

## Detailing Armor With Bolts

by Glen Martin

Early armored vehicles were bolted together, much like ships of the era. Eventually, the deficiencies of this approach were brought to light and superior welding techniques became the standard. However, bolted fittings never quite went away, and even in modern times continues to be common. Sometimes you encounter an armor kit that depicts the bolts sloppily due to molding limitations, or misses them completely to simplify the engineering. Adding or improving this detail can really juice up a model, and it isn't as daunting as it may seem.

The materials involved are few. Just a scalpel, liquid styrene cement, and the bolts. The bolts? Search out your train shop and ask them what they have. Commonly stocked are bolts by Grandt Line and Tichy Train Group. These come in different shapes, from hex bolts to domed rivets, in varying sizes. Don't let the packaging mislead you about scale and whatnot. Most often their actual size is provided in inches, but its easy enough to shop by eye unless you are cracking with a caliper!

Next, size up your kit and prep the surface. If the existing details are to be replaced, carve them off with a scalpel, doing so carefully to avoid damaging surrounding surfaces. Be sure to sand the surface down flat so the bolts lie realistically. Now comes a decision time. Note from the picture that the bolts come on a stem, and the choice is yours to either snip off the bolt head or keep the stem attached. If the stem is left attached, the bolt can be inserted into a hole drilled into the model surface. Probably the quicker method is to use the bolt head only, and "float" it on the model using liquid cement. Do this by picking up the bolt head with your scalpel and placing it in position. Adjust the final placement if desired quickly, before the cement starts to cure. Repeat this task for as many times as needed. Since the bolt heads are styrene, their bond with a styrene kit will be strong and durable. If they are installed on a resin model, CA glue will be necessary, which gets complicated since it cures very fast. Use a slow-setting formula if possible.

That's it! Try it out, but whatever you do, know when to stop and if you judge, don't be a "bolt counter."



VM/Maquette Valentine model, which happens to have lots of bolts that are poorly molded. I used Tichy Train Group rivets to replace the faulty ones, seen on the roof near the turret opening.