

# STRIPPING MOTORS FOR SCALE MODELS

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The most valuable tool a serious indoor scale competitor could own is a rubber stripper. When flying very light scale models under different height ceilings and different venue temperatures, there is no way to optimize motors using standard width rubber strip. I have not flown a model indoors in almost 35 years, but during the mid 1970's my son Billy and I were very active indoor competitors. At that time we lived in New Jersey and were fortunate to have four excellent indoor sites in which to fly, Princeton gymnasium, Lakehurst, Columbia University Low Library building, and an enclosed sports stadium in Hicksville, Long Island. Regular AMA contests were held at Hicksville, sponsored by Grumman Aircraft. We flew in the AMA Peanut and Scale categories. As I recall, the ceiling height at Hicksville was about 60 feet. It did not take us long to realize that a rubber stripper was a vital piece of equipment. My mentors were the late indoor champ Pete Andrews, and former Scientific Models designer Don Garfalo. Both men owned rubber strippers, and used to strip motors for us until I bought my own, a Czech device which sold for \$50 in the 1970's.

In 1975, my son and I competed in the AMA Nationals which were held in Columbus, Ohio. Since the ceiling height of the indoor site was similar to that of Hicksville, we planned to use the same width motors we had flown with at the Long Island venue. However, there was a temperature difference of more than 30 degrees between the two locations. Hicksville was usually damp and cool, whereas the temperature in Columbus was very hot, at least in the mid 90's. Because of this our Peanuts were bouncing off the ceiling. Luckily, we had brought the Czech stripper along and some 1/4" wide strip. A reduction in width of the motors of less than .010 inch was enough to get the models back under control. The same thing happened with our AMA Scale entries, and we had to cut slimmer motors for those models as well. My son took first place in both events and I settled for second.

In those days, peanuts were winning contests with flights of about two minutes. Quite a feat when you consider the poor quality of the rubber as compared to what is available today. All of the motors we used in our peanuts for competing under various ceiling heights back then were stripped to various widths, ranging from about .065" to 0.080". My longest indoor peanut flight ever was 3:02 with a Fike at Columbia. A .080" loop of Pirelli that Pete had given me did the trick, lifting my model right into the glass dome at the top of the building which was 105 feet above the floor. Even in the 1970's Pirelli was on the way out and difficult to acquire. As a result, most competitors had no choice but to use the old dark gray FAI which had a very strong power burst but poor cruise.

During the same period we were also active competitors in AMA P-30. At the time, P-30 flyers only had one legal propeller available, the infamous very low pitch Peck. Through a lot of

trial and error, I found that stripped motors using four strands of .160" worked much better than those using standard width strip. Now, P-30 flyers have a choice of the old silver Peck, the higher pitch Gizmo, and the Czech so that various combinations of standard width rubber are easier to match to the propeller. However, I believe that even better optimization could be achieved with stripped motors regardless of the type of propeller used. Some very successful P-30 flyers like National Champ Bob Seachrist have been using stripped motors. Coincidentally, the total cross section of the motors he is using in his latest, "Marie Super Skinny E MK II" is identical to those I used in my P-30 in 1975. Bob is a serious competitor and makes two dozen motors at a time. They take 1450-1650 turns with about 8 in. oz. of torque.

When we first began competing in FAC outdoor events, there was really no need for the rubber stripper. But, once I began flying under the 15% rule at our local field here on Cape Cod, the stripper again became an invaluable competition asset. Since I used the same PD ratio (1.1) on all my models regardless of their size and weight, the task of choosing the right motors was greatly simplified. It did not take much experimentation to determine that 15% motors that could take 1100-1200 turns were strong enough to escape ground turbulence and would keep my models aloft longest. However, I also quickly learned that, in most cases, it was not possible to build such a motor with standard rubber strip. The only exception was my expendable fleet of 10 gram Chambermaid peanuts. They were all very competitive, even against much larger models, using loops of standard 3/32" rubber. All my other models used in the 15% events required stripped motors in order to get the best performance from them.

It was not so surprising when, for example, I began building and flying twin-engine scale models in FAC competition, that stripped motors could even have their place in events where the amount of rubber was not limited. My FW-189 V-6 that won Jumbo Scale at Geneseo in 2007 used four strands of .160" rubber in each of its twin fuselages. I had wanted to use my favorite motors in this model, six strands of 1/8" X 20 grams, but they were too bulky to fit in the FW-189's slim booms. Although the model was underpowered with the stripped motors, it still managed 1:55 to place 1<sup>st</sup> in the event. My Mig-9 was another repeated winner at Geneseo, and it also used stripped motors. Since it only weighed about 34 grams, I thought it would be a little overpowered with six strands of 1/8" rubber. It did very well, however, with a 17 gram motor made with four strands of .165" rubber, 50% of the model's weight. Obviously, having a stripper to work with can give you a significant advantage over your fellow competitors at outdoor meets.

