

Starter Boxes and Switches

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Starter boxes and starters in general probably get less use in the old timer field than they should. I know that Sal Taibi can step up to almost any balky old timer engine, look at it, flip the prop once or twice, and away she goes. While a lot of us will use a starter we tend not to use a starter box. Over on the AMA/FAI side starter boxes aren't universal—but they are widely used. The OT flyer using a starter tends to stand or kneel in front of the model, and put the starter on the prop. He'll hook the starter up to a small gel cell battery by some floppy cord; or in some cases will have one of the hand held starter/battery pack combos. Hobby Lobby down in Tennessee sells a particularly nice Kavan planetary-gear starter, which has the torque to turn over a Super Cyke or Ohlsson .60 at an rpm level, which is lower than the usual direct drive starter. Dick Lyons in particular seems to feel that this lower rpm level is more suited to the old sparkers. Sullivan and Hobby Hangar both make 12 volt starters for glow engines, with battery pack assemblies available for each model. (the small 1/2 A starter motors run much faster than the bigger starters for glow engines--it's a case of horses for courses, and the little ones need to rev up smartly to start.) I've seen Bud Romak clamp a starter on a table or field stand, hook the cables to the starter battery, then "bump" the nose of his prop spinner into the running starter.

A starter box has one great safety feature—even for old timers. You stand behind, and your hands are behind the prop when you start a motor using a starter box. Most propeller/hand contact comes when you are trying to make some adjustment—either to the needle valve or to the advance lever, and you reach through the prop arc. With a starter box, the chances of you trying to reach through the prop arc are greatly reduced — you can still do it, but the risk is less.

My old starter box died a few months ago after 15 years of use, and I've been gathering the parts and designing a new one. A foot switch is a handy thing to have with a starter box. You can grasp the fuselage with both hands, put the spinner in the starter cone, and then step on the switch. You don't have to be dexterous enough to center the prop and prop nut in a spinning starter cone — you can shove it in or almost in before you step on the switch. Where do you get a foot switch without spending \$75 for an industrial foot switch? Well, for years I used a horn button from an auto parts store. It was designed to be mounted on a car dashboard to control an aah oogah horn. I screwed it to a piece of plywood which was in turn screwed to the footboard on my starter box. Low cost — around \$4 or \$5 for the horn button; low tech — and, unfortunately relatively short life — around 3 or 4 years. I went through two or three of them. Ultimately the horn button just wouldn't handle the amps that flowed through it and gave up the ghost. I don't think the dirty dusty environment (the desert floor at Taft) the switches lived in helped at all. I think I've found the reasonable cost answer. I went to a sewing machine store in Pasadena in mid July. I asked for the cheapest sewing machine foot switch they had. For \$19.95, I got a pedal switch in a sturdy metal box, rated 1.2 amps at 115 volts. While our starter motors may draw 10 amps or more under load, that amperage is at 12 volts (for a watt load of $10\text{ A} \times 12\text{V} = 120\text{ watts}$), and is transitory. Mechanically, this switch is far superior to the horn button switches—and it looks like it'll handle more electricity for a longer life. Right after I got the sewing machine foot pedal, I located what's probably a better deal. Micro Mark [phone 1-800-225-1066] has a foot switch, part # 80766 which supposedly handles 7 amps at 115 volts (or 800+ watts) for \$28.95.

Starter boxes and starters can be hard on old engines. On the other hand, flipping fruitlessly for the course of an afternoon, with nary a pop to be heard, is hard on old modelers. Most of the guys seem to realize these days that the supply of ignition engines, while not infinite, is greater than their remaining supply of flying

days, so they will put a starter on a balky engine. However, there are risks involved. I broke a crankshaft on a ED Racer diesel when it had hydraulic lock just before I put a starter to it. So just like the mechanics on the old rotary or radial engines, you're going to have to pull the prop through a couple of revolutions by hand before you put a starter to it. Compression on these engines is also enough to stall some starters. So you may want to back the prop and piston off of the compression stroke just a bit before you hit the start button. That gives the starter a "running start" before the piston comes up on TDC and maximum compression.