

# Mike Bellm's Instructions for Disassembly & Reassembly of the Thompson/Center Encore and G2 Frames, Installation of Bellm Custom Trigger/Sear Springs, and Complete Trigger Job

Updated June 2004 Version

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Hi, I'm Mike Bellm, sitting here ready to take you through all the steps necessary to successfully disassemble your Thompson/Center (tm) Encore (tm) frame and reassemble it with a Bellm Custom Encore trigger/sear spring installed in your choice one of 7 different tensions that will give you the trigger pull weight you want to better suite your shooting activities than the heavy factory stock pull weight.

I have been customizing TC's for over 20 years, but no amount of customizing can make up for a heavy, rough trigger pull. The Encore and G2's unique design is easy to work with and can produce an excellent trigger pull in minutes..... I'll show you how.

You will learn the sequence of parts removal, the orientations of the parts to each other, and how they work together. There will be tips along the way to "flatten out the learning curve" for you, as well as important function checks necessary for the safe operation of your Encore.

You can enjoy the benefits of a good trigger while saving time and money. Or, if you are an FFL holder you can make money doing badly needed Encore trigger jobs and also enhance sales of this wonderful, more politically correct firearm when customers discover how good the Encore's trigger pull can be.

After we've gone through making the trigger pull lighter, we'll then go back and hone those parts that need smoothing up if you care to go this next step to complete a trigger job. And, by the way, the Encore & G2 triggers can be some of the smoothest triggers you will ever experience.

You can do it. Ready? Let's Have Some Fun.....

*\* This manual is taken from the 2000 edition, and addresses primarily the Encore, but the G2 mechanism is fundamentally the same. Minor differences between the two will be noted by (\*).*

*"UPDATES" from the 2000 edition have been inserted.*

## WARNING

It is entirely possible that you may make a mistake working on your Encore frame that may result in an unsafe firearm that could accidentally do damage to property or cause injury or death to yourself or others. It is imperative that you heed all warnings wherever they are given in the instructions that follow, and that you understand these warnings may not cover every situation that may arise. I will exercise due diligence in explaining important safety checks you must perform, but ultimately, you are the one responsible for the outcome of the work you do on Encore and G2 frames.

## DISCLAIMER

Before we begin the fun parts, I must make it clear that since I have no control over how you perceive or use this information, neither I nor the parties who distribute this information assume any responsibility for the results you obtain, or for any damages, losses, or injuries you or others might incur resulting from your use of this information. It is also assumed that if you read past this DISCLAIMER paragraph and use any of the following information, you agree to assume all responsibility for your own actions.

That said, let's take the Encore frame apart



40 seconds later



Reassembly time: 3 min. 10 seconds.

Ok, I'll slow down. My military marksmanship instructor/armorer "past life" is showing through. But you get the point, it is a rather quick process.

You need a 3/32 pin punch, a screw driver that fits the slotted pin shown on the right side of the frame, and a small hammer, but, since the forces involved are minimal, the handle of the screwdriver will do for a hammer. Put the big hammer away. You will also need a good pair of needle nose pliers whose gripping surfaces in the jaws are not rounded smooth.

### UPDATES:

1. *Bellm TC's, Now supplies specially forged pliers for spring installation in both the Encore and G2.*  
<http://www.bellmtcs.com/store/index.php?cid=63>
2. *For Pull weights below about 2 1/2 pounds. A triangular hard Arkansas stone is needed and a diamond lap with sides less than 90 degrees or thin such as the EZLap No. LF*

## FOREWORD

The extensive photos in this instructional material may make this seem like a long process, and for some the first go around may be just that. But after taking your frame apart and putting it back together a couple times, you will find it is probably one of the easiest guns of its type to work with.

For example, I can take Ruger No. 1's apart and put them together in my sleep. Might even be able to do it blindfolded. But the Encore is much, much quicker and easier in my opinion, and it is partly for this reason that I made the Encore the subject of my first attempt at this type of instructional material. I have tried to cover every minute detail that could cause you difficulty.

And while it may be boringly detailed for "whizzes" at this stuff, it should also be basic enough for the most rank novice needing a basis from which to start.



Unscrew the trigger guard pivot pin until it is free and the head protrudes some from the frame. Apply light upward pressure on the trigger guard while you pull the pin out, or you can apply light pressure from the left side and push it out with the pin punch at the risk of marring the end of the pin.



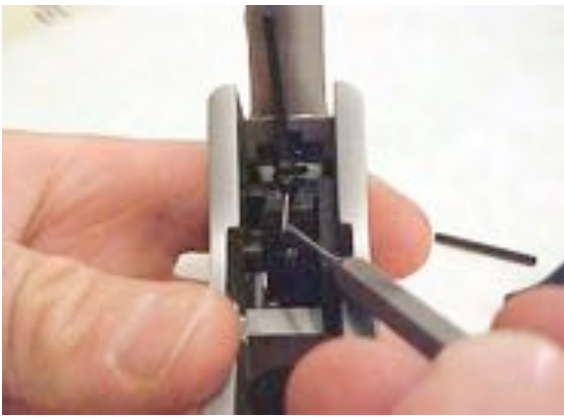
Remove the trigger guard and note its return spring and strut at the rear.



With the frame upside down, note where the trigger/sear spring end appears through the hole in the trigger. Remember this.



Removal of the next three pins is from smallest to largest. Push the smallest pin out. This is the trigger pivot pin. Now remove the trigger.



Note that the "L" shaped arm of the trigger/sear spring points to the rear. Remember this.



Push out the next larger pin, the sear pivot pin, but hold the punch in the hole for a minute as you turn the frame so that its right side is down as in the next photo. Look inside on the bottom side (right side) of frame, and note the plate about 1/8" thick with its angular end pointing to the front of the frame. This is the interlock. Remember it is on the right side of the frame. This is the part that prevents the hammer from cocking and the gun from firing when the barrel is not fully locked up.



Now, holding the frame level, pull the punch out. Reach in with your index finger and slide out the interlock, sear, and trigger/sear spring as a unit.

Don't worry yet about which parts are which; it's everything that freely comes out. Keep them together and note that the bottom arm of the sear, the wide part that is "L" shaped, points to the rear, and the other arm of the "L" points to the top of the frame (when it is in its normal upright position).



Note the orientation of the "L" shaped sear sitting on the interlock. Remember this.



Here is a clearer view of the interlock and sear. Note that the open yoke on the right side straddles the hammer pivot pin when it comes time to put it back in, and that the two parts get reassembled together, just like you see it. This is actually as far as you need to go to just change out the trigger/sear spring, but we will complete the disassembly process so that you can at least see how the system functions. If you elect to stop here, you must read the warning that follows in the section "About The Bellm Custom Encore Trigger/Sear Springs."



Push out the largest pin, the hammer pivot pin.



The trigger guard return spring strut now falls out.

Note that the hammer pivot pin goes through the eye of the trigger guard return spring strut.



The hammer drops down inside the frame and is removed out the bottom of the frame. You may have to "jockey" it a little.

*\* Note that the selector lever on the top of the G2 hammer prevents it from dropping through the frame. Instead, part of the G2 hammer pivot was replaced by a spacer washer on the right side so the G2 hammer can be pulled out the top of the frame.*



Turn the frame over and the hammer spring and its "T" shaped strut comes out the top opening of the frame once the hammer is out of the way. Now is a good time to note that there are variations from frame to frame on the hammer spring strut. Some struts have a small washer pressed onto the strut positioned between the spring and the top arm of the "T."

**SAFETY WARNING:**

When a lighter spring is installed giving a pull weight, usually at around 2 pounds or less, sometimes it is necessary to remove this washer. The washer has the effect of lengthening the hammer spring and maintains too much tension on the hammer in its forward position to permit the trigger/sear spring to reliably rebound the hammer to half cock when your finger is removed from the trigger after pulling it. The danger is that in the event the hammer is lowered without

firing a round and the hammer does not rebound off the firing pin, a blow to the hammer resulting from dropping the gun or partially withdrawing the hammer and releasing it, as in snagging it in a gun case for example, can cause the gun to fire. This is one of the main safety features of the Encore, and you must make certain that it works reliably. This warning will be repeated later on also.



On the assumption you will want to dry fire the frame when you put it back together, remove this allen socket head screw, same size as the allen screw heads on Redfield scope mounts by the way, 7/64".

This screw can be removed and reinstalled with or without the hammer in place. With the screw removed, push on the firing pin from the hammer side to help remove the round plug in the breech face that houses the firing pin. Note: If you dry fire the frame without removing the breech plug and firing pin, you will promptly compress the firing pin return spring and it will not retract the firing pin from the indent it makes in primers when fired. Thus the firing pin will hang up in the primer when you attempt to open the frame. Force it, and you will bend the firing pin. Not a good thing. The cost is minimal, but you may put your Encore out of operation waiting for another spring to arrive from Thompson/Center.

So if you intend to dry fire even one time, REMOVE THE PLUG. It beats wanting to eat a box of rat poison or slamming the door on your fingers for your stupidity when you proceed to ruin that delicate little cone shaped spring and bend the firing pin the next time you shoot your Encore. This also applies to the G2



Just for grins and your own edification, let's take a look at how the trigger, sear, and hammer all relate. Note how my index finger is on the outside of the frame, and the next finger is positioned inside the frame. What I am doing is using the middle finger to hold each of the pivot pins so they don't slip inside the frame while I position each of the parts on its respective pivot pin. When and if it comes time for you to do any honing, you will want to re-examine the points where each part comes in contact with the next.

Important Note: Unless you want to rediscover the source of the various common names for "E" clips, **DO NOT REMOVE THE BIG HEADED, SPRING LOADED PIN** you can see plainly here inserted through the trigger. There is no reason to remove it. It is best left alone unless you just can't resist the challenge of finding it when it flies off into the great expanse of space like "E" clips love to do.

CONGRATULATIONS: You now have the frame completely apart. Wasn't so hard was it? The mechanism is quite simple, yet works so well.

Fork in the road:

If you propose to do any honing and smoothing of parts, move ahead to the advanced part for tips on what to work on and what to do.

If you are only installing a lighter spring, continue reading below.

### **About The Bellm Custom Encore Trigger/Sear Springs.**

In all the Encore trigger jobs I have done, I find a fairly wide discrepancy in the actual pull weight with the same spring in any given frame. While my study may not be thorough enough, I have also noted that there is about a 1 pound to almost a 1 1/2 pound variation in pull weights in factory stock frames. They normally range from a low of about 4 1/2 pounds to nearly 6 pounds.

*UPDATE: I am finding some stock frames with pull weights as low as 2 3/4 pounds.*

Custom springs will vary about the same amount from frame to frame. Thus it is difficult to accurately predict what weight of pull you will get. Also, any stoning you do can also give quite different results.

To give you a better range of pull weights with minimal or no stoning, we have expanded the range of springs to 7 different grades of tension, from #1 with the least reduction in pull weight to #7 giving the lightest pull weight.

*\* G2 springs are about 1/16' shorter in the upper arm. Our springs are now made shorter to work with both Encore's & G2's.*

1 1/2 pound pull is the lightest pull weight I recommend for the Encore or G2. Below this pull weight, the trigger/sear spring may not have enough tension to rebound the hammer to half cock when you remove your finger from the trigger after lowering the hammer. If the hammer is lowered with a live round in the chamber and the hammer does not rebound to half cock, it will be resting on the firing pin, and thus the primer as well.

In this condition, a blow to the hammer, as in dropping it, can cause the gun to fire.

***THUS IT IS ABSOLUTELY IMPERATIVE THAT YOU CHECK TO MAKE SURE THE HAMMER REBOUNDS TO HALF COCK, SAFELY UP OFF OF THE FIRING PIN, WHEN YOU REMOVE YOUR FINGER FROM THE TRIGGER, ESPECIALLY AFTER LOWERING THE HAMMER ON A LIVE ROUND IN THE CHAMBER.***

Normally all Encores I have done trigger jobs on will reliably rebound the hammer if the pull weight is at least 1 3/4 pound. I have had some that would not rebound with a 1 1/2 pound pull weight, yet I have had some that would rebound ok at 13 oz. Thus to be safe, I recommend never going below 1 1/2 pound and no matter the pull weight, ***MAKE SURE THAT HAMMER REBOUNDS***. It is your responsibility since you are the one physically making the change in the gun, and you have been warned of the inherent danger, as well as being advised to increase the pull weight sufficiently to insure the gun is safe.

ADVISORY NOTE: I have found a few springs that are just a little too long on the curved, top end where they push on the upper arm of the sear. Check to be sure the upper end of the spring does not touch the frame itself. You can see it when you pull the hammer back a little.

*\* Previous Encore springs can be cut back about 1/16' for use in G2's. If you have Encore springs already, shorten them and use them in G2's*

Are you ready to put it back together?

Here goes.

Pg7



Slip the hammer spring and its "T" headed strut into its hole in the grip/buttstock tenon. If you got the two struts and two springs mixed up, the hammer spring is the stiffer, heavier spring, and its strut is NOT the one with the eye in the end. The correct strut has the "T" or cloverleaf shaped end.

*UPDATE: If the hammer does not rebound to half-cock reliably when you remove your finger from the trigger, cut approximately 1/2 coil from the hammer spring or as needed to give about 1/8" of hammer free travel before it hits the back of the breech. The lighter the trigger/sear spring, the shorter the hammer spring needs to be.*



Insert the hammer up into the frame. As with removing it, you may have to jockey it a little, but it freely slips up into its opening in the top of the frame.

*\* For G2's, slip the spacer washer into place, on the right side of the frame. Insert hammer pivot pin to hold it in position as the hammer is inserted through the TOP of the frame.*



Once you have the hammer up in position, make sure the top of the hammer spring strut is positioned in the slot in the bottom of the hammer. The head of the strut will be oriented lengthwise with the frame.



Line up the hole in the hammer with the hole in the largest pin hole in the frame and insert the largest pin. Note: With the pin in place, make sure the hammer strut head is securely in its position in the bottom of the hammer. If it isn't, you may get the frame completely assembled and then hate life when you can't cock the hammer. Don't reach for the rat poison. Just make sure the strut is in its slot.

Did we forget something, like the strut with the eye in it that fits on the hammer pivot pin? Nope. You don't need it for now. It will just be in the way, and it is easy to install just before you install the trigger guard. Forget it. We'll put it in later.





This skeletonized gizmo, again, is the interlock. It is lying there oriented in the right direction. With the frame lying on its side, the interlock will lie flat inside the frame. The open yoke to the right straddles the hammer pivot area. The dangly little spring is what holds the interlock in its forward position until the barrel's locking bolts push it to the rear. On your own, lay the sear on the interlock and you will see how the interlock engages the cut away pivot area of the sear to prevent its movement when the interlock is forward, or frees it to move when the interlock is pushed to the rear by the barrel's locking bolts.



This shows the correct position of the sear on the interlock, ready to be slipped into the frame. One leg of the "L" shaped sear points to the top of the frame (away from you with the frame on its side), and the other leg points to the rear.

**UPDATE:** *On both Encore and G2's, there is often a sharp burr where that "Dangly" spring is staked in. The sear rubs against this area and the burrs give a "Creep" sensation. Stone/Polish down the staked areas as needed.*



Set the sear and interlock inside the frame with the frame still with its right side down. Note how the tip of my finger is moving the two parts into place together.



Use the tip of your index finger to line up the hole in the sear with the middle size pin hole in the frame. Then insert the sear pivot pin.



Set the frame on its top and use the pin punch to push out the sear pivot pin just far enough for it to clear the opening where the trigger/sear spring goes. Now back the punch out so it clears the same opening.

*UPDATE: Needle nose pliers and hemastats work for spring installation (Shown in next frame) But, the specially forged Bellm spring pliers give full control of the spring for absolute ease of installation.*



Remember the fun I said we were going to have. This is it. I was not completely honest with you. Everything is pretty sanitary up to this point, but expletives have been known to foul the air while installing the trigger/sear spring shown here held by a hemastat with grooves ground into the jaws. However, needle nose pliers with good sharp edges in the jaws work well also. No matter which is your tool of choice, the spring has a strong propensity for taking unannounced flights into the unknown. Some are never seen again once they take flight. Sells more springs. But cheat me, be careful, and avoid doing this in an area where the spring can land in a good hiding place if you can.

***WEARING GLASSES OR SAFETY GLASSES IS RECOMMENDED ALSO, NOT ONLY FOR YOU, BUT FOR ANY OBSERVERS OF THIS PROCESS.*** Note the "L" shaped leg of the spring points to the rear of the frame, and the curved end just goes down there in the chasm below.



This is the position for getting it all together, but I left out one step. First push the loops of the spring down inline with the sear pivot pin hole, and catch it with the pin punch. It is during this phase the spring wants to join NASA.

*UPDATE: To make sure the sear is in the correct position for installing the spring, push the interlock back, pull the hammer back slightly, then push down on the smooth end of the sear you are looking at in this photo.*



Once you have the spring loops captured by the pin punch, use the pin punch to pry the loops of the spring back so that you can tap the sear pivot pin through the loops and through the opposite side of the sear and frame. I'll do a time out while you catch up. It may take several tries.

Once you get the spring installed, you are home free. Note that all current springs have 3 loops. One reason for this is to make it easier to hold onto the springs while you install them. One and two coil springs can be hard to hold onto. The added coil also helps the spring maintain its strength longer.



With the trigger/sear spring installed, slip the hole in the trigger over the end of the spring, and pull the trigger forward and down just enough to allow inserting the smallest pin.



Part of the benefit of pictures like this is showing how to manipulate things. In this case steadying the frame while pulling against the spring to line up the holes. You can look inside the frame and tell pretty well how close you are to matching up the holes. Light pressure on the pin scores a hit when the trigger is lined up with it.



The trigger pivot pin slides in easily until it contacts the trigger/sear spring. Tap it past the spring with your striking instrument, hammer, screwdriver handle or.....



It is dark in there, but the hammer pivot pin has been pushed out far enough to allow inserting the trigger guard return spring strut, the one with the eye in one end. Insert the strut and gently tap the pin in, "jockeying" the strut until the hole lines up with the pin.

Install the trigger guard return spring onto its strut.



Start the trigger into its opening in the trigger guard while lining up the strut with its opening at the rear of the trigger guard.



Note how I am holding the frame so as to hold the trigger guard in against its return spring tension and align the holes for insertion of the trigger guard pivot pin. **START THE PIVOT PIN IN ONLY FAR ENOUGH TO ENGAGE HOLES ON ONE SIDE..... DO NOT FORCE IT.** Note the black tip of the return spring strut projecting through its hole in the trigger guard next to my thumb.



Look down inside the frame and you will see the large-headed pin in the trigger sticking up in the way of the trigger guard pivot pin. Push it down while pushing the pivot pin in further, over the top of the pin's head, until the threaded end of the trigger guard pivot pin's threads engage, then tighten with screwdriver.

*\* In place of the headed pin shown in the Encore frame, the G2 has a small delicate spring that must be depressed for the trigger guard pivot pin to be installed in the same manner as shown here for the Encore.*





This is what it looks like with the headed pin in the trigger depressed below the trigger guard pivot pin. Now, except for the breech face plug and contents you are done. Congratulations again.

*\* Again, If you are working on a G2, the small spring in the trigger should have it's looped end below the trigger guard pivot pin from this view.*



Since you will likely be dry firing, we'll leave the plug out so we don't damage the firing pin return spring. But before you can dry fire, you have to be able to cock the hammer. You now know where the mystical interlock is, on the right side of the frame, so slip a finger down inside and push back on the interlock until you can cock the hammer. Surprise. The mechanism works. If it doesn't, recheck to make sure that the hammer spring strut is in its slot in the back of the hammer.



Checking the trigger pull weight. Note that the trigger guard is not installed, on the chance that the frame needs to be taken apart to change out the trigger/sear spring or hone parts. Note also two more things. One, the breech plug is still out and two, a rag is positioned so that it will cushion the blow of the hammer against the back of the frame and prevent battering it. With the trigger guard out, you may find an ounce or two difference in pull weight due to the absence of pressure of the big headed pin in the trigger pushing the trigger back. You can insert the trigger guard pivot pin to restore this pressure if you like.

***SAFETY FUNCTION CHECKS. THESE CHECKS MUST BE PERFORMED WHETHER YOU DO ANY HONING OR NOT, BUT ARE DOUBLY IMPORTANT IF YOU DO HONE THE SEAR AND/OR HAMMER.***

Testing for "push off."



Note I am gripping the frame pretty firmly while pushing forward on the hammer with my thumb to see if it will push off. Push off is not likely to occur unless you do some honing on the sear. Nonetheless, it is a safety check you should make. You don't need to break the hammer spur off pushing on it, but neither should the hammer go forward with moderate pressure on it.

(Note, for target applications under well controlled conditions, push off from a moderate amount of pressure is tolerable, but not advised for general use. There is risk of accidental discharge, especially if the gun is bumped, jarred, falls over when left sitting on the rest, or any other dumb thing that can happen.)



Testing to make sure the hammer rebounds. If you cock the hammer, and then pull the trigger, ie., dry fire it, while the trigger is held back the hammer remains resting on the firing pin.



When you remove your finger from the trigger, the hammer must rebound back off of the firing pin and be locked in this position. In other words, push forward on the hammer and it must still stay backed off of the firing pin. If it doesn't, then a stiffer trigger/sear spring is needed to lock the hammer back, **AND/OR IT MAY BE NECESSARY TO EITHER REMOVE THAT WASHER WE TALKED ABOUT EARLIER PRESSED ONTO THE HAMMER SPRING STRUT** in some frames ( easily tapped off with a hammer) **OR THE SPRING MAY NEED TO BE SHORTENED BY GRINDING OFF ONE END JUST A LITTLE AT A TIME UNTIL THE HAMMER WILL LOCK BACK IN THE REBOUND POSITION AUTOMATICALLY.**

((Note: It is entirely possible to defeat the hammer block safety using a very light trigger/sear spring, and for target use under controlled conditions (or shooting prairie dogs and ground squirrels) I would

consider it myself, BUT to ever permit a situation to exist where someone else might use it in this condition and cause damage, injury, or death is totally irresponsible. Therefore, my recommendation is, don't do it. But if you must, then install a heavier spring before selling that frame or permitting someone else to use it.))

As this updated version is being prepared, we are developing a stronger hammer spring that we will soon supply.

WE NOW HAVE TWO ITEMS LEFT TO ATTEND TO:

- 1) Adjusting the over travel screw, and
- 2) Finally reinstalling the breech plug.



With the hammer cocked and the trusty shop rag ready to cushion the hammer when it falls, turn the overtravel spring in until it touches the back of the trigger. Apply firm pressure to the trigger while backing out the over travel screw until the hammer falls. Then back the screw out another 1/4 turn and dry fire it several more times. If it shows any hesitation to release the hammer, back the screw out another 1/4 turn or more as needed. It is important that there is no hesitation. It is highly possible to pull the trigger back to the stop, wonder why it did not fire, then have the gun fire unexpectedly. Not a good thing. So while we want the minimum of overtravel, don't set it so close as to cause a problem. Remember also that when temperatures change, things move around, and it is conceivable you could set the overtravel in July and have the gun not fire in freezing temperatures when you pull down on that 8 point bull elk. I normally Loctite the overtravel screw in place rather than depending solely on the friction paint on it to keep it from changing adjustment.



If you are done dry firing the Encore, reinstall the breech face plug, firing pin, and firing pin return spring. Check the firing pin return spring to make sure it has enough tension to retract the firing pin completely inside the plug. If it doesn't, either stretch it back out, or buy another one from Thompson/Center.

In case you may have separated the return spring and firing pin from the plug, the pointed end of the cone shaped spring should be to the rear, against the flange on the firing pin. Note also that you can access the allen socket screw with the hammer installed. Handy that way.

*\* The plug must be installed with the hammer removed from the G2 frames.*

**TIPS:**

1. Sometimes a longer over travel screw is needed. Obtain a 4 x 40 x 1/4" screw from Bellm TC's or from the "Fasteners" cabinet at your local hardware or automotive store.
2. To test for adequate clearance once the over travel screw is set, I like to place two thicknesses of paper (such as this is printed on) between the over travel screw and the back of the trigger. The paper should not prevent the hammer from releasing.

ADVANCED SECTION  
HONING AND SMOOTHING PARTS FOR A COMPLETE TRIGGER JOB

***SECOND WARNING: AS WITH ANY WORK YOU PERFORM ON ANY FIREARM, YOU CAN PRODUCE RESULTS THAT ARE UNSAFE.***

I am as serious as a heart attack. If the work you do does not pass at least the safety function checks I detailed earlier, you will have created an unsafe firearm and are responsible for taking steps to correct unsafe conditions. I am not trying to be a "heavy," but while the work is relatively easy to perform correctly, people come with all sorts of capabilities and even more means of perceiving the same thing. Some of you are already adept at what follows and will take it as merely a guide. For others, this will be a first time attempt. What comes natural to one person is virtually impossible to the next. I will attempt to do the best I can for both extremes and everyone else in between..... did I leave anyone out?

**BEFORE YOU START**

**Worst case scenario..... you really make a mess of things. What to do.**

**One "fix" if you cannot fix it yourself, is to send it to Thompson/Center who will restore it to factory spec. Much of what they do under warranty is at no charge. However, there may be a charge from them.**

**Another is to ship it to the dealer I specify and have me do it for you. Currently (June, 2004) the charge for a complete Premium trigger job is \$80. "Botchism Repair" will be \$80 plus costs for parts if needed. Add \$5.95 shipping and handling. So far, in 3 1/2 years no parts have had to be replaced!**

**Enough of the "gravity of the situation." You understand the work is not to be taken lightly, and you know you have a back up if worse comes to worse. I encourage everyone to at least try the work themselves, and I am also available by eMail and phone for tech support.**

LET'S PROCEED.

While power tools can be used judiciously, you will note that I do not use them at all. My advice is to put the Dremel tool away and unplug the bench grinder. One article I have seen in a gunsmith publication says to whip out the Dremel tool. Don't.

While other methods can produce the same results, I use and recommend the following:

1. fine cut Diamond EZE Lap, No.IIF is shown, But, No.LF lets you alter the sear angle.
2. Hard Arkansas type of stone in good condition, ie., flat surfaces and sharp corners, not rounded and broken down.  
I inherited a box full of various stones from P.O. Ackley, but what I like best is what a gent named Jerry Prohaska calls a "Wyoming Stone." What it is, I don't know. I just know they are the best I have found for trigger jobs. They cut fast, leave nearly a polished finish, and do not break down easily.
3. If you alter the sear angle, you will also need a triangular hard Arkansas stone, fine cut





You have seen this view before, but here it is again for quick reference to help show you the contact points and where you need to smooth things up.



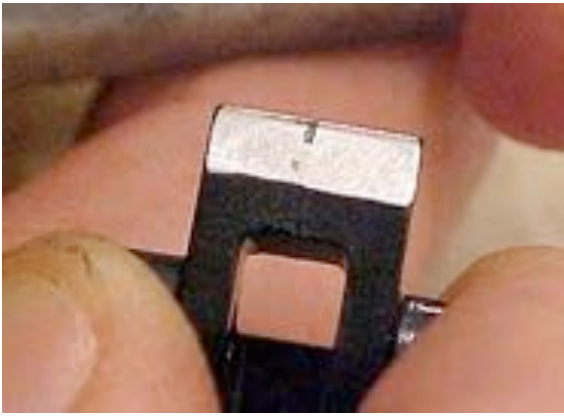
Let's start with the bottom arm of the sear. You can see the rough part line cast into the sear left unfinished from the factory. Referring to the photo before this one, you can see that the trigger cams against this surface which is quite rough. You will also note a bright wear spot indicating the only point the trigger is contacting the sear arm. While full contact is not mandatory for an exceptionally smooth Encore trigger pull, more contact is better. So focus on high spots such as this one when you do your honing. Do not change the angle of this flat. If you want to check for contact after honing, ink the surfaces with a felt tip pen, install them in the frame, work it a few times, and then inspect the part to see where the ink has been rubbed off. Do not attempt to rely on positioning parts on the side of the frames to do this since you cannot maintain the same exact relationship as when the parts are installed.



Note I am NOT using a vise to hold the sear while working it down with a Diamond EZE Lap. The most important skill you must use is your "feel" for when the hone is flat on the surface you are working on. It may be necessary to stop after every stroke to feel if you are in fact holding the hone flat on the surface. Watch with each stroke you take and note where the blueing is being removed by that stroke. This will tell you far more than I can with words.



See what I mean? I have taken just a few strokes, but it is apparent from the areas where the blueing is cut away that the surface is badly uneven and rough.



The results. Note that you can have too much of a good thing, and that I stopped working down the rough areas before completely removing the last flaw in the middle of the top edge. Follow the Diamond EZE Lap work with a hard, smooth stone to polish it.



Next look at the actual sear notch that holds the hammer back at full cock. Note that it is rather rough and does not contact evenly as indicated by the points where the blueing is worn off.

*UPDATE: The angle formed by the sear notch is 90° and you may need to change this angle to less than 90° if you reduce the pull weight below about 2 1/2 pounds for the hammer to cock securely. Use the LF EZLap or Triangular EZLap*



As with trigger jobs on most any other firearm, work on the sear surfaces is the most critical part of the whole trigger job. Shortest advice here is that if you make the angle more vertical than it is from the factory, the hammer will be more prone to "push off" as discussed earlier. On the other hand, making the angle slightly more horizontal reduces the tendency for "push off." So if you are going to err, err on the more horizontal plane. Horizontal and vertical here are with reference to the sear when it is installed in the frame and the frame held in a normal shooting position.

Make certain that you keep the surface flat. Don't "see saw" left to right and make the surface arched. Keep it flat.

*NOTE: We will be supplying the 1/4" No.11F EZE Lap shown with, in this orientation, the top side altered to less than 90°.*



Examine your work as you go. Watch where the blueing is being removed. Change the angle at which you are holding the sear relative to the diamond lap as needed. Remove only enough material to smooth this surface. I.e., it does not take a lot, so don't over do it. It is far better to put it together, try it, and take it apart a lot, but hone just a little. Follow the diamond lap with the hard smooth stone to polish what you just did.

You will notice that I am not suggesting just stoning. You will do a better job, I feel, using the fast cutting diamond lap, and then just smoothing up afterwards by stoning.

In fact I put so much emphasis on the diamond lap that we neglected to even include photos of stoning! Nonetheless, all parts were stoned for the final smooth finish.



This is the top of the trigger. I don't know how it was finished at the factory, but you can see how uneven the surface is where the blue is worn off. Levelling this surface of course gives more contact area, which equals less pressure per square inch of surface and an easier pull. Do not change the shape of this surface, only even out the high and low spots, and polish smooth.

Tip: As with the bottom of the sear, lap and stone in the same direction the parts travel in relationship to each other where possible. No matter how smooth a surface looks, it is actually a series of peaks and valleys cut by the stone or lap. It is better these peaks and valleys are running parallel to each other rather than across each other.



Top of trigger smoothed and evened up. Radius on top maintained. Again, smooth it enough, but not so much that you lose its shape in the process.



For reference, between my fingers, upper end of part is the face of the hammer where it hits the firing pin. Before you do anything to the hammer, run your finger across this edge I am pointing to. You will note also that only a small area has the blueing removed, so focus on such an area to lower it when doing your smoothing work. You should also mount the parts on the side of the frame again and pay close attention to how this radiused "nose" on the hammer contacts the sear notch.

Don't attempt to change the shape of this "nose." Just get the rough, as cast "bark" off of it, using the diamond lap and your stone, working in the direction the surface of the hammer travels as it moves down the face of the sear surface.

**UPDATE:** See tip #6, Next Page.



While not the clearest picture, you can see the radiused surface is just smoothed up.

Now assemble the frame, check pull weight, do all the safety function checks. If the hammer will "push off" you need to stone the sear on a more horizontal angle.

- TIPS:**
1. You will also find that just a little stoning of the sear surface can change the pull weight as much as a pound + or -.
  2. Stoning minutely changes the travel distances of the parts, so save setting the overtravel until the very last when everything else is done EXCEPT for installing the breech face plug. Remember, if you Loctite the threads on the overtravel screw, you are going to have to overcome it with that puny little allen wrench which loves to strip out. That is its favorite thing to do. So, next tip,
  3. If the overtravel screw socket does strip out, remove the trigger guard, get about a No. 50 or 1/16" drill bit and start drilling in the socket of the screw. This will usually drive it on through the hole. Much easier than swallowing rat poison, and much more fruitful.
  4. NEVER grind back the sear notch to shorten engagement. It creates a hazardous condition when the hammer is not securely cocked. I find I often must increase engagement so the hammer will not readily push off.
  5. If you keep the contact surfaces between the 'trigger and sear' and 'sear and hammer' centered with each other (ie. not bearing on just one side) and polish contacts to a smooth finish, you will sense no travel at all with this mechanism -- Only pressure on your finger.  
  
Hint, a short engagement is one way to cover up a rough travel. Smooth things up and the length of the engagement isn't an issue.
  6. Stoning the bottom side of the hammer nose (Where it engages the sear notch) flat can effectively increase engagement. removing material opposite this surface on the top side of the hammer nose also increases engagement. Just remember this when you get a nice, light pull but the hammer won't stay cocked!
  7. Changing the sear notch to less than 90° by bringing the contact surface up to a more horizontal plane increases the pull weight, making it necessary to go to a lighter trigger/sear spring. A lighter trigger/sear spring in turn may not rebound the hammer to half-cock, thus making it necessary to further shorten the hammer spring so the hammer will rebound properly.
  8. Shortening the hammer spring weakens it. Shorten it too much, and you get misfires.
  9. If you need to shorten the hammer spring and don't want to tear the entire frame down again, Yes, the hex nut on the grip/buttstock tenon DOES unscrew. Remove the hex nut to remove the hammer spring and strut.
  10. If the hammer won't cock, chamfer the edges of the hole in the upper end of the grip/buttstock hex nut tenon. I have found several instances where the hammer spring strut caught on the hex nut and prevented cocking the hammer. I have also found severe burrs inside the hammer spring hole that prevented the hammer spring from moving.
  11. If the hammer hesitates when rebounding or does not go to its second half-cock position (Yes, there are two notches it goes through), slightly smoothing the contact area between the upper end of the sear and the face of the hammer it rubs against may reduce the amount you have to cut off the hammer spring to get the hammer to rebound reliably.
  12. If after smoothing the contact surfaces shown in the instructions, you still get "creep", Ink the surfaces with a felt tip pen, assemble the frame, cock the hammer and release it a few times, then check where the ink is marred to see how the contact points meet. You do not have to have 100% contact for a smooth pull, BUT, the contacts must be fairly well centered. Contact on just the end of a surface puts things in a bind that shows up as creep.
  13. If you still get creep, look for burrs around the pivot pin holes inside the frame and also at the ends of the pivot pin holes inside the frame and also at the ends of the pivot pin holes through the trigger and sear.

Your comments are welcome.