HOW DO YOU SWAGE BULLETS?

There are five different ways to swage bullets today. You can use:

(1) A POUND DIE
(2) A RELOADING PRESS
(3) The CORBIN MITY MITE PRESS
(4) The CORBIN MEGA MITE PRESS
(5) The CORBIN HYDRO-PRESS

Each of the five methods has certain advantages. The pound die requires no press, but instead, uses a mallet. It is somewhat lower in cost because you do not need to purchase a press, but it is much slower to use and doesn't produce jacketed bullets. It is ideal for swaging large caliber lead bullets, and is often selected by replica black-powder rifle shooters who wish to use an authentic reproduction of the earliest form of swaging die (from the 1890's).

The reloading press system is economical since most handloaders already own a suitable reloading press. It is limited to smaller rifle calibers (from .257 to .224) and medium handgun calibers (from .357 to .25 ACP) because of the inherent weakness of the slotted ram. There are certain design restrictions imposed on this system by the press, so it is not ideal for special work or custom calibers. Corbin makes standard calibers and shapes only, in this system. The cost is thus kept low for the quality. Speed is greater than the pound die but less than the other, special swaging systems.

The Corbin Mity Mite system uses a special horizontal ram press with more power than any reloading press built. It is much faster than a reloading press since it ejects the bullet automatically on the back stroke. The dies for this system, and the matching punches, do not interchange with the reloading press system. They are made to fit into the RAM of the press, instead of the press head. Calibers from .14 to .458, tubing jackets with walls of up to .030-inch thickness, and weights up to 450 grains, can all be swaged with the Mity Mite. Custom

work is done in this system.

The Corbin Mega Mite system is based on a massive machined steel press that can handle both reloading and bullet swaging. It can accept ANY of the Corbin dies, including those for the Hydro-press. This ability to interchange various kinds of dies can be important to some owners. However, there are limits to any hand-powered press. The amount of force the Mega Mite produces is awesome, but still less than required for certain large caliber, heavy-jacketed production work.

The Corbin Hydro-press system is the ultimate in bullet manufacturing today. It features automatic stroke and pressure control, electronic sensors and timing, programmable stroke control, and many other advanced concepts that place it at the top of the list for custom bullet firms around the world. Any caliber from 20mm cannon to a 10 gauge shotgun slug can be swaged, in virtually unlimited weight or style. Solid brass or copper rod can be formed instantly into bullets of higher precision than lathe turning. Lead wire can be extruded like toothpaste. And the press adapts easily to standard reloading dies for the convenience of automatic sizing and seating.

Any of the various swaging systems use the principle that cold metal will flow under sufficient pressure and take on the shape of the vessel holding that pressure. The swage die is a very strong, highly finished vessel for containing the pressure. You swage the bullet in all these systems by driving a punch against the material while it is held within the confines of the die cavity. Upward expansion from the internal pressure created is the key factor in forming the bullets.

Reduction in diameter is called "drawing". Remember, swaging always expands the bullet or material upward in diameter.

Drawing dies are used to reduce the diameter of an object, such as a bullet or a piece of copper tubing or a jacket. They differ from swaging dies, in that the drawing die has an open top and only one punch is used. The component is pressed through the die and out the top. In passing through a hardened constriction, it becomes smaller.

Drawing has serious restrictions when applied to finished bullets, and can only be used for very limited amounts of reduction. But for reforming jackets and making copper tubing into jackets, it is a valuable tool.

If you try to put a piece of lead or a jacket into a die that has a smaller diameter of cavity, the material will be forced down in size and will exert a strong pressure against the sides of the die. When the pressure is relieved, by ejecting the component, the material may exert a certain amount of springiness, and become slightly larger than the die cavity. In making swage dies, the die-makers have to contend with the various amounts of spring-back in different hardnesses of jackets, different thicknesses of jacket wall, and other factors. The die itself is normally a different diameter from the actual finished bullet that comes out of it.

What this means to you as a potential bullet-maker, is that you should NEVER try to force anything into a swage die. If it won't fit easily, don't push it in. At best, it will make the wrong diameter of bullet. But generally, it will stick fast in the die and require special techniques to remove. And at worst, it can generate enough pressure to break the die!

In the following chapters, we'll discuss the various methods of making bullets in more detail, one system at a time. Bear in mind that there are hundreds of possible variations on the techniques, depending on what you want to make. It would be impossible to send this manual to you by mail if every style of bullet were to be described detail, with each step required to make it. We have to give you the basics of making two or three styles, and refer you to the more detailed technical books for advanced techniques.

It is far more important for you to understand the principle differences between lead bullet swaging, semi-wadcutter (and jacketed wadcutter) styles of swaging, and the styles that bring the jacket into the nose curve or ogive portion of the bullet. These three basic kinds

of bullets form the basis for everything else. If you understand how to make them, then variations such as rebated boattails, liquid-filled internal cavities, partitions, and other advanced designs are fairly simple to pick up. They aren't different: they just expand a bit on the basic techniques.