

J.C. BRACONI

Discourses on the Topic of Preparation for GLUE-INS

(Editors introduction: J.C. Braconi has been one of the top two or three shooters on the European scene for the last couple of years. Just to show us that it has been no fluke, Monsieur Braconi came to the 1989 IBS Championships at South Creek. And, on a range that is universally regarded as the trickiest in the Northeast, proceeded to blow the doors off everyone (IBS or NBRSA, male or female, adult or child) in the heavy varmint class. I mean . . . it was fair humblin'). Without that win . . . an article on glue-ins by J.C. Braconi in these pages would probably have drawn only slight passing interest. After the win . . . the article will probably be memorized by hundreds of readers, word for word. There's nothing like a big win, by an unknown, to get the attention of the masses!)

The photos accompanying this article were taken some three years ago, and intended for my own files. The P.S. Editor has persuaded me to share them with the readership, and has made extravagant promises (money, fame, beautiful Hollywood starlets, dates with Madonna, etc.). I certainly hope that he is an honorable man in such matters. (Editor: perfect silence)



Photo #A

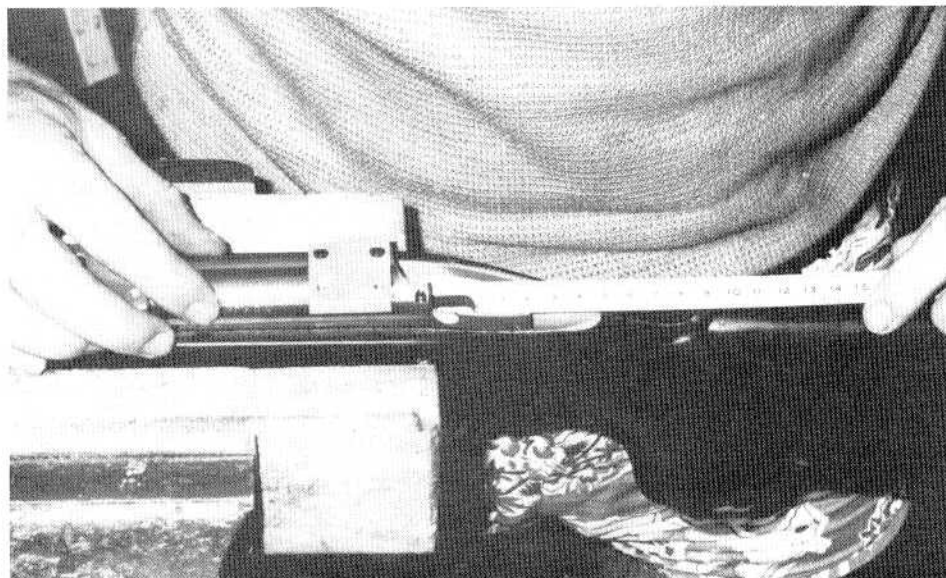


Photo #1

I have been reading Precision Shooting for ten years now, and I have never seen a complete how-to-do a glue-in article, with photos accompanying. Of course, before the editor started twisting my arm on this article . . . neither did I realize that he was a close personal friend of Madonna. (Editor: perfect silence). In benchrest, sooner or later everything becomes obsolete, replaced by a better mousetrap, sooner or later. At the present point in time . . . glue-ins seem to be here to stay, at least for the immediate future . . . so let's take a closer look at the process . . . while it's still in its prime of life. This is a glue-in that we are talking about here, a pillar bed, screw-in process is quite different.

Photo #A.) Obviously before a challenge such as a glue-in, one should light his pipe first. (Editor: okay, that's as much as our readership can handle for now. End of part one of the article. We'll go further, although slowly, in part two, next month). With the

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pipe lighting out of the way, now we get to the work part.

For purposes of this discussion we will work with a McMillan graphite stock, and a Hall action. The Hall action is round, and for just about all intents and purposes, we can say "round action", rather than "Hall" throughout here.

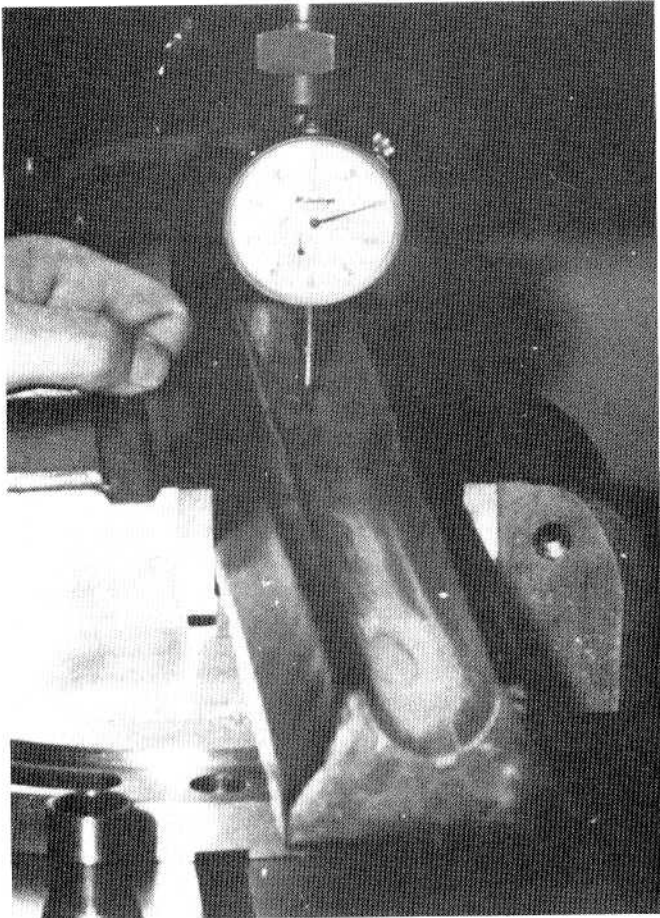


Photo #2

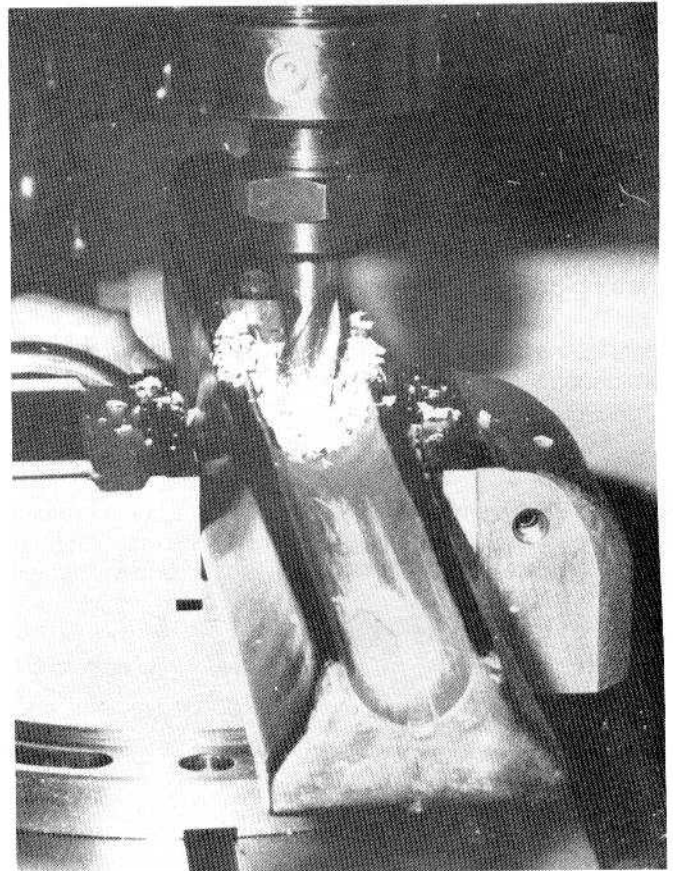


Photo #3

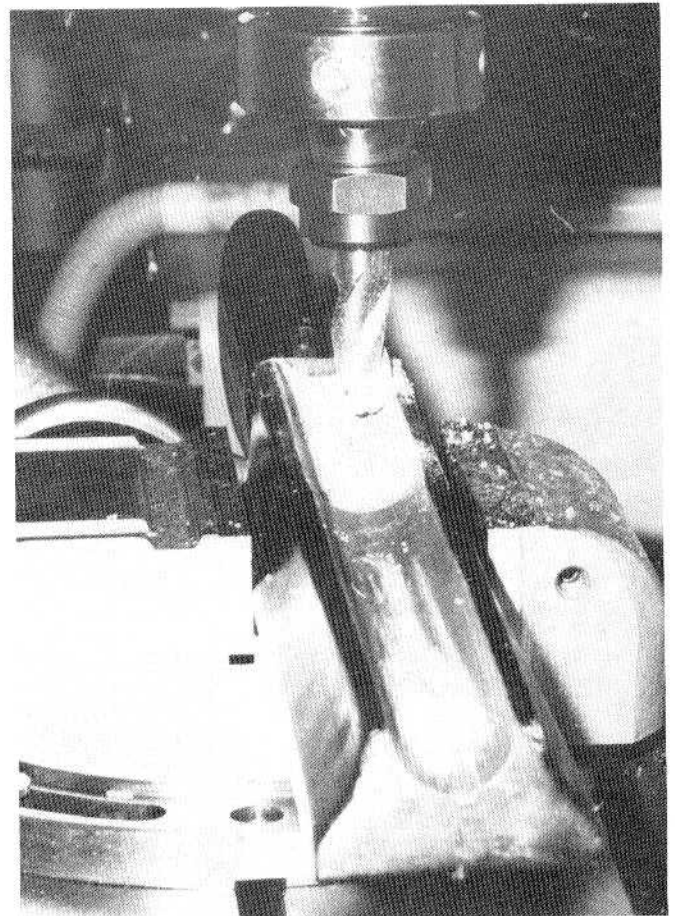


Photo #4

Photo #1.) Okay, we have a stock ... and an action. Just where do we put the action in the stock? (Editor: good gravy ... do gunsmiths have to deal with difficult problems like this on a daily basis? These guys are smarter than I realized!). I use 9 cm (3.5 inches, if you prefer) from the back of the trigger housing to the top of the step of the rear of the stock. Draw a line with a pencil in front, and at the end of the action.

Photo #2.) After I clamp the stock in the vise of the milling machine, and using a comparitor in place of the tool, I center and level the stock from both a length and width perspective. When you are at the deeper point, set the zero on the front wheel, and set the stop screw for the travel (R. to L.) on the lines drawn at front and rear of action.

Photos #3-4-5-6.) I now place a 20mm round headed tool (close to 4/5 of an inch), and using the cross and elevation diagram (see figure A drawing) as a guide, I do the milling job, starting from the center, and finishing with the sides. I use an air vacuum to keep the job clear of chips as I go. Note that using a round tool, and setting the center of the tool with the front and rear of the action, allows a half-inch extension of the future bedding beyond the action.

Photos #7-8.) Change the tool for a straight line 10mm (close to 0.400"). Return

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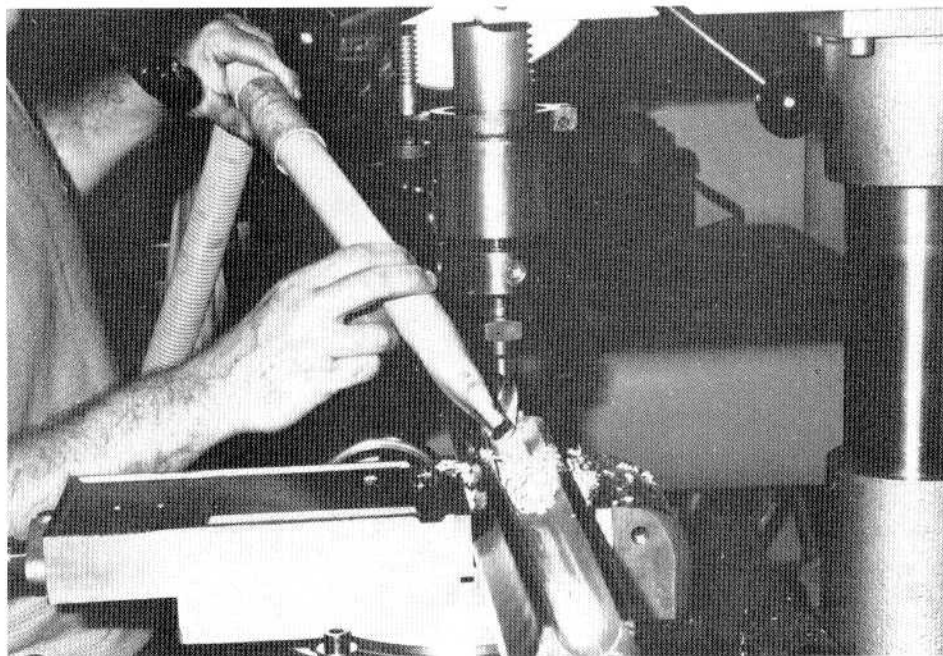


Photo #5

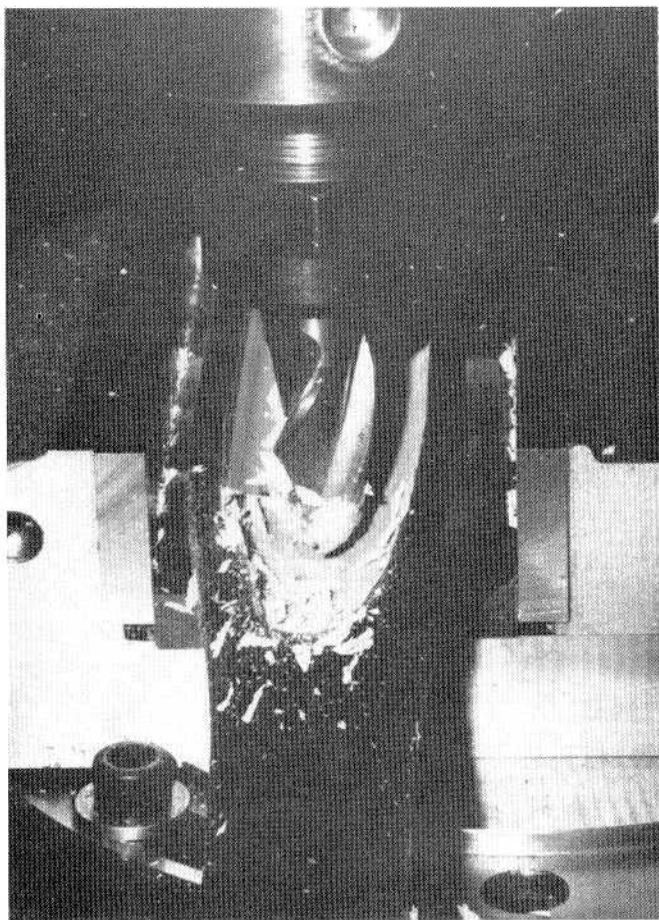


Photo #6

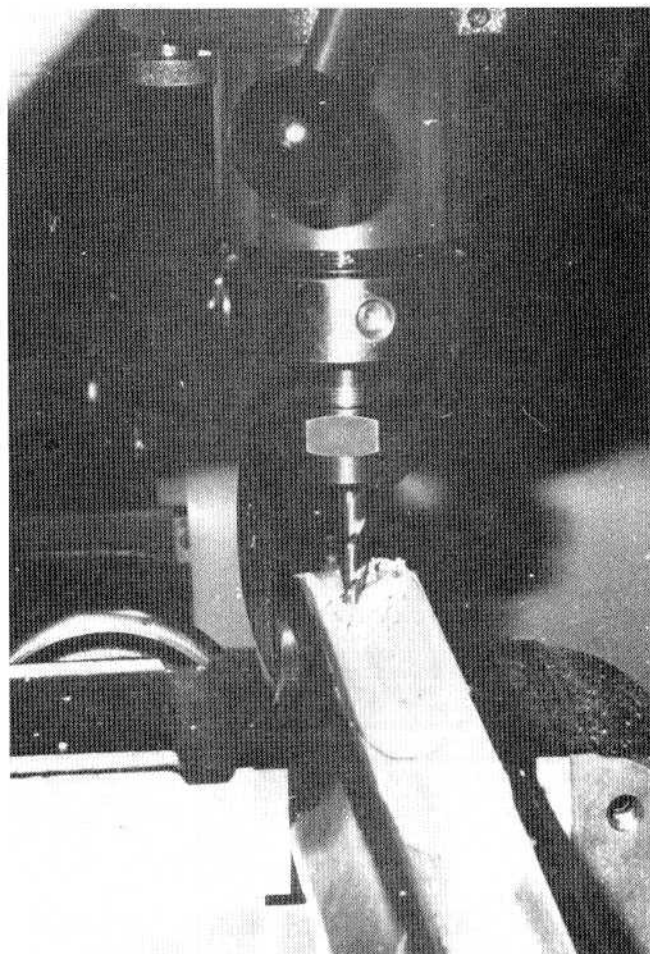


Photo #7

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to zero, and drill a hole for the rear trigger guard screw from top to bottom of stock.

Photo #9.) Drill a hole of 4mm (close to .160") midway at the end of the forend channel, and insert a large head screw in it. The head should be filed or milled to get a little round channel on it. It will keep the barreled action in line throughout, and will insure a good barrel clearance with the stock.

Photo #10.) Measure the length of the rear hole, and adding 8mm (close to 0.320") to this measurement, cut a piece of 10mm (close to .400") steel tubing of the proper length (through the stock). The internal diameter of the tube must allow a good clearance with the rear trigger guard screw. After deburring the tube, insert it in the stock for control.

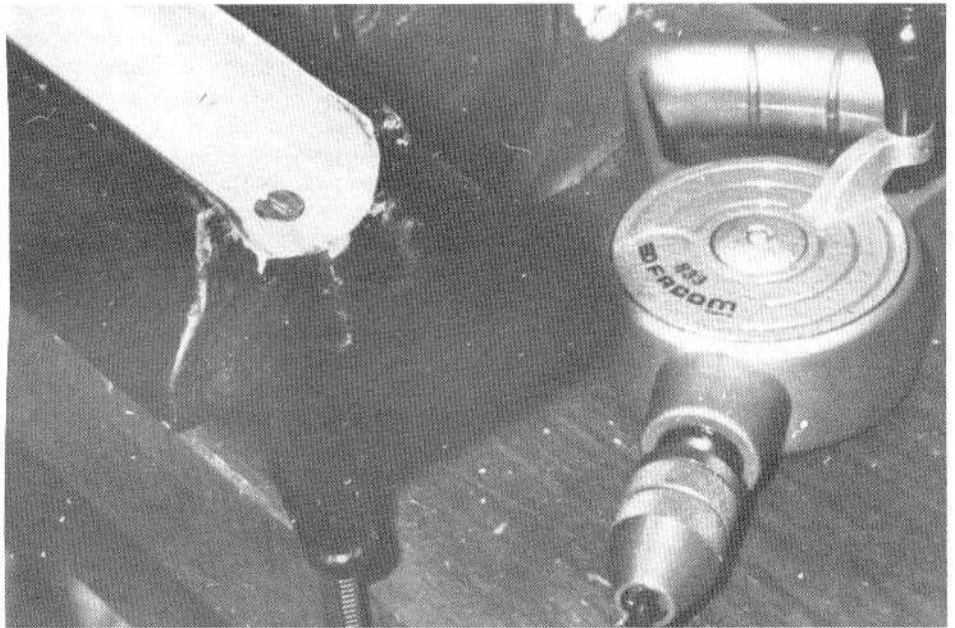


Photo #9

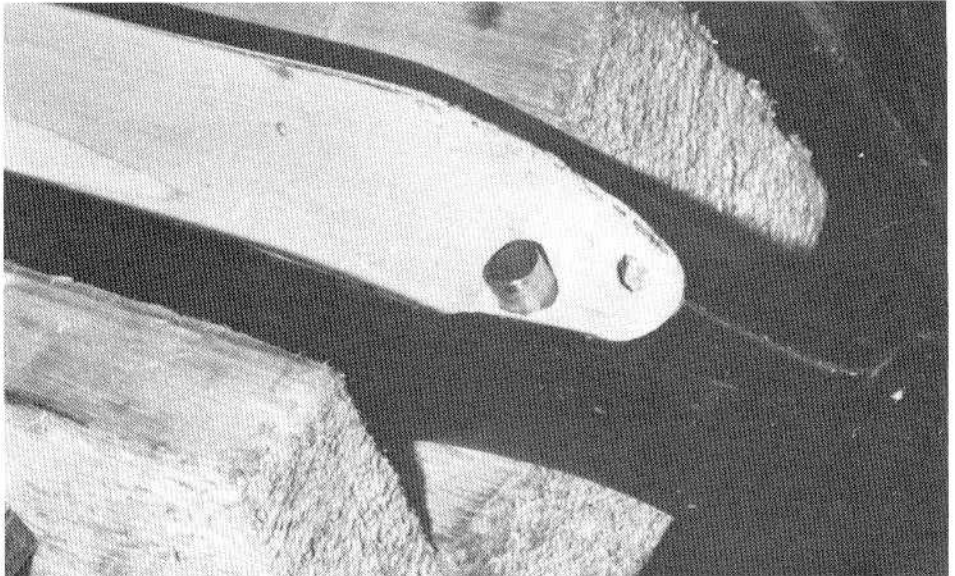


Photo #10

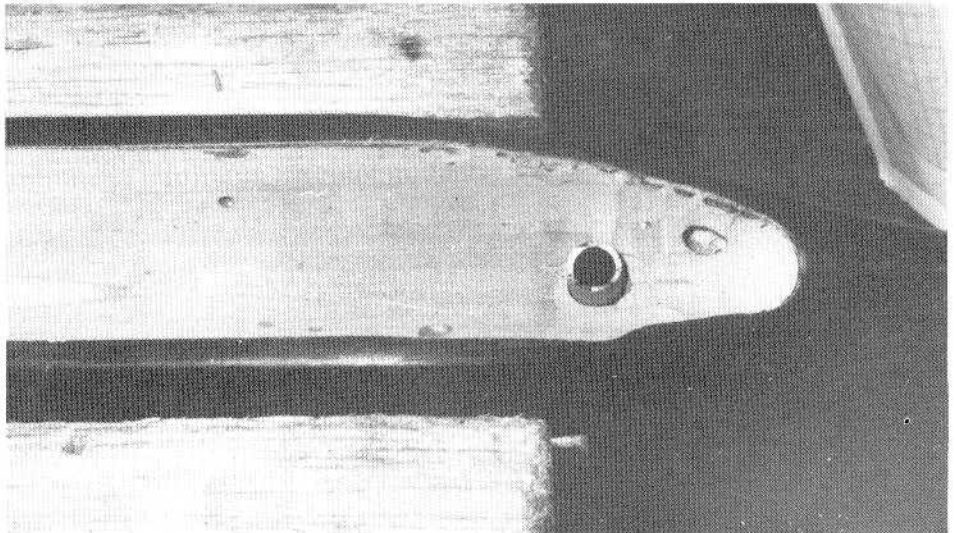


Photo #11

Photo #11.) Next, file the external face of this little tube to get some clearance for glueing, clean it, as well as the hole in the stock, with trichlorethane; dry it with air pressure. Using epoxy, glue the tube in place. You may find a small piece of adhesive tape will be a big help in holding it in place at the start of this step. Now, wait 24 hours before going on with the process. (Editor: our writer does not make clear whether you must sleep in the shop during this period, or not.) This glued in tube has two functions, both important. First, it will be a substantial help during the actual glue in; that screw will help keep things in the place where you put them . . . and where you want them to remain. And second, glue in or not, I personally am very much in favor of a rear screw into that action. If, for some reason the glue in were to suddenly fail, I would like to have the barreled action stay in the stock.

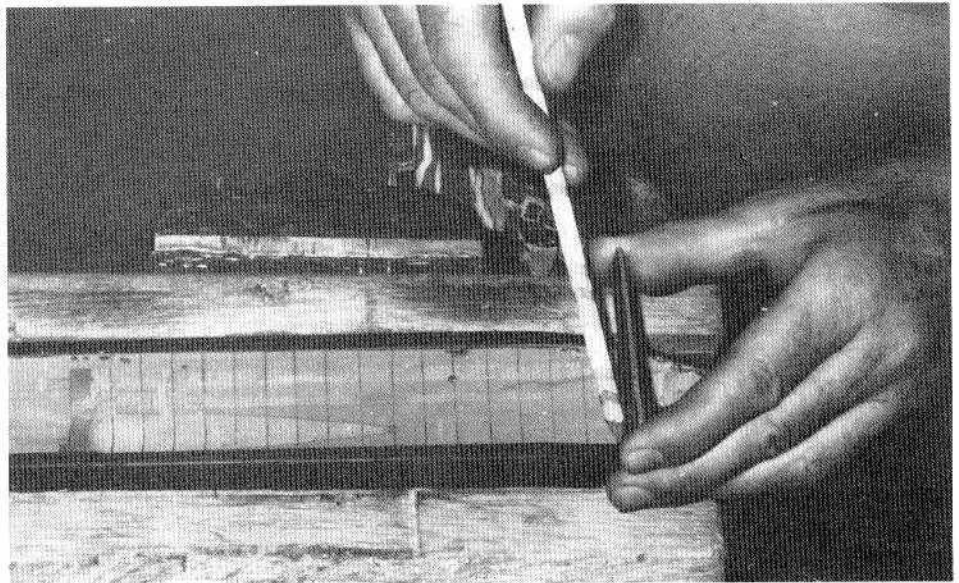


Photo #12

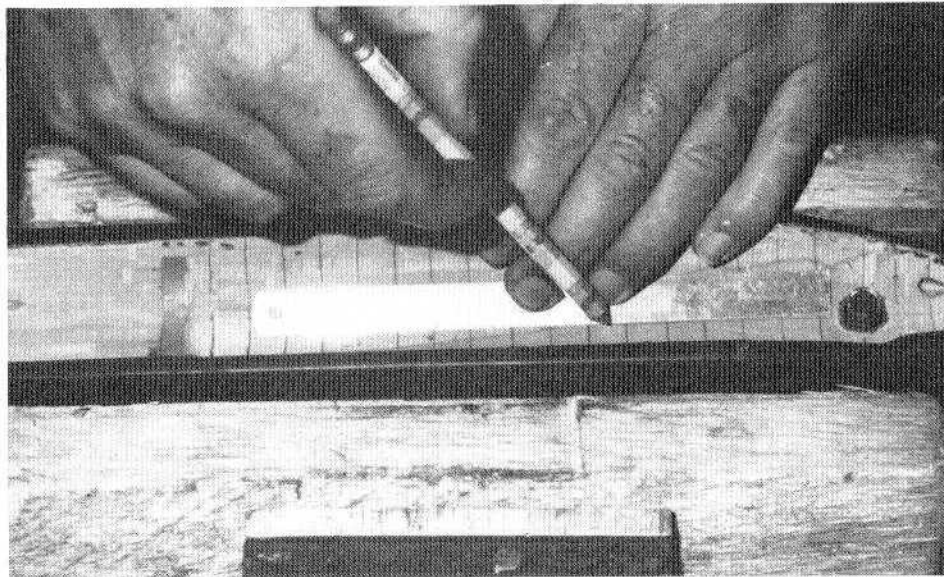


Photo #13

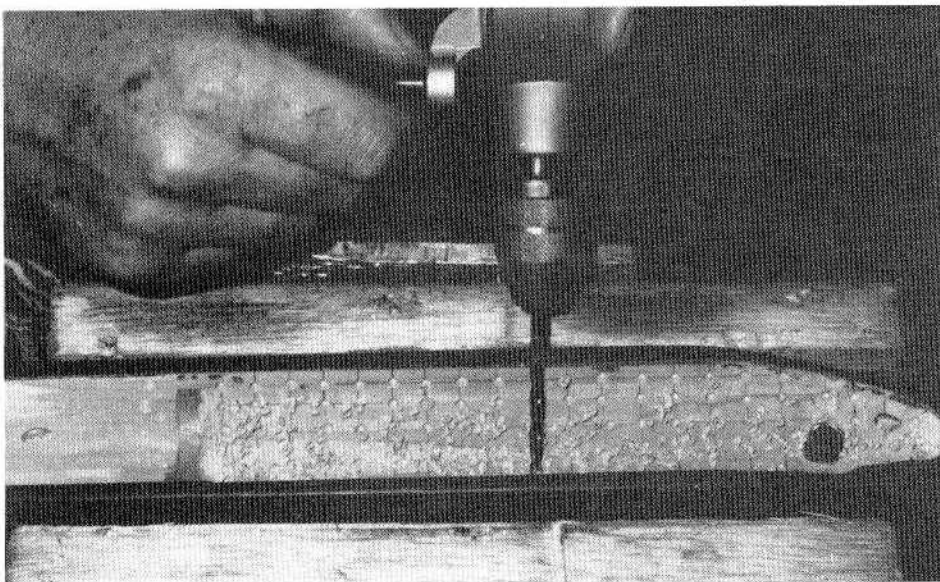


Photo #14

That keeps the problem confined to an equipment problem, rather than a potentially much bigger problem. End of phase one.

Photo #12.) Using a steel bedding gauge that I have made, I draw parallel lines spaced 10mm (about 0.400") for the length of the action area in the stock.

Photo #13.) Now I draw further 10mm parallel lines for the action length in the stock, at right angles to the lines drawn in the step above.

Photo #14.) Using a hand drill, with a 3mm insert, (about 0.120") I drill 3 mm deep holes at each crossing point of these lines. This helps the bedding material to adhere to the stock.

Now, sand slowly the entire bedding area. While you are at it, it's a good time to start sanding the stock exterior, because

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the bedding compound will do nicely to fill in any large holes that might turn up on the stock's exterior. Clean every part of the stock with trichlorethane and dry with air pressure. Keep the stock in a clean place.

Now, take your barreled action (we do not suggest you take the upcoming steps with just the action alone). With a thin adhesive tape, mask the trigger housing, the loading port, and the bolt handle ramp. On the barrel, just in front of the action, wrap a large, thick tape, the right diameter to give you adequate clearance of the barrel in the barrel channel of the stock. Coat the barreled action with mold release agent. Care must be taken with this step; if you miss any part of the assembly with the mold release, then you may find yourself with a partial glue in . . . well before the point in time that you wish a glue in. This will cause you to become an unhappy camper . . . and we like to see gunsmiths happy (Editor: I've never seen a happy gunsmith . . . most of them have persecution complexes . . . at least, after watching me shoot one of their finest creations).

Now some words about the bedding material. There are a lot of them in existence, just like firearms magazine editors. Some are better than others. (Editor: he's toying with me; I know he is). From a personal viewpoint, for ten years now I have used the Devcon products. I have used steel, aluminum, and now titanium, all with success. Rifles bedded ten years ago continue to look, and perform, today just as they did ten years ago. I have also used Tra-Con for glue ins.

Devcon-F Aluminum is a bit of a classic for such a job. When working with this material, for an average sized cylindrical action (1.5" diameter, eight inches long), I use 12

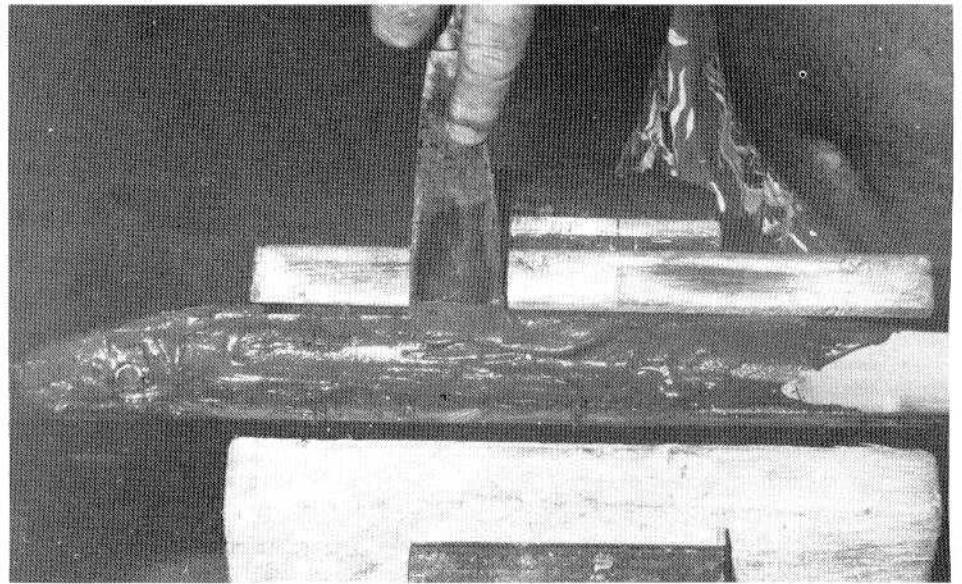


Photo #15

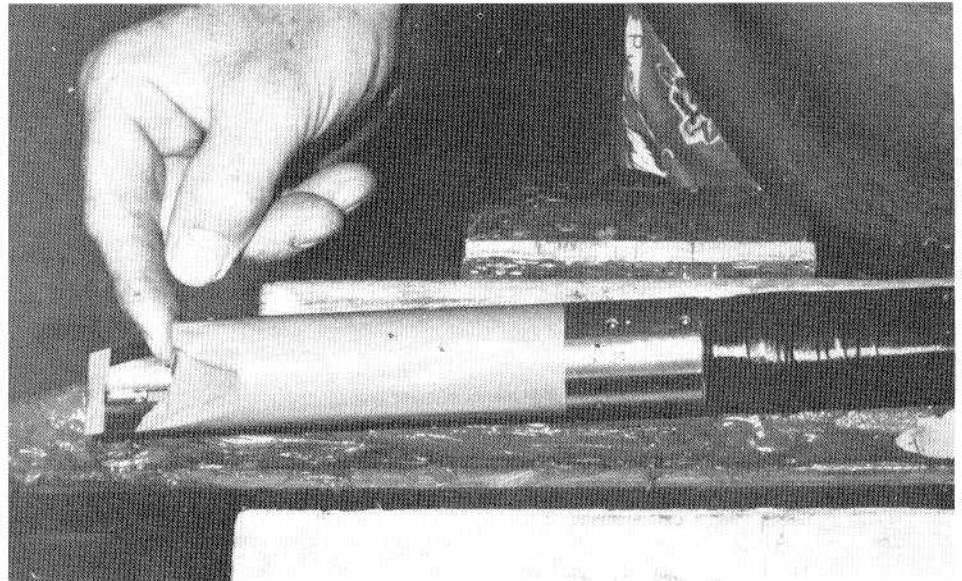


Photo #16

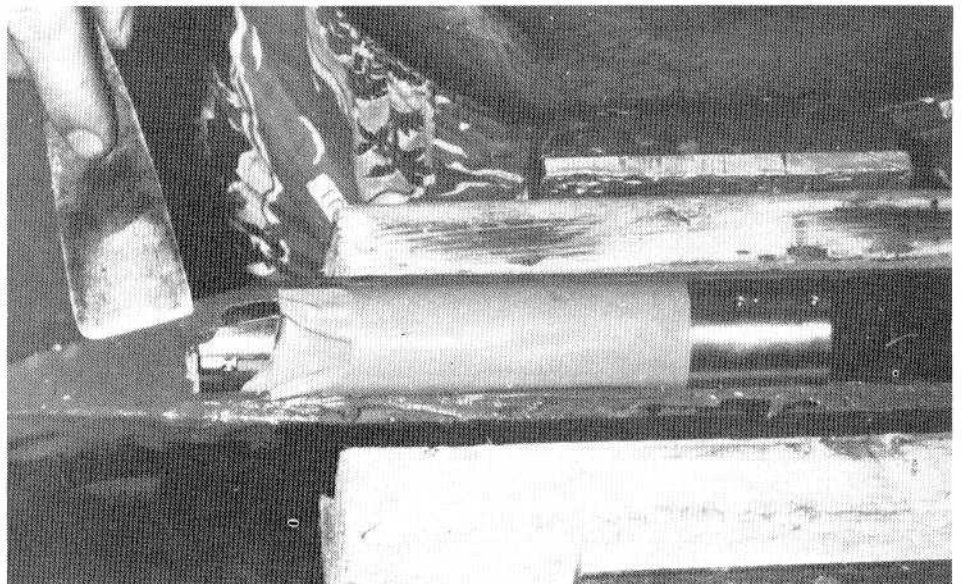


Photo #17

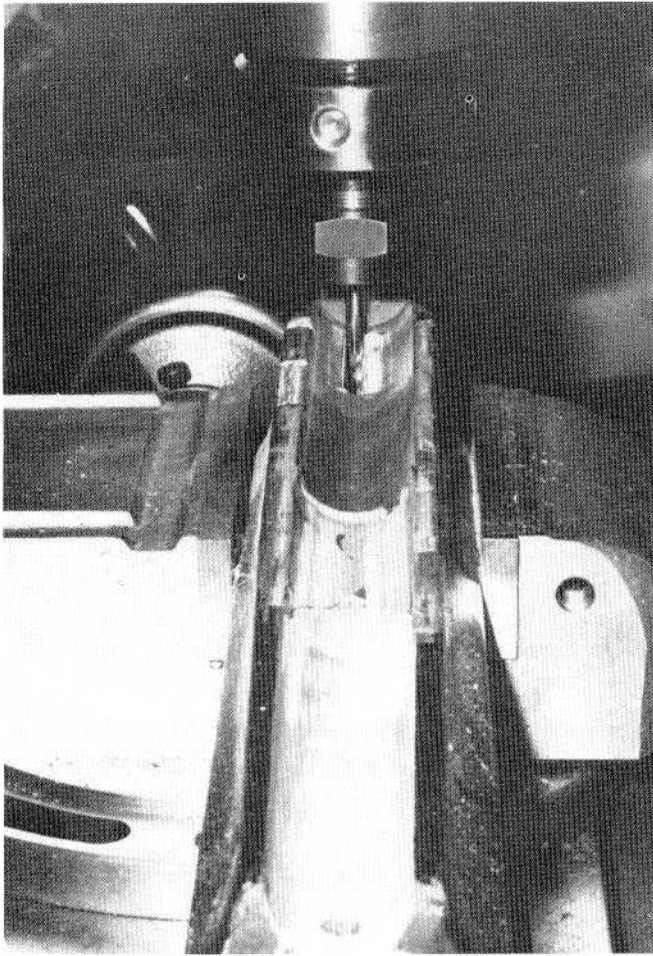


Photo #18

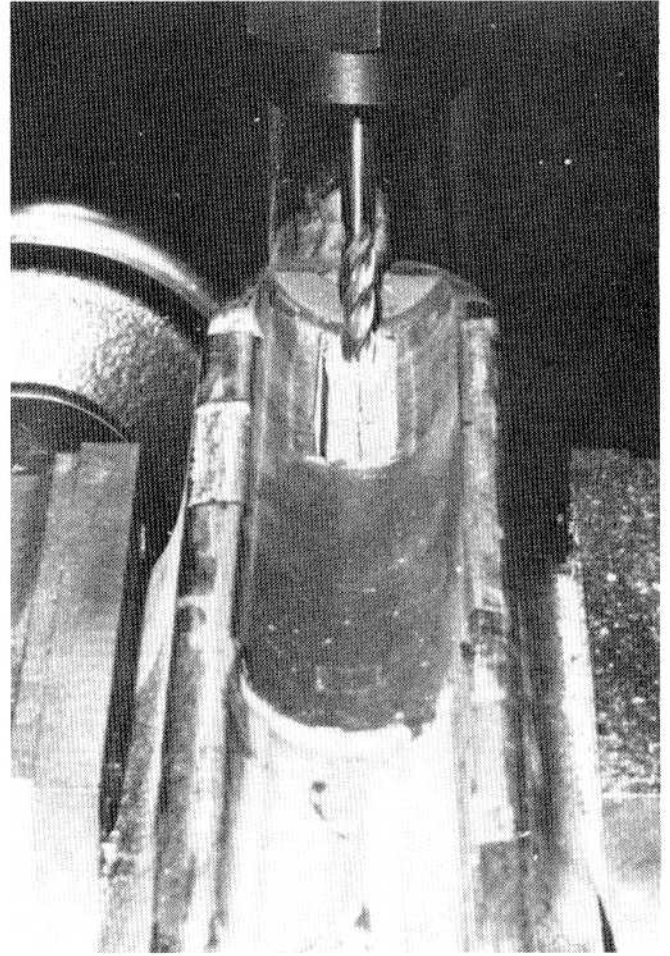


Photo #19

spoons of resin with 4 spoons of hardener. If one prefers to work with weight, then 4 ounces of resin with 4 spoons of hardener. The process is described clearly, and well, in the instructions packed with the Devcon products, although I am aware that many will regard reading instructions as a sign of weakness and uncertainty (Editor: certainly the mark of a timid man). You will need to work with a clean mixing bowl, and with clean tools, mix the compound well, with a blade, and when you have a paste of proper consistency, you should already have your stock clamped in a vise, with adequate room around the vise for you to work in. Pay initial attention to the little holes that you have drilled, try to prevent air being trapped in them. Apply the mixture to the sides and bottom of the action opening. Let it sit for five minutes. You will find that some of it has flowed downward from the sides. Plan on this, it happens invariably in all countries that recognize the law of gravity. We suspect that it works in other countries as well. Photo #15.)

Photo #16.) Now take your barreled action, and with care center it in the mixture, aiming the threaded rear hole of the action for the center of the pre-epoxied tube in the

stock. Roll adhesive tape around the rear trigger guard screw, enough to just fit inside the tube. Put some release agent on the screw, and on the final few threads, which should not be masked. Now screw gently into the action bringing it down into contact with the tube. Put a bit of pressure on the front of the barrel, to get contact with the head screw in the forend. When you have contact at these two points, take three or four turns with adhesive tape around the barrel, to clamp things together. Check again the tension on the rear screw. If everything seems to be all right, then take a deep breath, and relax. You may be able to see an excess of compound coming out on the sides of the action. This is to be expected; don't panic. (We'll tell you when to panic).

After approximately five minutes at room temperature, the excess of the mixture will stop moving. With the same blade that you used for applying the compound, begin to clean carefully. You can, if you so choose, start to use that excess compound. I have a glass of water near me on the bench, for wetting the blade, which keeps the compound from adhering to the blade. I use the excess compound so recovered for molding the grip, and other portions of the stock, as I

may like and choose.

Now carefully clean all your tools, and leave the stock in the vise for 48 hours. The three pieces of wood that you see in the photo are balsa wood; the kind used in making model airplanes. This wood allows one to get a good, firm hold with the vise without harming the stock.

Two days later . . . don't forget to unscrew the rear trigger guard screw!! Next, be sure that the vise is still gripping the stock firmly. Now, take the barrel firmly in your hands, and slowly apply upwards pressure. If you have everything properly coated with release agent, you will shortly hear a crackling noise, and the barreled action will come free in your hands. If this is your first such job, that crackling noise . . . for the novice . . . is invariably good for a few missed heartbeats! Take off all your masking tape, and clean the barreled action carefully with trichlorethane.

Photo 18,19.) File off any large excess of the bedding material on your stock. Now center it in the vise of your milling machine as previously described. When you are sure that you are in the center of your bedding (always use the deeper point), set your front

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wheel on zero. Now take a measurement on your action for the trigger housing. If you have a bracket on your trigger, remember to include its dimensions as well. Using a 6mm tool (close to 0.240") we now mill the stock to allow for the insertion of the trigger, with a reasonable clearance.

Photo #20.) Next, using a round headed tool, 20mm, cut through the side of the stock for the bolt handle, and then, with a 5mm tool (close to 0.200") cut the groove for the rear of the bolt.

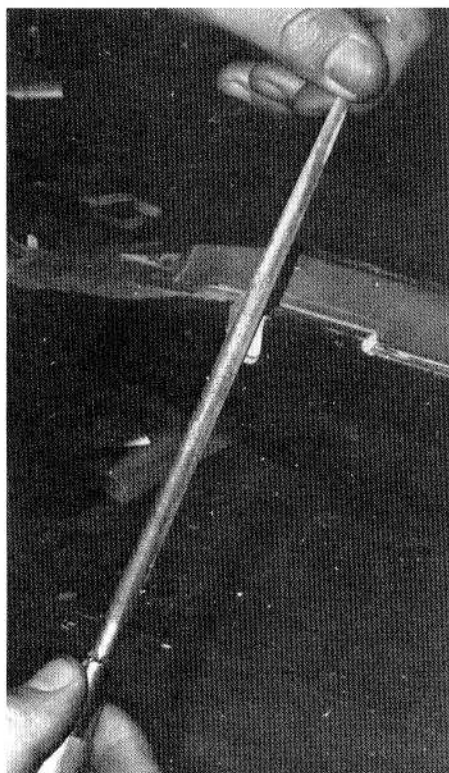


Photo #21

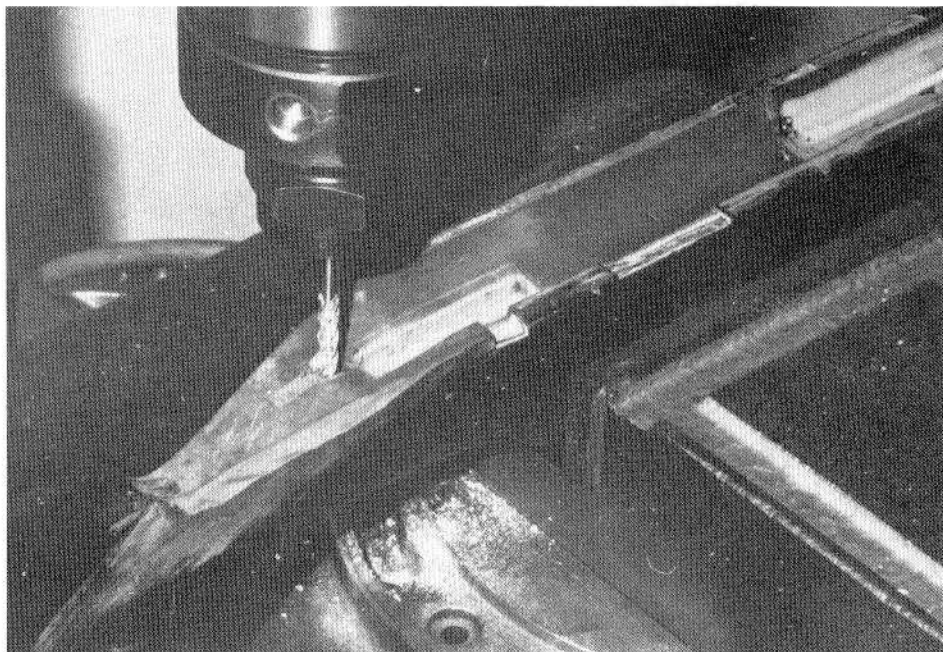


Photo #20

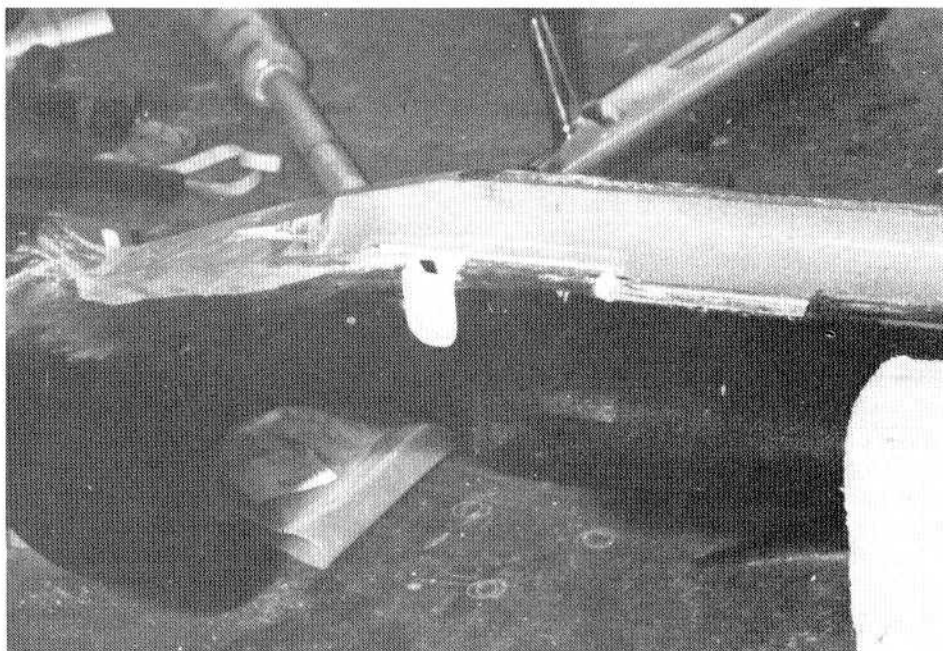


Photo #22

Before removing the stock from the milling machine, with a 10mm tool make the initial cutouts for the bolt handle and the loading port. Next you return your stock, and taking the bottom face of the steel tube as a reference, draw on the bottom of the stock the front and rear "rounds" of the trigger guard. Now set up a 16mm straight tool (close to 0.630"), and mill the place of the trigger guard in the stock. Don't exceed the thickness of the trigger guard (anywhere from 0.120" to 0.140"). Be careful when you mill the steel tube, as you have this part of the stock out of the vise of the milling machine. After checking that the trigger shoe does not touch the trigger guard, we return to the vise on the work bench. Now we need to file by hand the channel for the bolt handle, being careful to have adequate clearance between the handle and the stock. Photos 21,22.)

Photos 23-24-25.) Keep in mind that the stock is yet to receive coats of primer, paint, and possibly some sort of sealer on top of that; you must make mental allowance for all this when you are fitting things around the action area.

Photos #26-27 show the work done at the butt end of the stock for a switch barrel rifle. This is made to reach the channel (or channels) that carry the extra weight to reach the 13½ pound weight limit of the heavy varmint class. The back portion of the stock is first sawed, or milled, square with the top of the stock. Next a piece of clear, hard plastic is epoxied onto it, with two threaded cylinders (to hold the removable weights) in sandwich fashion, one above the

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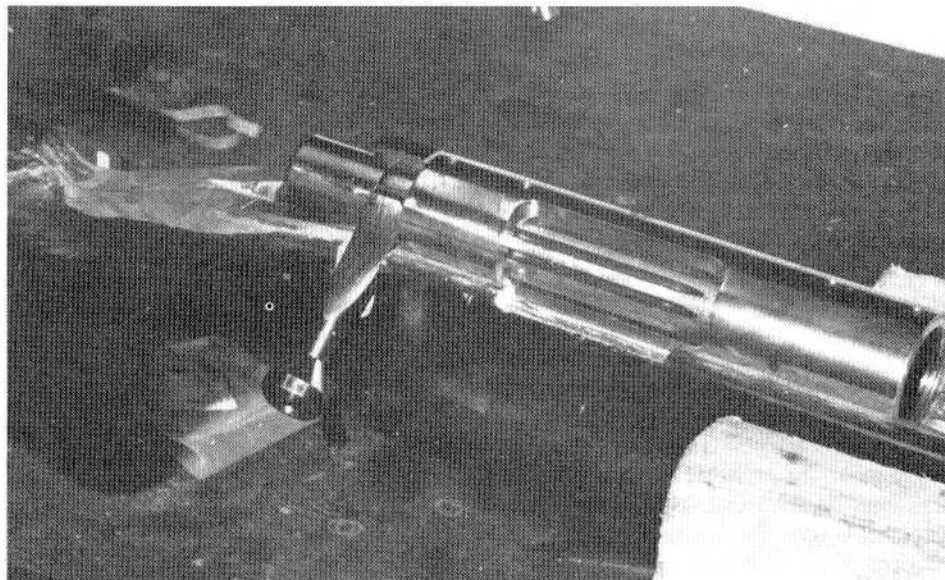


Photo #22B

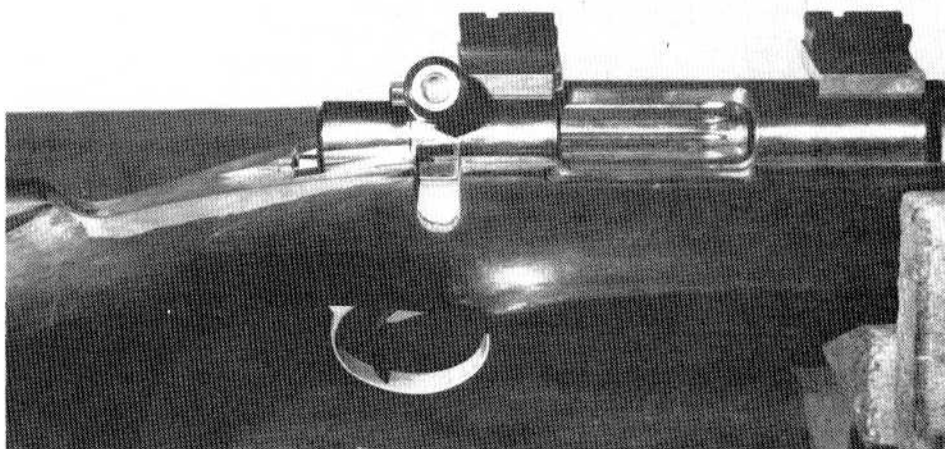


Photo #23

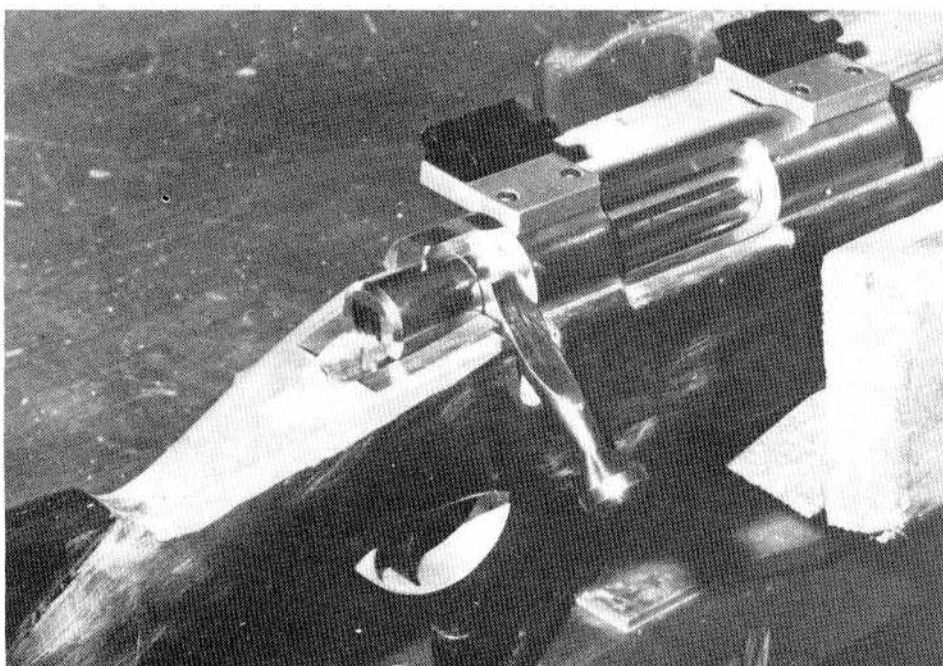


Photo #24

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other. Twenty four hours later, filing by hand, you fit the shape of the stock. Then insert the aluminum tube (or tubes) into the stock. For this I personally use old bicycle pumps; they are round, and have a threaded notch on the other end, which facilitates the job. In the picture you can see the milling work on the pad to reduce the weight.

Conclusion: I am not exactly an adept of the English language. The editor, who rewrote the article, is not generally regarded as the living reincarnation of Harry Pope . . . thus, some of the points that I was attempting to make may have come through a bit less than clearly. However, I strongly suspect that you got the main points that I was making, and will be able to fill in the less-than-clear points yourself, without too much head-scratching.

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France

P.S. Since it's Sunday, and I live on the French Riviera . . . it seems like a good time to go to the beach . . . after all that work.

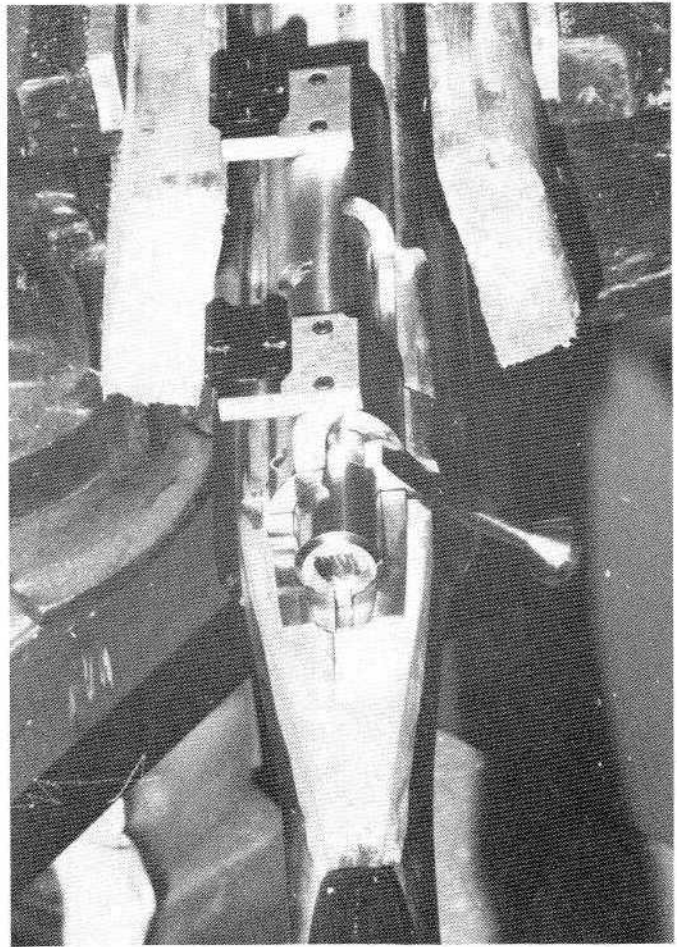


Photo #25

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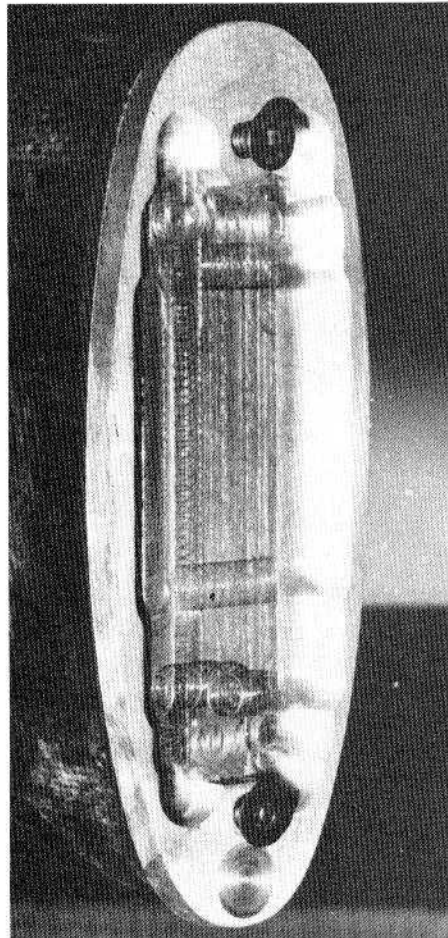


Photo #26

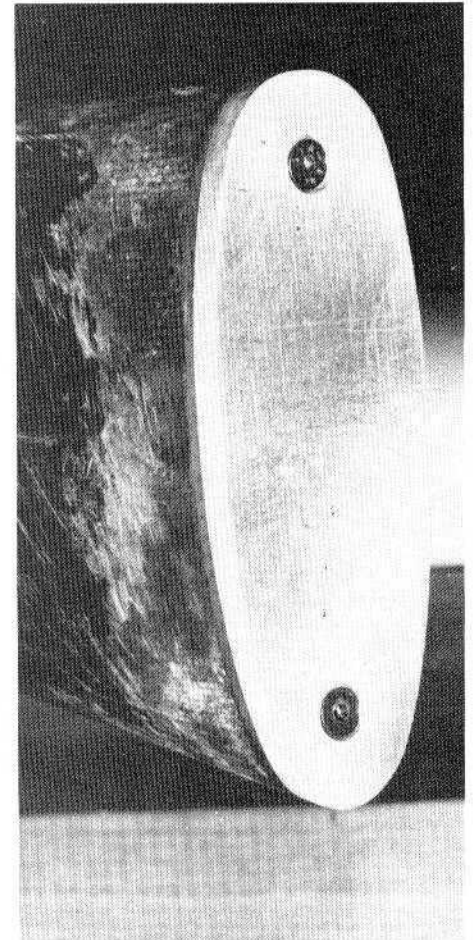


Photo #27