have via the light tent allows you to do that softly. Relief-carved detail, if it is to "read" in a print, must have a tiny bit of shadow around its outlines, and that means that most of the light striking the stock must be raking from one side, with only a small amount of fill from the opposite side. As an example, the first carving detail shown here was shot dead-on, with a 500-watt lamp standing at about the same postion on both sides of the gun. To dramatically sharpen the carving design, all I did was to twist the riflé slightly on the stand, and turn the left-hand lamp slightly away; that took all of 15 seconds' time. In this instance, I wanted to show a bit of the comb as well, but if I'd wanted to retain the straight-on view, I'd have had to move both lamps and probably drop the front curtain as well. This particular view is a good example of where the use of a small f-stop helps with depth-of-field. For this shot, I focused on the top tendril of silver wire inlay behind the cheekpiece. In the viewfinder, the rear edge of the cheekpiece and the buttplate screw were both apparently out of focus, but I knew that on the negative the entire image would appear to be in focus. Cameras with a "preview" selector will allow you to verify that by temporarily closing the shutter to the f-stop setting you've made. I personally never preview a shot, but rather choose a focusing point that is about half-depth on the subject, so to speak.

Closeup "rings" or lens were used for shooting the lock and the view of both the rear ramrod thimble and the breech section of Jim's rifle. Tight, close views such as these speak infinitely more to the quality and complexity of a fine gun than overall views do, and I shoot quite a number of them. I particularly like angled views such as the breech shot, since they capture the contrasting planes and rhythym of a good piece of work so well. The center of interest in that particular picture, of course, is the sideplate and its attendant wire inlay. Had I not used closeup lens, but rather chose to make the shot with the camera further away, I could have brought the entire image into focus. Here, however, I chose to de-emphasize the trigger and trigger guard, allowing them to go out of focus. Had I used the longer shot, though, the fine grain of the film would have allowed me to make the same enlarged view on paper.

Formatting is another thing to consider, especially if you're doing a special shot in color that you hope will make a magazine cover. Since covers are almost invariably a vertical format, that calls for an angled view of your piece of work, so that you can provide the editor with a diagonal view that will both fill the cover and still allow room for the magazine masthead or title block. No, you don't have to tilt the gun to get that angle. Just tilt the tripod head. Of course, you'll feel a little strange and broken-necked trying to see the image in that sloping viewfinder, but it works. Again, full-length shots really don't get the message across for such things; concentrate instead on some nice tight view like Harry Knode used to do on the *American Rifleman.* Use a colored paper for the background, something that provides a good contrast with the color of your stock wood. If you have one, Use a pencil spot to throw a little circle of light on the back-

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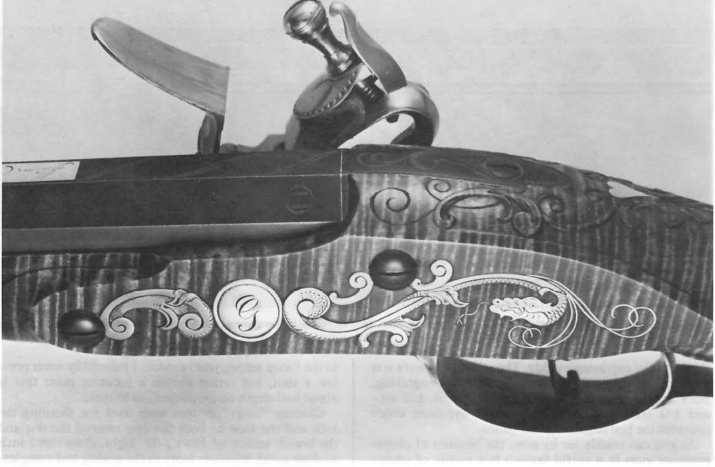

Making shots with small apertures provides sharp images and lessens depth-of-field problems.

ground behind the gun; that's a favorite ploy on the covers of *Deutsches Waffen Journal,* one of the best arms publications in the world.

I really don't use any different techniques for color work, though color film is rather more forgiving in terms of lighting. With black-and-white shots, you must have good contrast with lighting. And the photographic process by no means ends when you've wound the last roll of film off its spool. As Ansel Adams had it, a good negative is only the sheet music; the print is the symphony. For well-detailed, sharp prints with good contrast, you need a sympathetic darkroom operator, and that most definitely rules out having prints made by some giant lab which will "average" everything under the enlarger. For both black-and-white film processing and black-and-white printing, seek out some one-man darkroom that understands what you want. Achieving fine quality prints is frequently a matter of fooling around with exposure times, "dodging" or holding back a slightly underexposed portion of a negative by shading the print a little, or even "burning in," which may even require the use of masks. If you can do your own darkroom work, then you know about all that jazz and are well ahead of the game. As for me, I have neither the time nor the inclination to slosh around in hypos and fixers, and cheerfully shell out when he's ready to make halftone negatives. Further, it's always better to reduce an image than enlarge it, as a general principle.

For both color processing and printing, it's best to send your film off to a big lab that has the equipment to do things right. I frankly depend on Kodak for all color processing, though a local firm does my color printing competently. I can stand to throw away bad prints, but I surely don't want transparencies winding up in the circular file, except for those too dark or too thin. Bracketed

(continued on page 55)

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Photography

(continued from page 26)

exposures usually leave me with one set of transparencies that are just right, and one set that's a little dark. The others get chucked.

I could speak more about lighting angles and a myriad of other technical rot, but I won't. Coming from me, that would be fluff, since I wasn't kidding you. I'm not a photographer and those of you who really are, knew that after the first sentence of last month's installment. I do know what works for

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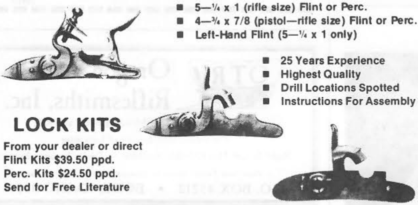

me, though, and if you'll set up a light tent, flood that nice rifle with light, trust your exposures to a professional-quality light meter, and shoot it with a decent medium-format camera loaded with slow-speed film, I know that you can get the same results. As soon as you do, send those doggone prints to me, and I'll stick'em in an article! Go out there and burn film, you hear? And if I can help you with any of this, *do* call me at (919) 748-0275. Just don't send me any of your bills for jug wine. Mine already rival those of the Palace Flophouse and Grille. ●

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