



JAN 2008

DIGITAL ARCHIVE
EDITION

PRECISION ARMS WORKSHOP

AND THE AMERICAN GUNSMITH ARCHIVE

A TECHNICAL JOURNAL OF CRAFT, REPAIR & RESTORATION

01

ARCHIVE ISSUE NUMBER

INSIDE THE ARCHIVE

WORKING THE S&W TOP BREAK .32 SINGLE ACTION MODEL 1-1/2

GETTING THE STORY STRAIGHT • SCOUTING OUT THE REMINGTON SPR 18 RIFLE • TIME MANAGEMENT FOR THE GUNSM...

ORIGINAL METHODS. MODERN ACCESS.

ARCHIVE EDITION 050

DIGITAL ARCHIVE EDITION

Preserved for the bench.

This edition presents the original American Gunsmith editorial work in a modern, searchable layout while preserving its issue, author, and source-page history.

ABOUT THIS EDITION

The article text comes from the original issue and has been reflowed for legibility. Obsolete subscription, ordering, association-service, and house-advertising pages are not reproduced.

Original article images appear only where permission has been confirmed. All other image positions remain visibly reserved so approved art can be restored without rebuilding the issue.

Report corrections or rights information to editor@gunsmithmag.com.



AMERICAN GUNSMITH

DIGITAL ARCHIVE EDITION • JANUARY 2008

ISSUE RECORD

ORIGINAL DATE	January 2008
VOLUME	Archive volume not stated
ISSUE NUMBER	01
SOURCE ID	ag-1d2301616b1ea2a6578b2cdb

DIGITAL EDITION

PUBLICATION	American Gunsmith
EDITION	Digital Archive Edition
ARCHIVE STEWARD	Innovation Network LLC
CONTACT	editor@gunsmithmag.com

Editorial fidelity. Article titles, author attribution, issue relationships, source-page references, and article text remain bound to the archive corpus. Layout, covers, navigation, and conversion notes are newly produced for this edition. Historical statements remain part of the original editorial record.

IN THIS ISSUE

Contents

A complete guide to the searchable editorial work preserved from January 2008.

-
- | | |
|--|--|
| 2 Getting the Story Straight
AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 2 | 3 Scouting Out the Remington SPR 18 Rifle
CHICK BLOOD • ORIGINAL PAGES 3-6 |
| <hr/> | |
| 7 Time Management For the Gunsmith
ARTHUR J. HUNT • ORIGINAL PAGES 7-8 | 9 Solving Problems with .22-Caliber Conversion Units
ROBERT K. CAMPBELL • ORIGINAL PAGES 9-13 |
| <hr/> | |
| 15 Correcting Feeding Problems in Marlin Lever-Action Rimfire Rifles
NORMAN E. JOHNSON • ORIGINAL PAGES 15-16 | 17 Working the S&W Top Break .32 Single Action Model 1-1/2
DAVID R. CHICOINE • ORIGINAL PAGES 17-21 |
| <hr/> | |
| 22 Reader Forum
AMERICAN GUNSMITH EDITORS • ORIGINAL PAGES 22-24 | |

FROM THE ARCHIVE

Getting the Story Straight

BY AMERICAN GUNSMITH EDITORS JANUARY 2008

ORIGINAL PP. 2

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1262-P02-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1262-P02-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1262-P02-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1262-P02-F02

As an editor, I've spent the last 25 years or so trying to successfully most of the time to ensure that my writers have their facts and figures straight. But, when I read a magazine or newspaper article, I'm well aware of the fact that some editors have a better track record for accuracy than others. And nowhere, it seems, do the "others" become more evident than when big-city newspapers report on anything having to do with firearms.

To help make my point, some recent articles in The Miami Herald (brought to my attention by our friends at the NRA) take incompetent reporting to a whole new level. The Herald came out with both barrels blazing on the "assault-weapon" issue and the now-expired Clinton Gun Ban, advocating the ban's restoration.

You'd think with more than 20 years of debate on so-called "assault weapons," and with all the information that's available on the internet and elsewhere, even the laziest

and least competent newspaper reporters and editors could get some of the basic facts right. Right? Wrong.... How about this? According to The Herald, the Glock 19 is an "assault weapon" (huh?) because it's designed to use a detachable magazine.

In another article, The Herald says you can fire 600 rounds in 60 seconds with a semi-automatic AK-47. (Good trick, no?) But the best evidence of incompetence is the claim in a third article that President Bush let the assault-weapons ban "sunset" in 2004. I can almost forgive The Herald's editors for not understanding how a firearm works. But if you're going to call for legislation, shouldn't you have some idea how the United States Government works?

For the record, Miami Herald, the President of the United States doesn't create legislation, and he can't withdraw any legislation already in effect. Moreover, he can't sign a bill unless it's been passed by Congress. And as anyone knows who paid any atten-

tion to the Clinton Gun Ban, it "sunsetted" and rightfully so because Congress didn't vote to extend it. I take full responsibility for any errors that make it by me and into the pages of American Gunsmith.

Who takes responsibility for the errors in The Miami Herald? Apparently, no one.

Microstamping Update In the wake of the Governor's signing of the ill-advised "Microstamping" bill (reported on here last month), STI International announced it has halted all shipments to California and will no longer sell firearms to civilians or law-enforcement agencies in the state. "This law is not going to stop criminals; it's only going to hurt lawabiding citizens in the state," STI's Pauletta Skinner said. "We felt like we had to take a stand against this law." This is the first of what I expect to be many similar announcements.

EDITOR KEITH LAWRENCE TECHNICAL

PEOPLE & COMPANIES

Scouting Out the Remington SPR 18 Rifle

Remington's new single-shot rifle looks like it costs a lot more than it does. Here's what you can and can't do to service it.

BY CHICK BLOOD JANUARY 2008

ORIGINAL PP. 3-6

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P03-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P03-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P03-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P03-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P03-F03. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P03-F03

There's a little village in Russia that's so small you might not find it on your world map. Remington says it took them along time to pin down its location during a worldwide search. As it happens, the inhabitants of this formerly-behind-the-iron-curtain village are highly motivated, very productive, and unusually skilled when it comes to making guns. They make break-open long guns one at a time, and they make them extremely well.

I was very curious to learn the name and location of this village, but, so far, I haven't been able to pry any information loose from

my contacts in Ilion, New York. I can't say that I blame them for keeping mum, however; any gun maker with a direct pipeline to the kind of quality produced in this village would probably keep quiet about it, too.

In future issues, I'll be dealing with some of the other Remington firearms made in "the village without a name." The one I've chosen to initiate the series is about as simple mechanically as a modern rifle can get. The workmanship, however, is at a level you would not expect considering the price of the gun. One example of this quality can be seen on the receiver. Actually, "seen" probably

isn't a good choice of words. There are pins running through the receiver. None can be easily seen if you can see them at all.

These pins have been installed and finished off flush with the outside receiver walls before the metal is blued. The word "installed" hardly describes how tightly these pins fit, and neither does "tightly." If I had to guess at the method these Russian villagers use, I'd say the pins were a shrink fit produced along these lines: Warm pins go into the receiver tightly and then the receiver is cryogenically shrunk to put on the final squeeze. I have never encountered pins as

SCOUTING OUT THE REMINGTON SPR 18 RIFLE CONTINUED

ORIGINAL PAGE 4

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P04-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P04-F01

1 Barrel 2 Sling Swivel Base 3 Sling Swivel Ring 4 Pin 5 Front Sight 6 Extractor Pin 7 Extractor 8 Forend 9 Forend Nut 10 Hinge Screw 11 Hinge 12 Hinge Screw 13 Hinge Screw 14 Spring 15 Catch Housing 16 Forend Catch tight as the ones on an SPR 18. I doubt that a bench-mounted arbor press would even budge them. I know that any attempt to drift them out as you would a normal pin would result in a damaged receiver and the need to refinish the rifle.

The good news is none of the internal pins used to retain components or as pivots have 17 Pin 18 Forend Bushing 19 Receiver 20 Hinge Axis 21 Firing Pin Spring 22 Firing Pin 23 Firing Pin Retaining Pin 24 Locking Lever Pin 25 Locking Lever 26 Locking Lever Spring 27 Locking Lever Spring Pin 28 Cocking Indicator 29 Hammer 30 Hammer Pin 31 Sear 32 Trigger been installed like those receiver pins. Field Stripping As you do this, stop and smell the roses, so to speak. Take the time to notice the fit and finish.

Notice the fluted barrel, adjustable sights, and 11mm scope rail.

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P04-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P04-F02

This is a nice-looking and well-put-together light rifle, Remington SPR 18 Single-Shot Centerfire Rifle (Specifications subject to change without notice) 33 Trigger Pin 34 Trigger Spring 35 Safety Group 36 Mainspring Plunger 37 Trigger Plate 38 Detent Spring 39 Locking Lever Detent 40 Detent Pin 41 Trigger Guard 42 Trigger Guard Screw 43 Stock 44 Stock Screw 45 Washer 46 Buttplate 47 Wood Screw 48 Stock Sling Swivel Base 49 Cocking Indicator Spring 50 Mainspring 51 Trigger Spring Screw 52 Elevation Screw 53 Front Sight Pin 54 Front Sight Base 55 Front Sight Spring 56 Rear Sight Base 57 Rear Sight 58 Rear Sight Washer 59 Rear Sight Screw 60 Extractor Catch 61 Extractor Catch Spring 62 Extractor Catch Pin 63 Safety Button 64 Plunger 65 Plunger Spring weighing less than 7 pounds.

The caliber of the SPR 18 shown here is .308 Winchester. Others that are available include .221 Remington, .243 and .270 Winchester, .30-06 Springfield, and 7.62 x 39mm. At present, the rifle is not offered in rimfire or shotgun configurations, but that might change in the future.

SCOUTING OUT THE REMINGTON SPR 18 RIFLE CONTINUED

ORIGINAL PAGE 5

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P05-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P05-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P05-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P05-F02

The pins traversing the receiver are finished off flush before the rifle is blued. Any attempt to drive them out will cause damage and will require a rebluing job. Okay, once you've finished admiring the rifle, be certain the chamber is empty and place the safety in the "on" position. Swing out the forend catch (#16) and remove the wood from the barrel/receiver assembly with a downward motion. Hold the assembly in one hand and squeeze up on the locking lever (#25).

Tip the barrel down with your free hand until it disengages the receiver. All the rifles in the SPR series field strip and take down in the same manner, and all have those very tight, perfectly blended-in receiver cross pins mentioned earlier. Detailed Disassembly Begin with the forend (#8). Back out the three screws (#10, 12, and 13) in order to easily remove the balance of the parts. The two elements that remain united are the catch housing (#15) and the catch (#16).

They're held together by a pin (#17) which, thankfully, is a very ordinary pin and can be drifted in either direction. Another ordinary pin (#6) retains the extractor assembly (#7). Look at the secondary schematic at the bottom of this page. After removing the

#6 pin, pull out the assembly. The extractor catch (#60) and its spring (#61) are secured by their pin (#62). Drifting out that pin releases both the catch and spring.

Keep these parts under control, or at least hold the extractor assembly over a soft bench pad, so nothing bounces merrily away. After removing the buttplate (#46), select a screwdriver with a shank long enough to reach the stock screw (#44). This screw has a slotted head. The blade of the driver should fit the screw slot well but not be too wide to turn freely in the stock-screw hole. If the blade binds against the wood, it could split it.

Even if you have to grind down the width of the blade to avoid this possibility, the cost of a new driver will be small compared to the cost of replacing a busted-out piece of walnut. The stock (#43) is pulled off the receiver tangs to the rear. Now you can go after more assemblies. The first is the triggerplate (#37). Remove the rear trigger-guard screw (#42).

The front of the guard (#41) is held in a slot in the plate by a stud resembling a "T-ball." Rotate the guard to align the ball with its plate slot, and remove the guard. At the receiver end of the plate is another

screw (#42). The only difference between it and the rear-guard screw is the rear screw head is slotted, while the front screw #42 is a Phillips-head. Back it out enough to push it toward the receiver and remove the detent spring (#38), locking-lever detent (#39), and detent pin (#40). Now cock the gun.

This compresses the mainspring (#50) and reveals a hole in the end of the mainspring plunger (#36). Reach for your trusty straightened-out paper clip or a slave pin of the same diameter. Insert it in the hole in the plunger to capture the spring. If you haven't already taken off the safety group (#35), do it now. Whenever you do it, the group comes out as a unit and should remain a unit ever after. Pull up on the locking lever and pull the trigger to disengage it from the sear.

Drift out the trigger pin (#33) in either direction. Now slow down and take a look at how the trigger (#32), trigger spring (#34), and triggerspring screw (#51) interface. Remembering what you see will be very help- Be careful: All of these parts can be easily lost. 1 Barrel 7 Extractor 60 Extractor Catch 61 Extractor Catch Spring 62 Extractor Catch Pin

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P06-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P06-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P06-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P06-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1263-P06-F03. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1263-P06-F03

ful come reassembly time. Once you’ve burned-in the mental picture, remove the pin, trigger, spring, and spring screw. One of

the plus features of the SPR 18 is a cocking indicator. It sticks up in the rear tang as an easy-to-see signal that the rifle is cocked and

locked. The indicator reacts to a spring (#49).

FROM THE ARCHIVE

Time Management For the Gunsmith

You might assume that your lathe or milling machine is your business' single greatest asset. But no, actually it's your time.

BY ARTHUR J. HUNT JANUARY 2008

ORIGINAL PP. 7-8

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1264-P07-F01. Know the rights holder? Please ask them to contact us.
AG-A6578B2CDB-A1264-P07-F01

It costs money to do business, whether you rent a place and do gunsmithing full time or you work at home part time. And in the gunsmithing business—as in any business—time, of course, is money. Let me explain why your time is so important and why you must learn to manage it carefully. First off, you're only going to live so long. Consequently, you have only so many productive hours in your time bank.

If you evaluate your business (and if it is a business), you'd better have a time-to-income ratio that shows a profit. Consequently, you must keep careful daily records of actual billable hours and part sales in order to have an instant picture of whether or not your time is being converted to dollars sufficiently to make this all worthwhile. Let's examine a hypothetical eighthour day. If you assume an average of \$35 per hour, that would show an income of labor alone of \$280 a day or \$1,400 per week.

Not bad, provided you have the business, and don't stop working to talk to customers (which you must do sometimes). In previous articles, I've talked about the gunsmith's "mystique." By my definition, mystique is part of the game—otherwise known as public relations—and talking is part of this. How then do you include the talking in the profit picture? There are several ways. First, keep the storytelling to a minimum. This is hard to do.

What's easier to do is to extend the charges for the job to include both the time spent talking and the time spent doing the job. If

four jobs come in that should take an hour each, but you spend an additional hour in talking, you've lost \$35 if you charge only for the actual work. You can't make this up unless you understand the situation and do one of two things: Either charge more for each job so that you get paid for the whole five hours at minimum—or stop talking.

Another way to solve this problem—one that I've found to work well for me—is: Don't open until noon. That way, you can use the morning to work without interruption, and then spend the rest of the day working as well as talking as necessary to anyone who comes in. The difficult part of the gunsmithing business is that a person with a broken gun is like a sick person going to the doctor. He's asking for help. He wants to tell you all his troubles, just as he would with his physician—especially if he's a new customer.

You have to listen and hold his hand for awhile, because, after all, he's turning his beloved gun over to you. It's like he's putting himself in the hospital. He has to be assured of your competence, and he has to soak up some of your mystique. In other words, he has to feel confident that you can work the kind of magic it will take to restore his gun to perfect health. So, you've lost 15 minutes. Now make it up.

This can only be done by building some talking time into your hourly rate or by adding the talking time to the time you spend on the actual work. Don't get carried away with the idea that your minimum of \$35 (or more) has to be what you go by.

What controls the price of repairs is the value of the job. If this job takes 30 minutes and you talked for 15 then your one-hour minimum charge will cover it. Remember, once you fix a gun for \$50 or \$75, it's not coming back—not for that particular repair anyway.

You have to constantly look for another job, and every repair job you do is one less that remains to be done. Try not to give estimates on an old gun particularly. (If you do, refer to my article in the October 07 issue.) If possible, tell your customer you can't give him an estimate until you have gotten into it, and be sure to have your minimum rates posted on the wall.

If you have to call the customer and tell him he is in for three hours worth of work and he tells you to forget it, you're covered by your minimum and your time has been protected. None of this is being dishonest, just realistic insofar as being paid for your time. Something else that's important: Don't take guns apart in front of your customer. You'll destroy the "mystique." Tell him you're busy and will check it out later and then give him a call.

If he can't leave the gun, fine; he was probably not serious about spending the money to repair it anyway. What I'm trying to do here is to help improve the gunsmith's lot in life so that when deer season comes around, he has the money to go hunting himself—rather than just helping other people to hunt. Or so he has the

TIME MANAGEMENT FOR THE GUNSMITH CONTINUED

ORIGINAL PAGE 8

Bluing'Profitable or Not? While we're on the subject of making a profit, let's look at a service that's long been touted as one of the big moneymakers for gunsmiths. In looking at bluing in particular, we can examine some greater truths that should be understood if the gunsmith is to know whether or not he's operating a profitable shop. Most gunsmiths work for an hourly rate, and we price most jobs at our hourly rate.

There are typical shop rates that vary from area to area depending on the economic climate, and that pretty much dictates what you can charge for rebluing. If gunsmiths ran their businesses like a typical manufacturing company, prices might be quite different. A manufacturer would take into account the original price for tanks, burners, stands, buffing equipment, and would amortize these costs over perhaps a three-year or five-year period.

He would then arrive at a cost for water, gas, salts, and time for buffing, disassembly, and reassembly. These costs would then give him a "floor cost" per job, and he would add his markup to this. This markup would cover overhead and profit. I don't believe that many small gunsmithing shops ever do this, and if they did, the price would be so high they probably wouldn't get many bluing jobs.

In fact, I'm willing to bet that hardly anyone keeps track of the number of guns that can be blued with 50 pounds of extra cash to take the wife out to dinner once in awhile—which can be a lot more expensive than a day of hunting. My writings have been addressed primarily to the owner of the small full-time shop. These small shops make up the bulk of the gunsmithing business in this country. But I'm not ignoring the part-time operator, of which there are thousands.

Most of salts, let alone how long a buffing wheel lasts or how much compound is used. Nevertheless, you have costs associated with bluing. Let's take an example. Suppose you sell a bluing job for \$125. If you figure 20 minutes to a half hour for disassembly and the same time for reassembly, you've used up say \$35 of the \$125 charge. We now have \$90 left.

It is not out of reason to assume you will spend at least two hours buffing, that's \$70 more, leaving \$20 for the costs of salts, gas, and amortizing your equipment. After all, you can burn out a buffing motor and you certainly wear buffing wheels out. I realize that it's impractical for the small shop to take the time to keep records like a big manufacturer does. But you must admit that the situation I just outlined doesn't show any profit.

Of course, if you're happy with collecting three hours at your labor rate, then there's no need for further concern. As I see blue jobs, they represent an opportunity to obtain several hours at your established labor rate, but I think we can forget about the idea that bluing is a big money-maker for the gunsmith—unless you can get a lot more than the typical prices charged. Keep in mind that there's always a danger in giving someone a set price in advance, even for something as routine as a bluing job.

If what I have to say can still be of help to the part-timer. If you're a part-time gunsmith, you probably have another job and you're trying to augment your income. Again, the same rules apply. There's no point in working nights and weekends unless you can make your time count and unless you're really adding to your income. And you must make a profit if you're planning to eventually you miscalculate the

time required for metal preparation's as it takes three hours of buffing rather than two't hen you lose.

You can estimate the time necessary for disassembly and reassembly pretty accurately, but looking at a gun is never going to tell you how much actual labor is going to be required for a bluing job. Suppose you based your price on two hours of metal preparation. That's fine, but you can't just stop buffing at the end of two hours if the metal isn't perfect. That won't cut it; this is a job that has to be done right. What's the answer?

There are two: One is to be so expert in evaluating the time required to do the job that you can properly price it' which is virtually impossible. Or you can set your prices to cover yourself and get a return that keeps your hourly rate up. After all, if you quote \$75 for a bluing job and I quote \$150, I only have to do half as many jobs as you do to make the same amount of money. While we're on the subject, let me pass on another suggestion about bluing.

Years ago, I stopped offering different grades of bluing at different prices. I do one grade of bluing only't he best job I can do' and at one price only'a price that's high enough to ensure I'll make a profit. This way, my customer is happy with the job, and so am I. If someone wants a cheap bluing job, I sell him a bottle of cold blue. quit the day job and go full-time.

Of course, if you already have lots of money and you're the type of hobby-gunsmith who would rather spend your spare time talking instead of working, then my words are wasted. If you're not, then take a simple sheet of paper, write down the details of each repair, and at the end of every week determine how much profit you're making'or not making. I

PEOPLE & COMPANIES

Solving Problems with .22-Caliber Conversion Units

Owners of M1911 pistols seem to encounter problems frequently with .22-cal conversion kits. Here's what you need to know to come to the rescue.

BY ROBERT K. CAMPBELL JANUARY 2008

ORIGINAL PP. 9-13

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1265-P09-F01. Know the rights holder? Please ask them to contact us.
AG-A6578B2CDB-A1265-P09-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1265-P09-F02. Know the rights holder? Please ask them to contact us.
AG-A6578B2CDB-A1265-P09-F02

Not long ago, I tested an Arcus Model 94, a 9mm pistol based on the Browning Hi-Power. The pistol is robust, accurate, and reliable, and as Chick Blood pointed out in his article in the November 07 issue, many Hi-Power parts, including magazines and grips, will fit the pistol just fine. But the Arcus' slightly heavier frame—an advantage in hard use—would not accept a standard Hi-Power .22-caliber conversion. I remarked on this fact to a friend at the range and he replied: “The Colt is no better.

I have a .22-caliber conversion unit that won't work on any of the seven 1911 frames I have tried it on. I didn't pursue the matter further with my friend, but I couldn't help but wonder what type of frames he was using. I doubt they were Llama or Star products but probably the Colt and Springfield and Kimber pistols I usually spotted in his hand on the range. Once again I consulted sheaves of notes dating back to the 1970s.

I carefully reconciled my experiences with his and as is sometimes the case the most pertinent experiences were the latest. As it turns out the .22 caliber conversions for the 1911 are neither troublesome nor trouble free. They simply require attention to detail. First, let me tell you why I think these conversions are a good

thing, and why the gunsmith should be familiar with them. Using inexpensive .22-caliber Long Rifle ammunition is an economical aid in marksmanship training.

Practicing without the distraction of recoil and the expense of centerfire ammunition—but on the same frame—is a considerable advantage. These conversions are great for breaking in new shooters. While there have been conversions made for other pistols including the German Luger, the best known is the Colt. Most of us are familiar with the original Colt .22-caliber conversion unit.

It uses a steel slide and a “floating chamber.” Of course, convincing it works with GI-type 1911s and the Colt Series-70 pistols, but will require modification to work properly with the firing-pin block of Series-80 pistols. A steel slide to recoil with the momentum created by the little .22-caliber rimfire cartridge was a considerable problem to overcome. The floating chamber concept reportedly owes much to the M1 carbine. The chamber actually acts as a type of piston that gives impetus to the slide in recoil.

I'VE HEARD IT SAID THAT THE FLOATING CHAMBER WAS USED TO SIMULATE THE

SOLVING PROBLEMS WITH .22-CALIBER CONVERSION UNITS CONTINUED

ORIGINAL PAGE 10

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1265-P10-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1265-P10-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1265-P10-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1265-P10-F02

recoil of the .45 cartridge, but I don't believe that. I'm pretty confident that the real reason this design was implemented was to give the slide a bit more momentum for surer cycling. The floating chamber is basically a model of piston power that jump-starts the steel slide. The early versions are well made of good material. The Colt usually locks open on the last shot, which is not the case with many of the other units.

There have been reports of heavy leading of the chamber, causing malfunctions in as little as 50 rounds. The chamber will simply lead up and the piston movement is lost. The use of high-velocity .22 ammunition is required with the Colt unit, so it seems to me that rather than conventional leading there is actually some shaving of the bullet in travel. This results in a much "dirtier" action than other .22 pistols, the Ruger Standard Model or Browning Buckmark, for example.

But there are procedures that will help to eliminate or at least minimize this problem. By using modern high-velocity ammunition with plated bullets that did not exist when the Colt conversion was designed, function can be improved. For a variety of reasons, the hyper-velocity CCI Stinger ammo usually functions well, and will give up to 250 rounds before cleaning is man-

dated. The plated bullet is one reason, but the effect of the hypervelocity load is another.

I can't prove it, but I think the bullet exits the chamber before the piston action occurs. This seems logical anyway. In any case, Stingers work great in the older conversions. Another issue we should discuss is cleaning. Chances are you've had an impossibly dirty conversion brought into your shop. Again, I can't prove it, but I'm guessing that a Ruger automatic isn't as dirty after 500 rounds as a Colt conversion is after 100. The conversion must be stripped and cleaned and cleaned some more.

Gun Scrubber works to loosen the chamber up, but then it's elbow grease and lots of it. The next procedure illustrates that we can't be hopelessly tied to tradition or to purpose-designed gun lubricants. While they usually work as designed, in the field, I've used just about everything including a Chapstick to lubricate a balky handgun. The quality synthetics certainly work well, but at times experimentation is the key to innovation.

For example, I once carefully cleaned and stripped an original Colt conversion and used STP Oil Treatment to coat the chamber and piston. Believe it or not, coating the chamber and moving parts with STP

greatly improved the function of the Colt unit, and reliability was extended to perhaps 300 troublefree rounds. Ammunition-related problems are common with these conversion units. Another reason the Stinger works is the ammunition is of high quality, originally designed to function well in automatics.

Lets face it, a lot of our customers will buy whatever .22-caliber ammo is cheapest, which may not be a problem with a revolver. If you test the strength of the crimp holding the bullet, you'll find a wide variation among the domestic and foreign-made brands. Simply hold the cartridge between your fingers and wiggle the bullet. The crimp must be tight or the bullet will wriggle and will not feed and chamber properly in the .22 conversion. Lead will be shaved on feeding.

Once again, it's up to the gunsmith to advise shooters to use quality ammunition. As for interchangeability, the original Colt unit works reliably with GI 1911s regardless of manufacture, the Colt Series-70, and most Springfield The S&W uses a firing-pin block that works off the grip safety; the Colt has a trigger-activated firing-pin block; and the Taurus uses anew version of the firing-pin block. All will work well with the Kimber or Ciener conversion unit.

SOLVING PROBLEMS WITH .22-CALIBER CONVERSION UNITS CONTINUED

ORIGINAL PAGE 11

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1265-P11-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1265-P11-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1265-P11-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1265-P11-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1265-P11-F03. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1265-P11-F03

The use of a lightweight aluminum slide allows it to function with .22 rimfire ammunition. This is the Platinum version, fitted with adjustable sights. Government Models. Although the conversion will fit the slide, it will not work properly with the Series-80s firing-pin block. You can get around this problem, however, without modifying the pistol. The lifter bar in the Series-80 simply needs a groove in the slide to ride in, which can be milled into the original Colt conversions.

This slight modification will not affect the performance of the unit on other Colt pistols. The GI .45s are well made and more consistent than many realize, and the Colt conversions seem to be of loose enough tolerances to fit most Colts, Ithacas, Remingtons, and Springfield pistols. Original magazines are no longer made, but Metalform produces a quality version of this once hard-to-find magazine. Accuracy with the Colt .22 conversion is not in line with a quality .22 target pistol.

It's adequate and little more, although the CCI Stinger loads seem to produce better results than any ammo I've tried. If the shooter has a dedicated frame he wants to use for the .22 conversion and wants you to tighten it up, standard slide-tightening techniques work just fine with the Colt's steel slide. Just be certain he plans to leave the conversion on that frame. Kimber pistols impress me, perhaps more and more as time goes by. Accuracy and reliability are excellent.

The frame rails and slide are purposely on the large end of specifications and tolerances, resulting in a good tight fit for a production pistol. This fit produces a pistol that may or may not accept a .22-caliber conversion unit. (Sometimes the slide is so tight it drags with a .22 conversion unit.) Conversely, Kimber's own conversion unit fits all Kimber pistols and seems to fit all other 1911s well.

The first run of Kimber conversion units did not have the clearance cut for the Colt/Para-Ordnance firing-pin block, but the conversions Kimber makes now have this cut. The modern conversions such as the Ciener are

made of aluminum. The Wilson Combat magazine is slightly more open, which seems to promote feeding reliability. The slide is light and recoils as a standard blowback, neatly solving the problems of convincing a heavy steel slide to recoil with .22-caliber energy.

These slides have proven durable and the Ciener in particular has proven to be accurate and reliable. Just the same, there are problems encountered occasionally. I will mention once more that, even with the aluminum-slide conversions, the most common malfunctions are ammunition related. Sometimes the slide is just a bit too tight on the frame. This results in drag that slows the cycle down. The only thing to do here is to polish the slide' very carefully. Aluminum, of course, has different properties than steel.

With a too-tight slide and frame combination, I've filled the slide grooves with Brownells lapping compound and worked the slide slowly over the mating frame a couple of hundred

RIFLES

Correcting Feeding Problems in Marlin Lever-Action Rimfire Rifles

Proper cycling and meticulous maintenance is required to avoid a little-known safety issue with the lever-action rimfire rifle.

BY NORMAN E. JOHNSON JANUARY 2008

ORIGINAL PP. 15-16

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1266-P15-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1266-P15-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1266-P15-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1266-P15-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1266-P15-F03. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1266-P15-F03

Before we get into the causes and cures of feeding problems on the tube-fed Marlin rimfires, I should start with a few cautions. First, with any exposed-hammer-style rifle, whether it's cocked on action opening or by thumb, careful practice must be followed in letting the hammer down to the safe position on a loaded chamber. Second, although 22 LR rifle. Here, the finger lever and bolt are closed and the hammer is let down in the partially cocked, safe position.

A cartridge is seen in the carrier ready to be chambered as the lever moves the bolt forward. The cartridge is held essentially by gravity in the grooved carrier as it is released by the cartridge stop. Note how the hammer is cocked by the rearward thrust of the bolt.

With its unique milled lock system, the sideplate, which holds the stock, is retained via the coin-slotted sideplate screw. It's commonly assumed that jacking the finger lever repeatedly will empty all the cartridges from these rifles, cartridges can hang up during working of the lever and feeding operation. Therefore, the mag tube might not be empty even if the lever is worked several times after seeing what is assumed to be the last cartridge being ejected from the side ejection port.

On several occasions, customers have brought me these rifles after discovering a cartridge hang-up after "clearing" the rifle by repeatedly working the finger lever. And I have personally experienced this problem with at least two Marlin Model 39 rifles. The latest one was a Model 39 Century Limited

made in 1970, which I'm using in preparing this article. This rifle has had less than two full boxes of cartridges put through it, and the action is like new in every respect.

I was using some Federal Hi-speed .22 Long Rifle ammunition in the rifle when I discovered the problem. I had loaded 10 rounds into the magazine and fired five. I then worked the lever five times but only four cartridges were ejected. I repeatedly worked the lever, but the fifth cartridge was not loaded or ejected. Then, as I viewed the open action while working the lever again, I saw the last cartridge being chambered.

This caused me great concern—especially since this was not the first time I'd encountered this problem. In fact, I made mention of this condition in an article in Amer-

CORRECTING FEEDING PROBLEMS IN MARLIN LEVER-ACTION RIMFIRE RIFLES CONTINUED

ORIGINAL PAGE 16

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1266-P16-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1266-P16-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1266-P16-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1266-P16-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1266-P16-F03. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1266-P16-F03

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1266-P16-F04. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1266-P16-F04

The bolt is nearly fully open, showing a partially chambered round. The cartridge stop is shown holding a cartridge in position in the magazine. I can Rifleman as far back as February 1978 when I first encountered this trouble. Searching for Cartridge Hangup And Feed Problems A careful observation of the Marlin 39 rimfire reveals no apparent mystery in its design or overall operation.

With the magazine loaded and the bolt closed, side pressure from the bolt depresses the cartridge stop, allowing a loaded round to rest against the bolt tang ready for loading.

As the lever is lowered 45 degrees from closed, the bolt opens sufficiently for the rifle hammer to be cocked. With further lever travel, at 65 degrees the bolt is fully open. Backward and upward The cartridge is thus chambered and the bolt tang is shown depressing the cartridge stop for another round to be released into the carrier.

For proper cartridge feeding and function, all parts must be clean and the action free of debris. Upon opening of the lever, it will again engage and open the bolt as seen in the photo at the left. This is a unique feature of the

Marlin Model 39. movement of the lever then causes the carrier to elevate the cartridge and the internal tip of the lever pushes the cartridge into position where the bolt can bring it to full chambering. The forward cam on the lever serves as a bolt-locking lug at full closing.

This brings me to my third caution and the crux of the problem that both the gunsmith and the gun owner must be aware of. With manipulation of the Marlin's finger lever, it's possible to work the lever just enough to cock the (continued on page 21)

CORRECTING FEEDING PROBLEMS IN MARLIN LEVER-ACTION RIMFIRE RIFLES CONTINUED

ORIGINAL PAGE 21

hammer and extract and eject a cartridge; but unless the lever is fully opened and an audible click is heard releasing anew cartridge into the carrier, anew shell won't be chambered. It may be reasonable for shooters unloading this type of rifle to believe that all cartridges are cleared from the action, when this is clearly not always the case. Opening the finger lever and initiating a rearward bolt movement of 0.861 inch is sufficient to fully cock the hammer.

But if the bolt is closed from this position the rifle will not chamber a cartridge ready to be fired. A complete opening of the bolt via the finger lever is required for entry of a cartridge into the carrier for loading. This is so critical that a total bolt opening of 1.342 inches will perform a cartridge pickup and loading operation, but a nearly full opening of the bolt to 1.335 inches will not. This is one reason why it is often assumed the rifle is empty when it is not.

Further, a complete closing of the bolt is required for a cartridge to move freely past the cartridge stop against the bolt tang in preparation for loading the cartridge. The slightest amount of dirt or debris at the front of the bolt and chamber area will cause closing problems. Failure to fully close the finger lever will result in the same malfunction. Again, just a few thousandths of bolt travel makes a significant difference. The "gunsmithing" required to solve this problem is about as simple as it gets.

Disassembly and cleaning of the magazine tube, spring, and plunger will usually do the trick. This should be followed by a light coat of noncongealing oil as a wipe on the internal parts. As the magazine is serviced, you can also stretch the spring a couple of inches to help provide additional force on the cartridges inside the magazine. This is especially helpful as the last few cartridges are pushed into the carrier at the extreme length of the compressed spring.

A severely weakened, damaged, or broken spring should be replaced. I would also advise owners to avoid leaving the magazine tube fully loaded for extended periods of time, as this will compress the spring and can weaken it. Conclusion The Marlin lever-action rimfire rifles like the Model 39 are deservedly popular because they're fun to shoot. But they must be cycled properly to avoid incidents of cartridge hang-up with a resultant failure to chamber.

Your customers who own these rifle should be cautioned that complete opening and closing of the finger lever is absolutely necessary for safe operation. In addition, the rifle should be taken down regularly, cleaned, and inspected. And finally, you might mention that the use of heavily waxed bullets, particularly at cooler temperatures, means that cartridge feeding and function must be even more closely observed. I

PISTOLS

Working the S&W Top Break .32 Single Action Model 1-1/2

With almost 100,000 manufactured just prior to the beginning of the 20th century, the Model 1-1/2 was the first of many small Smith & Wesson five-shot revolvers.

BY DAVID R. CHICOINE JANUARY 2008

ORIGINAL PP. 17-21

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P17-F01. Know the rights holder? Please ask them to contact us.
AG-A6578B2CDB-A1267-P17-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P17-F02. Know the rights holder? Please ask them to contact us.
AG-A6578B2CDB-A1267-P17-F02

Smith & Wesson's smallest topbreak revolvers were built on what was known as the Model 1-1/2 frame'S&W's smallest size' and began in 1878 with the introduction of the .32 Single Action el 1- 1/2. This five-shot revolver in S&W centerfire caliber was b along the general lines of the popular .32 rimfire New Model No. 1-1/2 tip-up revolvers. The .32 centerfire Model 1- 1/2 retained the basic size, appearance, and bird's head grip of the .32 rimfire on the new hinged frame.

This tiny revolver was the only small-framed, .32-caliber, single-action topbreak revolver ever offered by Smith & Wesson. The .32 Single Action was a unique design in that it "hit the ground running"; that is to say, the initial design was so completely functional that it required no drastic improvements.

By using many of the design features and improvements already gleaned from and incorporated into their larger single action models, Smith & Wesson found no need to

make major engineering changes throughout the .32 Single Action's entire production from 1878 to 1892.

This model used an innovative rebounding hammer, a feature shared with its big brother, the .44 Single ew Model No. 3which, by was also introduced in 1878. mer rebounds back away from the cartridge primer by virtue of a combination of main-spring tension and a carefully designed stirrup arrangement that actually places a reverse tension on the hammer when it's all the way forward. These guns have no half-cock position, however; the hammer should rebound just enough to place it in a "safety position" after firing.

As with many older firearm designs, the safety position should never be relied on as being truly safe. Accepted practice dictates that the only safe way to carry one of these older revolvers is with the hammer down on any empty chamber. The grip of the .32 Single Action was of the rounded "bird's head" shape, and the revolvers were offered with checkered hard rubber grips through the majority of production.

The company manufactured almost 100,000 of these little revolvers with barrel lengths of 3, 3-1/2, 6, 8, and 10 32 Single Action is a pocket-sized, topbreak fiveshot revolver in .32 S&W caliber. It was introduced in 1878 and featured an advanced rebounding-hammer safety system. inches, although the three longer lengths are rare. Like many modern revolvers, the .32 was offered in both nickel-plate or blued finish.

As with almost all S&W revolvers, the hammers were color-case hardened and the barrel catch was blued're gardless of the gun's finish. Operational Tip The .32 Single Action uses a triggeractuated cylinder stop. That is, as the trigger moves it affects whether or not the cylinder is locked. When the trigger is toward the rear the revolver is at full cock.

When the trigger is pulled to fire the weapon or when the hammer is all the way down, the trigger is not in contact with the cylinder stop; so the stop, which is under spring tension, rises to lock the cylinder. When

WORKING THE S&W TOP BREAK .32 SINGLE ACTION MODEL 1-1/2 CONTINUED

ORIGINAL PAGE 18

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P18-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1267-P18-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P18-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1267-P18-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P18-F03. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1267-P18-F03

the hammer is pulled back slightly as it is cocked, the trigger sear falls into a valley in the hammer, allowing the trigger to move forward. As it does, it contacts the rear of the cylinder stop, causing the stop to rock downward and release the cylinder to rotate. Disassembly Instructions 1. Before we begin, let's check to be certain the cylinder is unloaded. Lift up on the barrel catch (#25), and tilt the revolver barrel all the way down to open the action.

This exposes the rear of the cylinder for loading and unloading. Remove any cartridges to a safe location before proceeding. 2. No tools are required to remove the cylinder, but the barrel must be opened. Hold the barrel catch so it's in the up position, and notice the lug on the underside of the barrel catch. This was designed to hold the cylinder from moving backward during extraction. Now, pull the cylinder (#2) toward the rear, while at the same time turning it in a counter-clockwise direction.

The cylinder is secured to the base pin by a large, short, inter- 32 Single Action is loaded. rupted type thread, and this action will enable the cylinder to be withdrawn off the base

pin (#5) toward the rear. Disassembly tip: Use the proper size screwdriver blade for the screw you're removing. Damaged screws are a sure sign the gun has been in the hands of an untalented amateur.

Of course, the screwdriver blade will fit the screw slot much better if you will take the time to go into the slots with a dental pick to scrape out any accumulated grease, dirt, and rust before attempting to remove them. 3. To remove the barrel, start with the barrel in the open position, and unscrew and remove the joint pivot screw (#15a) from the left side of the hinge on the frame (#3).

Then use a small hammer and an appropriate straight punch to drive the joint pivot (#15) out of the frame toward the right side. For reassembly later, be sure to make note of the witness mark on the joint pivot and its corresponding witness mark on the right hinge ear of the frame. The two must be aligned for correct assembly. The barrel (#1) is now loose, and can be lifted up and out of its joint with the frame.

The next step is to find the extractor cam assembly (#4) This assembly is located between the ears of the barrel hinge. The ex-

tractor cam can now be pulled down and out of the barrel. Make note of the correct positioning of the extractor cam for later reassembly. Reassembly tip: The extractor cam is made up of three parts. If you decide to disassemble the extractor cam, note the direction the spring is facing't he bowed center always faces down.

If you put it in upside down, the automatic extractor may fail to function properly. 4. The Smith & Wesson's grips (stocks) and the sideplate are removed by first unscrewing and removing the stock screw (#8). Now carefully lift the stocks (#23 and 24) from the frame. If the grips don't come off easily after removing the screw, carefully slip the edge of a single-edged razor blade between the grip and the frame, somewhere down near the butt.

Carefully work the blade in between the metal and the grip until you can twist the blade slightly, gently lifting the grip away from the gun. Next, unscrew and remove the two sideplate screws (#10 and 12). Working over a padded surface, turn the

WORKING THE S&W TOP BREAK .32 SINGLE ACTION MODEL 1-1/2 CONTINUED

ORIGINAL PAGE 19

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P19-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1267-P19-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P19-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1267-P19-F02

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P19-F03. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1267-P19-F03

It has rebounded so the firing pin cannot contact the primer, and the trigger has slipped onto a shelf, helping to hold the hammer to the rear. frame over on its side and hold it by the hinge area with the sideplate facing up. Use a plastic mallet to strike the grip frame a sharp blow or two. This shock will cause the sideplate (#7) to jump up and out of its seat in the frame for safe removal. Always use shock; never attempt to pry off a sideplate.

Prying can seriously damage the sideplate and possibly the frame. 5. The next step is the removal of the mainspring and hammer. Using a pair of spreader-type pliers, compress the top of the mainspring (#22) which will allow you to rotate the hammer stirrup (#28) forward and out of its seat between the two ears at the top of the mainspring. Next, use a

screwdriver to loosen the strain screw (#13) located in the bottom-front of the front grip strap of the frame.

You can now withdraw the mainspring out from the frame side. Now carefully rotate the top of the hand (#28) to the rear using a small screwdriver as a lever. While you're holding the hand to the rear, pull the trigger (#26) and hold it to the rear. The hammer (#6) should now be rotated until it is about half-way back. At this point, it can be carefully pulled (and wiggled) upwards, off of its hammer stud (#14) and then taken out of the frame. Note: Some early models did not use a strain screw.

Instead, to tension the mainspring, these used a small cam that fit in between the mainspring and the frame. To remove this

cam, the mainspring can be bowed The screw and plate must be removed in order to access the cylinder stop and its spring. toward the rear using spreader-type pliers, and then the cam can be turned 180 degrees and lifted out. 6. Removal of the stop plate and cylinder-stop spring begins with unscrewing and removing the stop-plate screw (#11).

This is located on the frame-bottom, between the trigger and the hinge joint. Hold the frame upside down by the grip area, and while holding the trigger to the rear, strike the frame just behind the hinge joint several sharp blows with a plastic mallet. This shock should cause the stop plate (#27) to jump up out of its seat in the frame. Never attempt to pry off a stop plate, as you can damage its precise fit with the frame. Once the stop plate has come loose,

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P20-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1267-P20-F01

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1267-P20-F02. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1267-P20-F02

Smith & Wesson .32 Single Action Top-Break Model No. 1-1/2 .32 S&W Revolver 1 Barrel 2 Cylinder 3 Frame 4 Extractor Cam Assembly 5 Base Pin 6 Hammer 7 Sideplate remove it and the cylinder-stop spring (#18), being sure to note their correct positions for later reassembly. Disassembly tip: The use of “cuptipped” pin punches of the appropriate size for removing these roundhead pins will prevent harming the pins, leaving them in perfect condition for reassembly.

The cup-tipped punch is also less likely to slip off the pin and damage the gun’s finish. 8 Stock Screw 9 Barrel Catch Screw 10 Sideplate Screw (short) 11 Stop Plate Screw 12 Sideplate Screw (long) 13 Strain Screw 14 Hammer Stud 7. Remove the cylinder stop and the trigger next. Using a small hammer and a cup-tipped pin punch to prevent damage to the frame, drift out the cylinder-stop pin.

This pin is not shown on the exploded drawing, but it’s the forward one of the two pins that pass through the frame from side to side. The cylinder stop (#30) is now

loose and can be pushed out toward the bottom of the frame.

You can use 15 Joint Pivot 15a Joint Pivot Screw 16 Front Sight 17 Barrel Catch Cam Spring 18 Cylinder Stop Spring 19 Trigger Spring 20 Handspring 21 Extractor Spring 22 Mainspring 23 Stock (left) 24 Stock (right) 25 Barrel Catch 26 Trigger 27 Stop Plate 28 Hammer Stirrup 29 Hand 30 Cylinder Stop 31 Barrel Catch Cam 32 Extractor 33 Extractor Post Not shown: Cylinder Stop Pin Front Sight Pin Hand Spring Pin Stirrup Pin Trigger Pin a small punch to push the cylinder stop down through its window in the frame, under the area where the cylinder rotates.

Drift out the trigger pin (not illustrated) using the small hammer and cup-tipped pin punch. This is the rear one of the two pins that pass through the frame from side to side. With the trigger pin removed, the trigger (#26) is now loose and can be pulled out

WORKING THE S&W TOP BREAK .32 SINGLE ACTION MODEL 1-1/2 CONTINUED

ORIGINAL PAGE 21

through the bottom of the frame along with its attached trigger spring (#19). The trigger spring is simply pressed into place in a slot located at the lower-rear area of the trigger. 8. To disassemble the cylinder, insert five fired cartridge cases into the chambers to provide support to the extractor. Tightly secure the extractor post (#33) in the jaws of a drill press or lathe chuck, then rotate the cylinder in a counter-clockwise direction in order to unscrew the extractor post from the extractor (#32).

Notice the witness mark or dot on one of the rearfacing legs of the extractor star. This dot should be aligned with the serial numbers on the rear of the cylinder for correct reassembly. The extractor springs area tight fit on both the extractor and on the post. When reassembling the extractor/ post/spring, compress the spring by holding the post in about halfway and start to tighten the post only about a turn at a time, stopping to release tension on the spring after each turn.

Do this until the post is finally tight. In this manner, you'll avoid kinking and ruining the spring while you're tightening the post. 9. To disassemble the hammer, rotate the hand (#29) 180 degrees, and pull it up and out of the hammer. Reassembly hint: Notice the half-cut on the inside of the hand shaft. This halfcut is actually an assembly tool and can be used later to ease the reassembly of the hand into the hammer.

Use a pin punch and hammer to drift out the pin in the center-front of the hammer that holds in the hand-spring (#20). The handspring will now slide out of its recess in the hammer. Notice where the dip in the spring fits between the pin holes in the hammer for reassembly later. Before removing the stirrup, be careful to note the correct positioning of the stirrup (#28) for later reassembly. The stirrup can now be removed by drifting out its pin at the rear of the hammer.

Before driving this'or any other pin, for that matter'always provide support for the hammer or other small part by positioning it on a bench block and driving the pin into a hole in the block. This will prevent damaging, bending, or breaking any small part that contains a drift pin. 10. The Smith & Wesson's barrel is disassembled by first unscrewing and removing the barrel-catch screw (#9) from the left side of the barrel's topstrap. The barrel catch (#25) is now loose and can be withdrawn to the rear.

By holding the barrel in a muzzle-up position and tapping the rear of the barrel's top-strap on a wooden block or bench-top, the barrel-catch cam (#31) and barrel-catch cam spring (#17) will fall out of the recess in the top-strap. Be sure to take note of the position of these two parts for correct reassembly. Under normal circumstances, it's not necessary to remove the base pin. Reassembling the revolver is a simple matter of reversing the order of the procedure detailed above. I

PEOPLE & COMPANIES

Reader Forum

BY AMERICAN GUNSMITH EDITORS JANUARY 2008

ORIGINAL PP. 22-24

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1268-P22-F01. Know the rights holder? Please ask them to contact us.

AG-A6578B2CDB-A1268-P22-F01

Remington Etron X Conversion The Remington “Etron X” novelty seems to have come and gone—fast. As such, there are many in the hands of shooters which are not being used and sitting in gun racks. I have a customer who is inquiring about converting his .243 to a standard Model 700 configuration. As best I can tell, all that’s required are new bolt and trigger assemblies. If I’m correct, is the conversion feasible, or are there some hidden dilemmas that I’m not seeing?

John Funk Fall River Mills, California As you and your customer know, the Etron X is an electronic-ignition rifle. The ammunition is still available, although the rifle itself is no longer manufactured. An article on the gun appeared in our March 00 issue. Your first dilemma would be to purchase a bolt. None are available from Remington for the Etron X or the Model 700.

The existing Etron X bolt could possibly be remachined to contain a firing pin, but since you can’t get a bolt or the blueprints for either rifle, the problem would be difficult to solve. Of course, the “brain” of the Etron X is in its stock and is connected to the trigger. There’s no guarantee you could cut those trigger connections and

install a Model 700 trigger on the Etron X receiver. An entire trigger assembly for the Model 700 rifle is available from Remington as a unit, but the inner components are not.

The good news, if you can call it that, is that a complete Model 700 barreled action would come very close to fitting into an Etron X stock. If your customer doesn’t want to buy anymore electronic-ignition ammo, we think he’s going to have to go the route of the barreled action. Marlin Model 27/27S Info I’m looking for any information on the Marlin Model 27 or 27S pumpaction rifle. Specifically, I need info on takedown and reassembly, as well as any diagrams that are available.

I’m not worried about ammo; I know it’s obsolete, as they were only manufactured between 1913 to 1916. You’ve latched onto an old-timer. Both rifles were introduced in 1910. The Model 27 went out of production in 1916; the Model 27S in 1932. The 27 was chambered for .25-20, .32-20, and .25 rimfire. The first two might still be available due to the current popularity of cowboy-action shooting. There are no published parts drawings or schematics on either rifle.

READER FORUM CONTINUED

ORIGINAL PAGE 22

However, there is a patent (#776243, November 29, 1904) covering both. A copy of it can be secured at minimal cost from the reprint section of the U. S. Patent Office in Washington, DC. You could also call Marlin ask for the historian, and see if a copy of an owner's manual is available. Misfeeding Winchester 9422 I'm trying to resolve a feeding issue with an almost new Winchester 9422 .22 Magnum rifle. It appears that the cartridge lifter does not lift the round high enough to enter the chamber in a straight line.

It fails about 25 percent of the time. When it fails, the round attempts to chamber but because it is not in line vertically, the operating lever stops. Sometimes, some jiggling will get the round lined up, and sometimes not. This rifle looks to have been fired very little; all the parts look to be correct; and nothing is worn or bent. Have there been any factory recalls or technical bulletins on this problem? I sure hope I'm not alone on this; it's been quite frustrating so far. Thanks.

The 9422 line was dropped from production in 2002 by the entity now known as Browning/Winchester. We've made a dozen phone calls in an attempt to ascertain the real reason for the discontinuance, and never got the

same answer twice. We assume the gun wasn't making enough money to keep it going. In checking with Winchester service centers, we found there have been no recalls regarding this type of malfunction, and no technical bulletins or service manuals on the 9422 are presently available.

In view of the 2002 expiration date, though, "almost new" could be interpreted as being at least five years old. In that time, it's almost certain the rifle was disassembled by its owner (to "make it work better") and the possibility exists that its carrier assembly was improperly reinstalled. For your information, then, the carrier spring is placed over the small end of the carrier with the free (open) end of the spring upward.

The carrier and spring are then inserted into the yoke at the back end of the cartridge cutoff. This subassembly is placed in the frame with the tab of the cutoff in its notch on the frame's front. Next, the carrier pin is inserted from the left and the closed end of the carrier spring is pushed back and hooked under the rear of the carrier. Now the straight end of the spring is pushed back through the clearance at the ends of the hammer-stop pin and hooked under the pin.

Since wear is not always apparent visually and weakness is generally invisible, we suggest you replace the carrier spring, deburr the carrier, make sure the carrier pawl moves freely, and replace the carrier-pawl spring and perhaps even the finger-lever arm.

Different Shotguns/ Same Problem I have the same problem with both my Savage Model 30 and my Remington 870 Wingmaster. Both are pump guns in 12 gauge. Every other time I rack them, a shell will fall to the ground.

I replaced the shell stops, but that didn't change anything. Can you tell me what I need to replace to make them work? Thank you. The problem with both shotguns is based in the carrier (lifter) assembly.

ORIGINAL SOURCE PAGE

22

READER FORUM CONTINUED

ORIGINAL PAGE 23

For one reason or another, the carrier is not returning low enough after chambering to catch the round being fed back from the magazine. The solution might be to bend the carrier so it falls below the magazine tube in the receiver or perhaps a weakened carrier spring needs to be replaced. Prior to any bending, however, we should pass along the response we received from a Savage technician who's very familiar with the Model 30.

Although the Savage and the Remington are not exactly the same mechanically, they're similar enough that the technician's advice will apply to both. Here's what he told us: "When the bolt is closed, the cartridge stop releases a cartridge from the magazine to lay on the entrance of the (carrier) lifter. It is stopped at that point by a bump on the bottom of the slide. As the bolt opens, the cartridge can follow the slide to the rear.

If the lifter is sticking slightly up so the cartridge can't feed over the lifter, when the action begins to close, the lifter will move up allowing the cartridge to come out under the lifter. There would have to be some reason for the lifter not to fully return down. "There are several variations of trigger groups on the M30, but the lifter design remained the same from the original crossbolt-safety version through several top-tang safety versions.

With the assembly removed from the receiver, the lifter should come down in contact with the step surfaces on each side of the guard. If it is pushed up, the lifter spring should hold it in this position. The spring has a curve that rubs on the pawl and acts as a detent in the up and down positions. It should hold the lifter down as well as up. The lifter should not be loose at either extreme, as the spring is in contact with the pawl.

It also acts to force the pawl up against the slide as the pawl is cammed down when the slide moves back and forces it up to engage the front of the slide to turn the

lifter up as the bolt is closed. With the spring removed, the lifter should freely swing through its travel arc. Early guards had screws for the lifter to pivot on, with screw heads that were staked in place. Later guards had the boss for the guard to pivot on cast in place.

Be sure the screws haven't backed out if it's an early guard. "Before bending the lifter, ensure that the lifter spring is working correctly. These will show evidence of polishing on the pawl end so there is no sharp edge to catch on the pawl. Older springs were round and later springs were made of square wire for more strength. If the lifter travels its full arc with the spring removed, then check the alignment in the receiver with a dummy shell feeding from the magazine.

The shell should pass above the end of the lifter with the bolt in the closed position. "The down position was not adjusted at assembly, but the up position was fitted at assembly by grinding a bevel on the corner where the lifter folds around the pawl. This was checked with a gauge by each assembler on every lifter fitted so the up position would feed the cartridge into the chamber. The guard and lifter were set on the gauge located by pins in the holes for the screw and pin that held the guard to the receiver.

At a later date, this clearance was also added to the lifter blank so no grinding was required. "It is common for the lifter to get bent low and the cartridge to feed beyond the stop on the slide, locking the action up by wedging between the slide and lifter. Remington 700 Integrated Security System I have a bolt-action Remington Model 700, over two years old, equipped with the so-called Integrated Security System (ISS).

Upon cleaning the bolt assembly, the machined stud composing the basic system came out appearing to be defective, and no retainer was observed. There is no mention (in detail) of this assembly in the

owner's manual. I would appreciate if you could give me some references in order to find an assembly drawing and part numbers for this item. It also appears that the rifle can be fired safely without the ISS. I also need references on this matter. The firing pin was integrated with the bolt plug in the ISS.

The system itself has been discontinued by Remington and is no longer serviced by the factory because it didn't meet California gun laws—at least not in the opinion of the legislators who voted their thoughts on firearms design into those laws. But you are right. The 700 will fire safely without the ISS. In fact, any other Model 700 firing pin will fit your bolt and should function properly.

Beretta Sight Replacement I just recently became a member of the AGA and am about to tackle my first project—a simple one, I hope. I have a Beretta Elite 2 and want to replace the front sight with a fiber-optic sight. The instructions that came with the sight said to push out the pin in the front sight, but I can't find a pin in the front sight. Just to the left of the center of the front sight is a small indentation. Is it possible that this is a very small pin?

Please help with any instructions that I might be able to use. Thank you. Since Beretta provides no fiber-optic sight for the 92-Series, we assume yours is an after-market product. The supplier of the sight is misinformed; the front sight of the Brigadier employs no pin. It fits into a dovetail cut milled into the slide and is pressed into that dovetail. The front sight on your pistol can be drifted out right to left and the replacement drifted in left to right.

That's assuming that the base on the new sight matches the base dimensions of the tapered dovetail on the bottom of the factory sight. If your new sight fails to measure up, you'll have to carefully file and stone it until it does. A drop of gun oil in the slide dovetail will also help

ARCHIVE IMAGE WITHHELD

The original image is not displayed while permission is being confirmed. If you are the author, photographer, or rights holder, contact editor@gunsmithmag.com and reference AG-A6578B2CDB-A1268-P24-F01. Know the rights holder? Please ask them to contact us.
AG-A6578B2CDB-A1268-P24-F01

(continued from previous page) somewhat to ease the installation of anew sight. Remington Bolt Problems I have had a couple Remington 742s in for service and had trouble removing the pin that holds the bolt handle in place. I've bent punches and the pin has not moved. How should that pin be removed? I also have another Remington 742 where the bolt is about a half inch from being closed and is locked up tight as a tick. It won't move forward or rearward at all under normal hand pressure.

What could be the cause of such a problem with this rifle? The operating-handle pin is driven out from the rear of the handle. Four ridges on its bottom end make the pin a tight fit. Start the pin with a solid straight punch and then switch to a bent drift punch to drive the pin totally from the gun. The second problem could be caused by around stuck in the chamber, but since you made no mention of seeing one we'll assume that's not the case. The absence of alive or spent round presents several possibilities.

Most you can correct, but at least two will require outside service. The first possibility is an ejection-port cover that's out of alignment. If that's the problem, replace it. The magazine could also be binding the action. Make sure the operating-handle pin is flush with the bottom of the bolt carrier, the ac-

tion bar is assembled close to the receiver walls, and the disconnecter is assembled correctly on the firing mechanism and to the end of the action bar.

Replace the magazine latch if necessary, or install a lower-number-size magazine. Another possibility is the action spring is jamming in the action bar sleeve, in which case you'll replace the spring. Another problem that you can correct is an ejector or its spring that's binding the breech bolt. In this case, you'll want to clean the ejector hole and/or replace the spring. In a worst-case scenario, the bolt carrier or bolt could be jamming in the receiver guide rails.

At one time, the factory offered corrective service for this, but it's our understanding that Remington no longer does this. A longtime authorized service center 'Nu Line Guns however, provide this service. Jammin' Ruger .22 I have a Ruger Mark II pistol (serial #215-05301, .22-cal LR) that works flawlessly when cycled through by hand, but when live rounds are shot through it, it jams.

Either the bullet gets damaged or the casing gets bent and no longer will fit. Any ideas on correcting this problem? Thanks. We suspect your problem, if it's not fouling, is ammunition related. When you cycle by hand, the gun functions slower than it does with live ammo.

From what you say, it appears the gun is short cycling which most target pistols designed for standard-velocity ammo do when fed higher hypervelocity rounds. This causes the slide/ bolt assembly to react faster, throws off the timing, and around will commonly get a bash in the nose from the breechface or get trapped between the next round up from the magazine and the ejection port.

First, thoroughly clean the pistol including the extractor cut in the breech, then experiment with different brands of standard-velocity roundnose ammo. The pistol will let you know which brand it likes best. Generic Cleaning Info Can you please provide me with any information regarding the field stripping and cleaning of a Sterling Model 400 Mk II in .380 caliber? Thanks.

The slides on pistols like these can usually be removed by drawing them to the rear, lifting the back end, and easing them forward off the frame. If you can't get that far with yours, takeoff the grips and immerse the pistol in kerosene or mineral spirits. Let it soak and then flush out the loosened fouling with a squeeze bulb. Repeated flushings and blowing out with compressed air will result in a well-cleaned pistol. Finally, lightly lubricate the gun and reinstall the grip panels.

SEARCHABLE ISSUE RECORD

Archive index

Getting the Story Straight American Gunsmith Editors	2	Correcting Feeding Problems in Marlin Lever-Action Rimfire Rifles Norman E. Johnson	15-16
Scouting Out the Remington SPR 18 Rifle Chick Blood	3-6	Working the S&W Top Break .32 Single Action Model 1-1/2 David R. Chicoine	17-21
Time Management For the Gunsmith Arthur J. Hunt	7-8	Reader Forum American Gunsmith Editors	22-24
Solving Problems with .22-Caliber Conversion Units Robert K. Campbell	9-13		

Rights and corrections. Images without confirmed permission remain reserved in place. Authors, photographers, and rights holders may contact editor@gunsmithmag.com. Corrections to searchable text are tracked against the source-page record.



American Gunsmith

The complete searchable archive of a technical journal devoted to craft, repair, maintenance, machining, and restoration.

GUNSMITHMAG.COM • EDITOR@GUNSMITHMAG.COM