

THREE SNEAKY WAYS TO MAKE "SPOKE" WHEELS

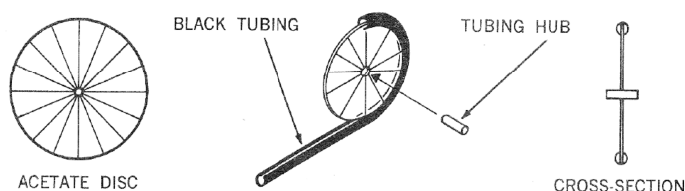
By W. C. Hannan

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While nothing is more to be admired on a flying scale model than genuine spoke wheels, the amount of time and patience required to make them causes many modelers to shy away from the project. Unfortunately, substituting "solid" wheels is a sorry compromise indeed. (Sorta like putting dihedral in a Fokker Triplane; anyway you view it, the results look terrible!)

One rather obvious solution to this dilemma, is to find a plastic car or motorcycle kit, and utilize the spoke wheels contained therein. However, the spokes generally are too "coarse" appearing, and in some instances, the weight of this type of wheel may be a deterrent. Which brings us to the subject of this pamphlet, "pseudo-spoke" wheels.

SM-1 Sneaky method #1 is ultra-simple, and suitable for lightweight models.



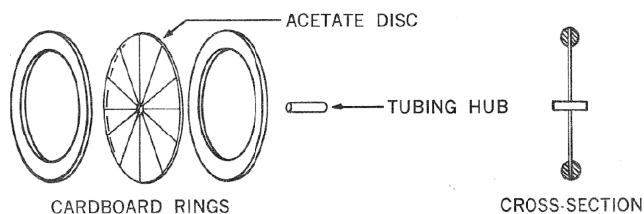
The "wheel" itself is cut from fairly thick acetate sheet, using a drawing compass that has been fitted with a needle, in place of its pencil lead. By using this tool to score a circle into the acetate, a clean round disk may be produced. Next, scribe the "spokes" lightly into the disk, using a sharp needle. **CAUTION:** if the lines are too deep, they may crack during hard landings.

An alternative method of simulating spokes, is to draw them onto the acetate disc with a ruling pen and white acetate ink (available at art supply stores) or thin silver dope. This requires care and patience, but produces a more shock-resistant wheel.

The "tyre" as our English friends call 'em, is made from a section of black tubing which has been split down one side. Model aeroplane fuel tubing can be employed, or for smaller tires, electrical "spaghetti" tubing works well. The best adhesive that we've found to secure the tubing to the wheel, is contact cement. It is somewhat difficult to avoid a slight lump at the juncture of the tubing ends.

Finally, the wheel hub is made from a short length of 1/16" diameter aluminum tubing, which is glued securely into the center of the acetate disc with model cement. For ultra-light models, the hub may be made from rolled paper.

Sneaky Method-2. Similar to SM-1, this ploy uses cardboard

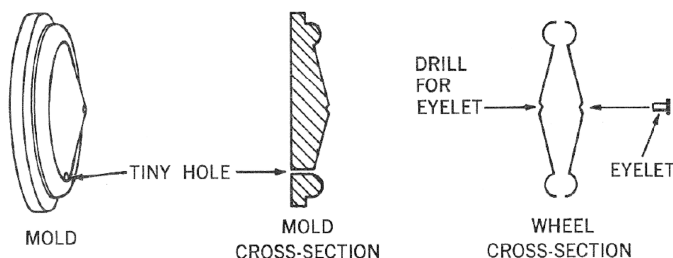


rings glued onto both sides of the acetate disc, to represent tires.

Cardboard is used, rather than balsa, as the wood has shown a tendency to crack under hard landings. The rings may be cut from any suitable thickness cardboard. (We use artist's illustration board.) The rings may be sanded to shape, and colored flat black with plastic enamel or India ink. If you are really in a hurry, use a black felt marking pen. For the neatest results, color the rings prior to gluing them to the acetate disc.

The disc, itself, as well as the hub, is produced in the same manner as shown in SM-1'

Sneaky method #3 is, by far, the most esthetically effective, but alas, requires the most effort.

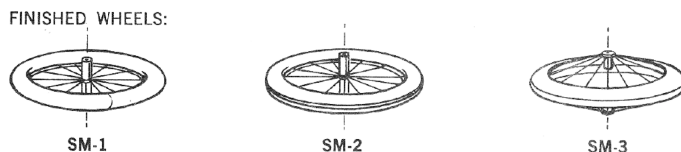


This subterfuge makes use of a Mattel Vac-U-Form toy to mold the wheel and tire in halves, from clear plastic sheet.

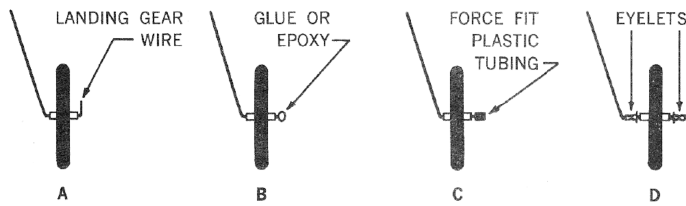
First, some sort of pattern or mold is required. Sometimes, one can find a plastic or hardwood wheel of an appropriate size to use. If not, a mold can be produced from wood, with the aid of a lathe. If you do not have access to a lathe, use a hand drill, grinder, or drill press. Almost anything that revolves can serve as a primitive lathe. Merely hold a file, emery board, or a folded piece of sandpaper against the revolving wood until it assumes the desired shape. (See the illustration above for a typical mold shape.) Just remember that any irregularities or rough spots in the mold will be faithfully duplicated in your finished wheels.

A tiny hole must be drilled near the rim of the wheel mold, as shown, in order for the plastic to be pulled tightly down into this area. Follow the regular Vac-U-Form instructions procedure to form a total of four wheel halves. If desired, "spokes" may be drawn on the inside of each wheel half. Actually, these wheels are almost equally effective without the spoke drawings.

The contact cement supplied by Mattel is used to join the parts together. The tire portion of each wheel may then be painted with flat black plastic paint. For hub bearings, use tiny eyelets of the printed circuit variety. (Ask one of your friends who is a radio control model builder for some.)



KEEPING 'EM ON: Losing a wheel is a common problem, and pretty frustrating, especially during a contest. Below are shown four methods of securing them, suitable for small models.



A—The bent wire bit: Most positive, but somewhat primitive.

B—The glue glob approach: Fine for very light models, but a bit risky for heavy jobs. For best results, roughen the axle wire first.

C—The sleeve mode: May be used with or without glue.

D—The pinched eyelet scheme: Either printed circuit eyelets or short sections of aluminum tubing may be crimped onto the axle with the aid of diagonal cutters or pliers. Eyelets may also be used on the inner side of the wheels as spacers.

CAUTION: Do not try to use solder to retain any of these "pseudo-spoke" wheels, as the heat required will melt the plastic.

Regardless of the retaining device that you choose, be certain that the wheels can rotate freely, so that your model may taxi correctly during take-offs and landings.