

# Scale Team Selection Program

Six individuals will be selected to comprise teams to represent the United States at the 1994 Scale World Championships (events F4B and F4C).

Teams will be selected by competing in the static judging and a single elimination contest which will be held on August 12 - 15, 1993 at the National Flying Site, Muncie, Indiana. The three top placing competitors in CL Scale will constitute the F4B team with the competitor placing fourth serving as the team alternate. The RC team and alternate will be selected in the same manner.

The entry fee of \$75 per event must be paid to AMA headquarters no later than July 13, 1993. (CAUTION: Al-

low 10 days for postal delivery.) An additional on-site late entry fee of \$25 per event must be paid to the CD up to one hour prior to the advertised starting time of the finals.

Competitors must be current members of both AMA and NAA.

Nominations for team manager will be accepted at AMA headquarters until August 15, 1993.

Complete details are available from the Competitions Department at AMA headquarters.

## Rust

by Joe Diefenbach

Owners of four-stroke engines know that when they open their engine and look inside, they see a nightmare come true: all the steel parts of their expensive engine are covered with a brownish film. This brownish film is - you guessed it - rust. "Must be bad fuel" the man at the hobby shop says and recommends to buy this "super turbo fuel" which is supposed to prevent this disease. Rest assured, it is not the unburned fuel which causes this problem, so no fuel can keep your engine healthy.

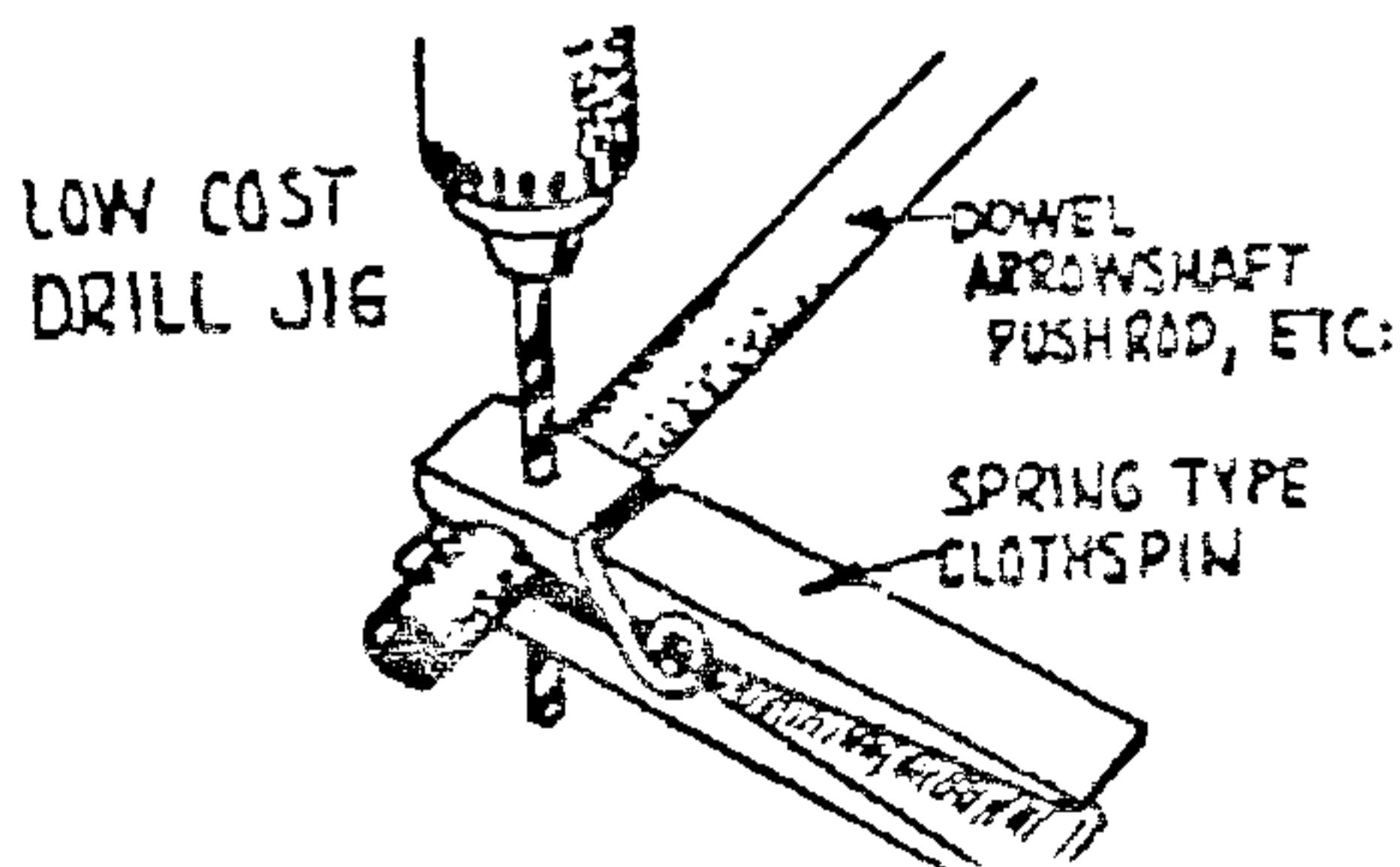
So, where the heck is this rust coming from? The engines, especially four-stroke engines, rust because, with one exception, they do not have a constant throughput of fresh air-fuel mixture in the crankcase. What does this mean? Some of the combustion products of the methanol based fuel and air, along with the oil, seep into the piston and cylinder wall and into the crankcase. The crankcase is relatively cool, so these vapors condense and happily accumulate now in the liquid state.

What are these mysterious combustion products? Mainly water(!), carbon dioxide, formic acid(!), formaldehyde and other mean stuff. Remember the note in the

instruction manual for your engine, to always run it in a well-ventilated area? That's why! The components with the (!), are the real bad guys. They form an acidic puddle in the crankcase which is strong enough to eat steel parts with ease. Normally the bearings go first. To make a bad situation even worse, the oil which comes down from the combustion chamber gets thermally degraded in the process and is now aggressive itself. Unlike car engines, which run on gasoline and use oils with special additives to prevent corrosion, the oils used in model airplane fuels can not prevent this corrosion, no matter what the manufacturers or dealers claim.

What can you do for the health of your engine? If you plan not to run the engine for more than 24 hours, you need to drain all residue from the crankcase and inject three to four pump strokes of penetrating oil, "marvel mystery oil" or other low viscosity oil and then manually turn the engine over a few times. If you want to retire the engine for more than two months, you should drain this oil and refill with fresh oil. This is a messy job, but it's the only way to get a longer life out of your expensive engine. Happy flying and have a long bearing life!

from The Windy Flyer  
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## Drill Jig

Here's how Don Wasson of Ottumwa, IA solves the problem of the drill bit slipping off the side of round things he's drilling, like dowels, push rods, or arrow shafts. Simply clamp the piece to be drilled into a spring clothespin and drill right through the clothespin. Simple, cheap and effective!

from Here's How  
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