

BURN GUNS

By Paul Smeltzer

Part two of a series

I hope the take away from Part I was that all fires are not created equal. That being the case, damage from different fires is not universal. The location and extent of damage is not the same between guns in the same fire, and can even differ on the same gun from one end to the other.

Careful observation can give you valuable clues about the fire and damage sustained by each firearm. After this initial inspection, it is a good idea to take pictures and make notes of what you started off with. Not only is this useful for your own recollection, it is useful for reminding the owner what his gun looked like when he handed it over to you.



Step 1: Take pictures as a reminder to the customer what the gun looked like before you did the restoration.

Once this initial inspection is accomplished, we come to the necessity of disassembling the firearm. This process can be complicated by melted and deformed parts. It can further be complicated by not having had the opportunity to take apart this particular firearm when it was not a mess. If you are working with a firearm you have not seen before, stop here and learn about the disassembly of the gun. The obvious first place to look is the extensive video library available through AGI. *If they don't have the video you are looking for ask to*

talk to Jack Landis and more times than not he can direct you to a source.

It is not a good idea to learn the gun you hope to repair by diving into it in its damaged state. You are very likely to break something that was not broke because you tried to disassemble it out of sequence or otherwise incorrectly. Destroying a part because you did not take the time to learn its proper disassembly procedure is not excusable and can be very costly. Many burn guns I have handled are collector guns, or guns that have been out of production for decades. There is a good chance that if you spoil a part due to carelessness, you will not be able to replace it, and that's on you, not the fire.

There are all the usual challenges present in disassembly, such as stuck fasteners and messed up screw heads. Most times the fire has taken the number and severity of stuck fasteners to a new level. This seems to be especially true when two dissimilar metals are involved, a steel screw into an aluminum frame for example. Patience, experience with stuck screws, and an ample supply of Kroil is necessary.

The amount of heat the firearm was exposed to is going to directly affect the disassembly process beyond stuck fasteners. Any plastic or synthetic parts that have melted into the gun's most intimate crevices or found their way into the workings of the gun is another opportunity to accumulate patience. This is not always a Zen like experience.

Removing this synthetic material can usually be accomplished with various picks, screwdrivers to pry material out of the way, and small chisels. Sometimes it is helpful to freeze difficult parts, gently use low heat in an oven, or use a blow dryer till the plastic begins to soften a little. The kitchen oven is not the first choice unless you live alone and don't mind the smell of burnt plastic mixed with a campfire. Being happily married, I use my Cerakote ovens.

As difficult as melted plastic can be to remove, the most difficult agent to overcome can be gun oil. Yes, gun oil. Most folks will "oil down" their firearms, usually liberally, before storing them in a gun safe/oven. Depending on the volume



A good Kroil soak and sit, and sometimes a little heat or freezing, helps the parts relax their embrace.

of petroleum products, heat of the fire, and probably the composition of the oil, one can achieve an incredibly strong, epoxy-like adhesive that has inundated all manner of small internal parts. Mixed with carbonized dirt and grime the inside workings of your favorite firearm can look like a fly stuck in amber.

If this situation exists it will require all of your accumulated patience to free them from their tomb. The same tools and techniques used to free parts from melted plastic can be used for hardened baked oil goop. An additional tool I have found useful is decarbonizing solutions that mechanics would use to clean pistons and cylinders in motors that have seized or have accumulated heavy carbon deposits. Long soaks, several weeks, have gone a long way to loosening some of these welded parts.

Be aware that some of these solutions will eat some types of alloys, not good to completely dissolve away needed parts. Be aware that Simple Green and Brownells d'SOLVE will eat at aluminum parts if left sitting for several days. Overnight is OK, but scrub and rinse the next day.

After you have finally been able to disassemble the firearm, time to clean and inspect everything. Cleaning will most likely take a little more time than usual with carbon build up and baked sludge still present. I usually bead blast heavily coated parts, it is faster than steel brushes.

However you choose to clean the collection of parts before you, they now need to be inspected, carefully inspected.

Time to clean and inspect, especially that mainspring!



This is the time to check on the condition of the springs. Some guns have a mess of springs; coils, flat, round, some have few. We are looking for a loss of temper, springiness if you will. Can you easily bend a stiff flat spring, will a coil spring compress and rebound properly, same with round wire hairpin springs? If you find a suspect spring, where did it come from, large or small spring, just that one or others in the same gun?

I once had a Smith .38 revolver that was left on top of a gun safe during a fire. The gun had rubber grips and, as rubber does, it burned hot and long. The main spring, which is stout, was easy to bend in half with two fingers, and did not bend back without help. However, the rebound spring appeared to be in good shape, the small cylinder stop spring also appeared to be in good shape, in fact all the rest of the springs were in good shape. So do you condemn the gun?

No doubt the grip area sustained significant heat, but it did not seem to affect the next spring over, the rebound spring, a short stout coil spring. The grip frame did not seem to be distorted, cracked or otherwise visibly damaged. The cylinder and other moving parts moved as they should. I told the customer the safe bet was to condemn the gun rather than risk injury.

Sometimes the safe answer is just the right answer, but I wonder if that gun might have been salvageable. The deciding factor for me was the complete failure of the main spring, it took a lot of heat for that big flat spring to become that soft.

Beyond springs, thoroughly check all parts for damage or distortions, especially small parts, aluminum or soft alloys.

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Resource Directory

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Tac-Con USA

AR-15, AR-10, AK Tac-Con™ 3MR Triggers

Email: info@TacConUSA.com
(623) 282-1881 • www.tacconusa.com

Boberg Arms Corporation

XR9/XR45 Reverse Feed +P Auto Pistols

(651) 287-0617 • www.bobergarms.com

Sturn, Ruger® & Co., Inc.

22/45™ Mark III™ Pistol

(928) 778-6555 • www.ruger.com

Brownells Inc.

**Wild West Bear Proof Marlin Ejector,
Skeet's Shotgun Bore Gauge**

(800) 741-0015 • www.brownells.com

PISCO Gunsmithing

Bob Dunlap/Ken Brooks – Gunsmithing

(541) 396-5558 • www.piscogunsmithing.com

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Joe Alesia AKA "Lefty Longridge"

**Next Level Shooting Clinics –
Cowboy, IDPA/IPSC**

(661) 373-2709 • www.deadwoodboys.org

**AGI - The American Gunsmithing Institute
Hobby and Professional Gunsmithing Courses**

(800) 797-0867 • www.AmericanGunsmith.com

GCA - Gun Club of America

(800) 435-GCOA (4262) • www.GunClubofAmerica.com

Burn Guns continued . . .

Pay special attention to those areas that take a hard hit when the firearm is discharged, chamber areas, bolts, cylinders, slides, and recoil parts. Any damage to these areas is a big red flag. For example, an extractor from a closed bolt shows obvious damage and the associated extractor spring is damaged; we have a problem. If you can add evidence from your inspection or disassembly that indicates those parts took significant heat it is probably a deal stopper.

Be aware that some damage may have been caused by your efforts to take the firearm apart. Some parts may have been broke or missing before the fire. I have come across more than one burn gun that needed repair before the fire. It may be necessary to replace damaged or missing parts. Make note of these since they are a cost, and may be hard or impossible to find.

My next step is to reassemble the firearm as much as possible. I want to check function the best I can. If you have all the parts available and useful, check for function as you would any other gun you made repairs to (hopefully you know better than to ever use live rounds in this process).

Does the trigger system work? Does it feed, extract and eject? Does the safety system work? Do all the bits and pieces play nice with each other? If not, why not? If so, good deal. I'm feelin' better about things if I can reassemble the firearm with the original parts, and it passes function testing.

At this point it is decision making time, and that decision is whether or not to proceed to the rebuild/refinish stage. My primary concern is whether I feel comfortable that the firearm will be safe to shoot. That decision is made with the accumulated information at hand. This includes damage to the stock or grips. I am not concerned too much about melted plastic stock parts, I have melted plastic stocks in my Cerakote oven at only 250 degrees. Not usually worried much about discolored wood either, or melted recoil pads.

It is a matter of looking at all the parts and making an assessment of where the most damage occurred, how significant, and how that might affect safe functioning of the firearm. Sometimes the answer is obvious, sometimes not, there are rarely absolutes. It comes down to knowledge of design and function, careful observation, and common sense.

If in doubt the right answer is always condemn the piece, either destroy it or make it an inoperable wall hanger. If the answer is that it is salvageable, the next question is should it be salvaged?

*Part Two of the "Burn Gun" series written by
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