

Goof-Proof Removal of the Thompson Barrel

If you're ever lucky enough to work on a valuable original, you'll need some special tools and techniques that might not be necessary for working on the semi-automatic replica.

by Richard MacLean
Call it the "trench broom," "Chicago typewriter," or "Tommy gun," there's probably no other gun in the world more recognizable than the Thompson submachine gun. Today, the AK-47 or the M-16 might compete for military honors, but they just don't hold the same longstanding mystique as this vintage weapon. The fascination with these guns began with news accounts of the gangsters of the 20s and runs straight through to the M1A1 Thompson used by Tom Hanks starring as Capt. John Miller in the 1998 movie *Saving Private Ryan*.

Fascination, of course, creates consumer demand. But with the Hughes Amendment to the 1986 Firearm Owners' Protection Act, the supply of fully automatic weapons available for private ownership was effectively frozen. And according to the laws of supply and demand, the inevitable has happened: the price for Thompson subma-

chine guns has skyrocketed. Original Colt Thompsons in good condition typically command in excess of \$50,000, and the Models 1928, 1928A1, M1, and M1A1 produced during World War II are not far behind. In 1986, these same guns would have been worth less than 10 percent of their current value.

Not surprisingly, those market conditions combined with the regulatory restrictions in some states against full-auto and short-barreled guns have created a demand for semi-automatic Thompsons. Numrich Arms Co. re-registered the famous Thompson bullet trademark and began manufacturing a semi-automatic version through a division of the company they named the "Auto-Ordnance Corporation" after Col. Thompson's famous company. This division was subsequently sold in 1999 to Kahr Arms of Worcester, Massachusetts.

What's the difference between the semi- and the full-auto versions? The Thompson submachine gun fires from an open bolt, while the Kahr Arms semi-automatics fire from a closed bolt. The Kahr come standard with a barrel length of 16.5 inches in conformance with ATF regulations, making it the same as any other semi-automatic rifle as far as the law is concerned. Kahr Arms also produces a 10.5-inch short-barrel version that's more in keeping with the original Thompson's appearance, which

Below top: *The original and authentic Colt Thompson "Tommy gun" is a rarity these days, with a collector value of \$50,000 or more.*

Below bottom: *The Kahr Arms Thompson 1927A-1 is a longer-barreled, semi-automatic "near-replica" of the original Thompson.*



makes this version a National Firearms Act (NFA) weapon. In states where allowed, consumers must purchase these NFA weapons through a Class 2 manufacturer or Class 3 dealer on a Form 4.

A Few Words of Caution

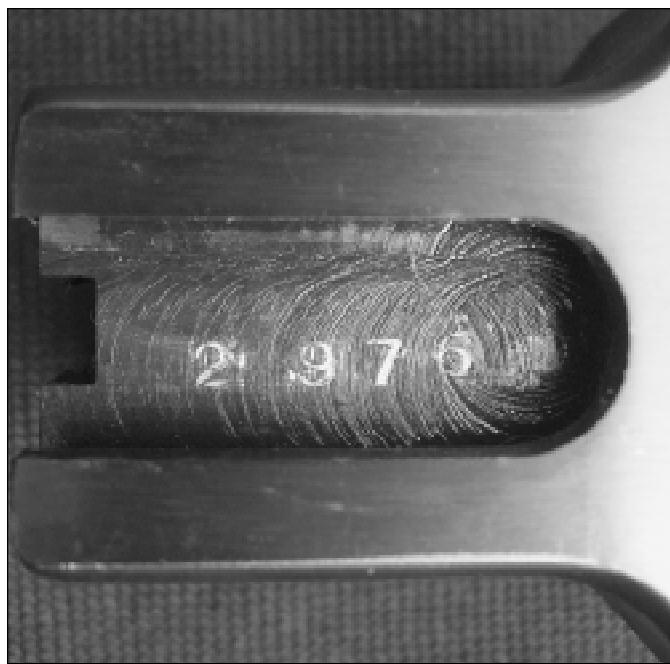
The aftermarket semi-autos and the original versions of the Thompson offer some unique gunsmithing opportunities, but there are potential legal and technical issues that must be understood and appreciated. First, let's talk about the legal issues: NFA weapons are not only regulated at the Federal level, but also at the state and local level. Before a gunsmith attempts to work on one of these, he should be thoroughly familiar with all of these potential legal restrictions. For example, an original Colt Model 1927 semi-automatic Thompson is still classified as a "machine gun," since it's built on an original, open-bolt Colt receiver, and select-fire components could be installed without modification. It would also qualify as a short-barreled rifle.

These original "semi-automatic" guns are quite rare—only about 150 were produced—and few gunsmiths will ever encounter one. Nevertheless, my point is that there are odd twists and turns to NFA weapons. Working on any of these without the owner physically present at all times (no disappearances even for lunch breaks) would be a felony.

To work on any NFA weapon legally without the owner present, a gunsmith would need, as a minimum, the required licenses and possibly an approved Form 5 to transfer the NFA weapon in and out of the business. What most gunsmiths elect to do is to check the identification of the owner and the Form 4, and have the owner physically present at all times. I'm not in position to provide legal counsel, but I can offer a warning: It's up to you to determine these details for your local area.

The rarity of the Model 1927 semi-automatic also underscores the need for certain cautions extending beyond just the legal issues. As I mentioned

Right: *The visible serial numbers had once been removed from the authentic "gangster Tommy Gun" shown on page 14. Removing the barrel revealed the hidden third serial number on the receiver where the grip mount is attached.*



before, all of these original guns are expensive. But to further put this in perspective, the four original semi-automatic fire-control parts which can easily fit in the palm of your hand recently sold for \$3,000 at auction. An original semi-automatic Colt can approach six figures, more than a full-auto in equivalent condition.

My point in stressing the value of these guns is simply to remind you that the usual tools and techniques may not suffice when working on these expensive pieces of history. The most critical step in any gunsmithing on these rifles is barrel removal. That's because it's highly likely that you'll mar the finish of an original using standard tools and techniques. In addition, there is also the danger that the receiver can be distorted if it's not properly supported.

Why Remove the Barrel?

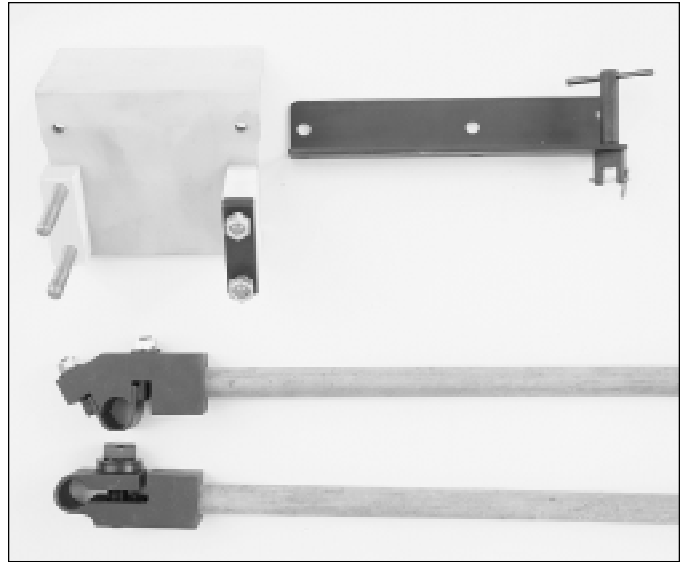
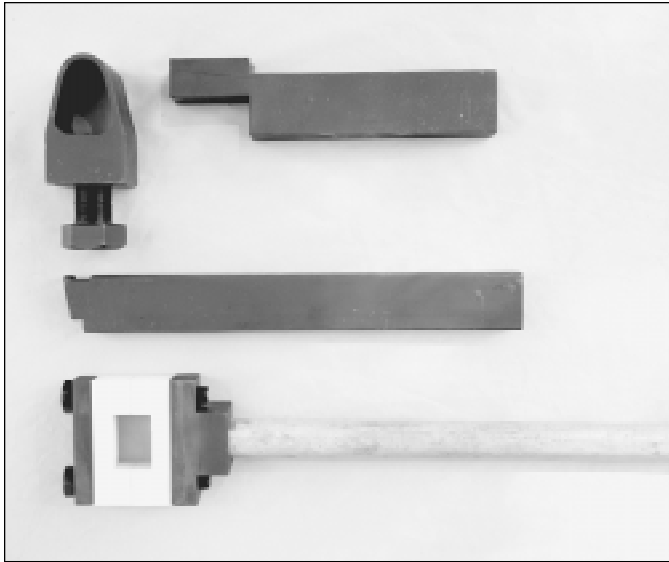
The need to pull and replace a barrel can be due to all the usual reasons familiar to gunsmiths. And there are several others that are unique to the Thompson. One of the strangest is to identify the original serial number of a real "gangster Tommy Gun." Criminals of that period would sometimes obliterate the serial number on the receiver as well as the matching number on the trigger frame. What they

didn't know was that there was another serial number hidden on the receiver. This matching number, concealed under the forearm grip mount on all original Colts, can only be observed by removing the barrel.

A number of these guns with obliterated serial numbers were "amnesty registered" under the 1968 Gun Control Act and stamped by ATF agents with a new identifier for the Form 4. The original Colt Thompson used to illustrate the barrel removal process in this article was one such amnesty-registered gun. There are also examples of these guns in museums, including the New York City Police Museum and the Rock Island Arsenal Museum.

Gordon Herigstad, noted historian of Thompsons and author of *Colt Thompson Serial Numbers*, has researched the serial numbers of all of the guns bought for Al Capone's gang and also those illegally provided to the Irish Republican Army. If a gunsmith has a customer with an amnesty-registered Colt Thompson with an obliterated serial number, by removing the barrel and finding the original serial number, the gunsmith could possibly turn a valuable gun into an *extremely* valuable gun with a documented history.

The second reason for barrel re-



Above left: The Thompson tools made by Richardson include the Barrel Vise with associated tool (top), Grip-Mount Lever (middle), and Receiver Wrench (bottom). **Above right:** Other Richardson tools include the Receiver Vise (top left), Grip-Mount Retainer (top right), Universal Barrel Wrench (middle), and Heavy-Duty Barrel Wrench (bottom)

- Receiver Wrench
- Receiver Vise
- Heavy-Duty Barrel Wrench
- Universal Barrel Wrench
- Grip-Mount Puller
- Grip-Mount Retainer
- Grip-Mount Lever
- Barrel Vise
- Headspace-Gauging Plug

removal is that, because of their desirability as display and reenactment guns, gunsmiths are building non-functioning Thompsons from dummy receivers and parts kits. The original barrel in these kits must be removed from the cut receiver and reinstalled on the dummy receiver.

The third reason why you might be called on to remove a barrel relates again to the value of the original guns. In states where allowed, it's possible to rent fully automatic weapons to shoot on the premises of shooting ranges. Movie production companies also use Thompsons adapted to fire blanks. Original, transferable NFA weapons have become so valuable that they are used only for very special occasions or auctioned off to the highest bidder. There is nothing more disheartening than witnessing a movie star throwing a transferable machine gun down on a pile of rocks. For example, Independent Studio Services of Sunland, California, has a Class 2 manufacturing license and is using newly manufactured Thompson receivers and parts kits to produce fully functioning guns for the movie industry. These NFA weapons are, of course,

not transferable to individuals and must be used under tightly controlled circumstances, but compared to the originals, they are cheap and replaceable.

In any case, gunsmiths with the right tools are needed to perform the aforementioned services. And the pricing for these operations is, of course, commensurate with the nature of the work. In other words, this is not your typical gun-servicing project.

The Right Tools

First, let's talk about the tools used specifically for original Colt Thompsons and not the semi-automatic, Kahr Arms weapons. (Later on, I'll discuss gunsmithing the semi-automatic replicas.) Since these tools are quite specialized, the only known supplier is Douglas W. Richardson (2100 Reynolds Rd., Malibu CA 90265; 310/457-6400; www.thompsonsmg.com). Richardson manufactures a full line of Thompson gunsmithing tools. Those tools specifically used for barrel replacement are listed below and illustrated in the accompanying photographs:

In the operation illustrated in this article, the receiver vise, grip-mount retainer, and universal barrel wrench were used because the gun being worked on was an intact gun—not a parts kit with only a partial receiver (more about this later). The receiver vise is designed to be held in a 6-inch bench vise or as an alternative, it can be bolted to a bench or other support. It firmly holds a complete, disassembled receiver with barrel—without marring the finish or torquing the receiver as the barrel is removed.

Once the receiver is clamped in the receiver vise, the grip mount is pulled back and held away from the barrel fins with the grip-mount retainer. This is to allow room for the barrel wrench jaw to pass between the barrel and the grip mount. A standard gunsmith's barrel vise will usually not hold the barrel tight enough, since it only grips the barrel in two places.

The wrap-around clamp of the Richardson barrel wrench actually deforms around the barrel and grips over approximately 150 degrees of

Right: Here, the Richardson Universal Barrel Wrench is positioned with the receiver clamped in a special vise.

the circumference. The body of the wrench provides additional gripping surface for a total of 300 degrees. This is particularly important in order to avoid damaging finned barrels. (This Universal Barrel Wrench works without the need to remove compensators or ring-style front sights from the barrel.) The body of the wrench is attached to the jaw, and the nuts and washers are secured tight enough to prevent the barrel from turning. The assembly must be positioned so that it is all the way counterclockwise (as viewed looking down the barrel). This placement allows the barrel to be turned as much as possible before the wrench is again stopped by the grip mount at the end of the turn. Usually, one turn of the wrench from one side of the grip mount to the other will be sufficient to loosen the barrel enough that it can be fully removed by hand.

It's not necessary to remove the grip mount to change barrels. However, if it is removed, the mount must be

Below: The grip mount is pulled out of the way with Richardson's special lever and held in place with the retainer.



pulled straight out the front end of the receiver. Nothing but the barrel and friction hold the grip mount in place. That's not to say that the grip mount will fall out of the receiver. For a proper fit, it should have been driven into the receiver with force when installed. After having been there awhile, dirt and rust may also be holding the grip mount in place. It's critical to remove it without bending or damaging its projection that fits behind the barrel (which is how it is held in place) or damaging the front end of the receiver.

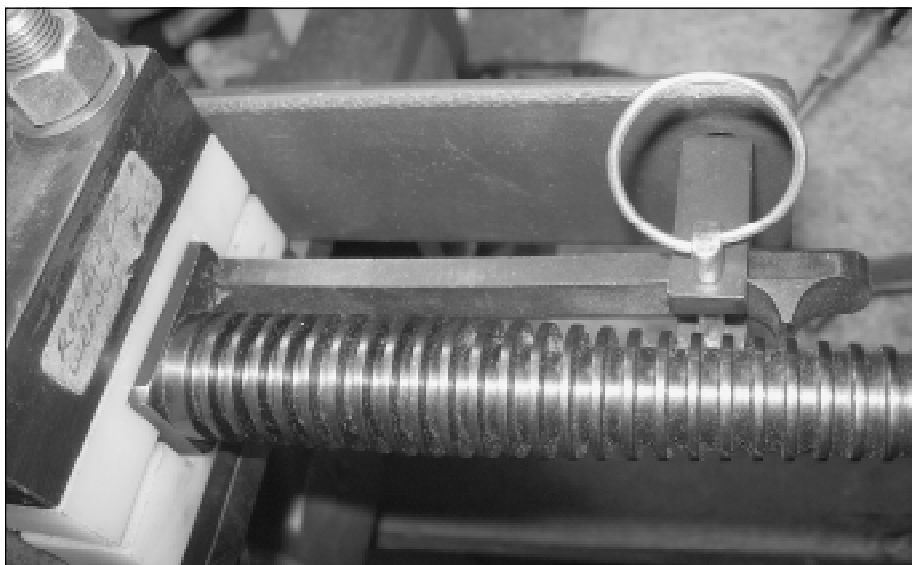
Place the body of the puller under the grip mount with the shaft and hammer in front of the receiver. Place the plate on top of the grip mount and

bolt it to the body, clamping the grip mount in the body. From this point on, it's a straightforward application of the slide hammer to pull the grip mount out. The critical consideration is not to put any bending stress on the grip mount.

If a barrel is to be removed from a parts kit with a cut receiver, the Receiver Vise, Grip-Mount Retainer, and Universal Barrel Vise illustrated in this article cannot be used, because there is not enough of the receiver to enable it to be held properly. In this case, Richardson recommends heating the receiver nose piece red hot with an acetylene torch. Do not apply the flame to the barrel or grip mount. After the nose piece has completely cooled, try to unscrew the barrel by clamping the barrel in a large (6-inch) bench vise between blocks of soft wood and try to turn the receiver nose piece with an open-end wrench.

Gunsmiths might try using their standard barrel vise to hold the barrel, since the heating should make it easier to remove the barrel. If all else fails, Richardson manufactures a special barrel vise to grip the barrel. The Grip-Mount Lever can be used to pry the mount away from the barrel to enable the barrel vise clamp to pass between the barrel and grip mount.

Since a used barrel being assembled onto another receiver will usually not tighten up with the front sight in the proper position, the compensa-



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Above: *The Richardson Grip-Mount Puller, shown in position here, is essentially a type of slide hammer.*

tor or ring-type front sight will have to be removed anyway. The Heavy-Duty Barrel Wrench (which only works with barrels without compensator or sight) is the preferred choice. To remove the front sights or compensator without marring, Richardson manufactures a front-sight puller and compensator wrench.

Assembly is the reverse of the preceding. Earlier Thompsons had witness marks to realign the barrel. This was related to the manufacturing process that involved installing the barrel and then removing the barrel for bluing and sight installation. The first 1,000 Thompsons actually had their serial numbers placed on the chamber end of the barrel in order to rematch up the barrels with their receivers. Later this practice was abandoned. Unless a barrel is to be reinstalled on a gun with witness marks, marks on the receiver and/or barrel should be ignored.

Kahr Arms Thompsons

Aftermarket barrels supplied by Kahr Arms and others may not be made to original Thompson specifications. They typically have a smaller outside diameter than original Thompsons.

Richardson cautions that use of their tools on aftermarket barrels could result in damage to the tools, since they are designed to fit parts made to the tolerances specified in the original Thompson drawings, or to the barrel. It may be possible to shim an aftermarket barrel and then use the Richardson tools, but you'd still be taking a chance of damaging either the tool or the barrel.

Gunsmiths should also be aware that the dimensions and tolerances on original Thompson parts are typically slightly different from newly manufactured semi-automatic parts. Therefore, the parts are not always interchangeable. The internal bolt and fire-control parts, of course, are obviously different, but there are even slight differences on parts that appear to be identical. It is best to first check with Kahr before ordering semi-automatic replacement parts for use in an original Thompson. Sources for parts are listed in the box below. ■

Original Thompson Submachine Gun Parts
SARCO, Inc.
908/647-3800
www.sarcoinc.com

Numrich & Kahr Semi-Automatic Parts
Kahr Arms, Parts Department
508/795-3919
www.tommygun.com