



ACADEMY OF MODEL AERONAUTICS

5161 East Memorial Drive Muncie, Indiana 47302-9252
(765) 287-1256 • FAX (765) 289-4248 • <http://www.modelaircraft.org>

About Flying Models

A small-size copy of a full-size airplane is quite correctly called a “model.” However, the more correct term for most model airplanes is “miniature aircraft,” in that, for the most part, they are not copies of **any** aircraft, but are original creations designed for maximum flight performance without any regard to copying a full-size airplane.

There is no exact record of who was the first model builder. Some say it was an Englishman who built the first successful flying models in the mid- to late-1800s. The most notable first modelers in history would have to be the Wright Brothers, Wilbur and Orville, the first men to develop and fly a man-carrying airplane. The Wright Brothers used models to test their theories of flight. A more recent example of this was the prototype model of the NASA Space Shuttle.

People who enjoy the hobby of miniature aircraft are called “model builders,” or “aeromodelers.” Once regarded as an activity primarily for youngsters, the building and flying of miniature aircraft is today most popular with adults. National statistics show the average age of a modeler in the United States to be 37. Most, but not all, modelers are male and are found in all walks of life from astronauts to shop clerks, Air Force generals to privates, amateur magicians to national radio and TV personalities.

SEVERAL DISTINCT TYPES OF MODELS

Indoor - Those models flown only inside a building. Most of these are very lightweight, fragile and slow moving.

Free Flight - Also known as “FF.” Flown outdoors, free to soar where wind and rising currents take them.

Control Line - Also called “CL” or “UKIE.” Flown on the end of wires or strings, with flight pattern determined by movement of the wires or strings, which in turn move control surfaces on the model.

Radio Control - Also called “RC.” Controlled from the ground by means of a transmitter that sends radio signals to the model. The model carries a tiny radio receiver, which may receive as many as 14 channels of information from the transmitter. This information is “decoded” or sorted out, passed on to “servos;” small electric motors that move the control surfaces to make the plane go up, down, right or left. Other servos may be used to control the plane’s engine speed, wheel brakes, retract the landing gear (wheels) and open hatches to drop parachutes or other items.

Scale - These models can be any of the above types and are duplicates of the full-scale aircraft they resemble. The degree of detail some Scale models possess are worthy of any museum - BUT with operating controls and the ability to fly rather than just for looks.

POWER

Aeromodels are propelled by rubber band motors in the case of Indoor and some Free Flight models. Others are powered with single cylinder engines which burn an alcohol-based fuel. Some CL models use jet engines and some FF models use rocket power. Both FF and RC so aircraft are pulled aloft by long lines attached to electric winches or strong elastic cord (or simply pulled aloft by hand). Hand-launched gliders are powered by muscles, that is thrown aloft by the flier.

PERFORMANCE

Models, when flown in competition, are judged on many different values; realism of flight, duration, distance, speed, altitude. Many fly simultaneously as in racing events. Others are judged individually as for aerobatic maneuvers.

MATERIALS

They range from a lightweight wood, called "balsa," to any of the space-age plastics. Balsa is the lightest wood of any used in modeling, and despite the many new plastics, balsa remains the favorite construction material of the model builder due to the high strength-to-weight ratio and ease of working. Spruce is also popular. Considered to be a soft wood in the construction industry, modelers refer to spruce as a hard wood because of the contrast to the very soft balsa. Some modelers like to build an entire airplane of spruce, while others use it only where extra strength is required. Other woods in use are basswood and maple. Many plastics are also popular: nylon, fiberglass, and other exotic manmade materials which are easily molded to shape.

WORLD RECORDS

SPEED - RC POWER F3A No. 23
343.92 km/h - Goukoune/Mayakinine (USSR)

ALTITUDE - RC POWER F3A No. 22
8205 m. - Maynard Hill (USA)

DURATION - RC POWER F3A No. 20
33 hrs. 39 min., 15 sec. - Maynard Hill (USA)

DISTANCE - RC POWER F3A No. 21
832.43 km. - Ron Clem (USA)

SPEED - RC GLIDER F3B No. 33
239.70 km/h - Klaus Kowalski (GER)

DURATION - RC GLIDER F3B No. 24
33 hrs. 32 min., 30 sec. - A. Smolentsev (USSR)

DISTANCE (c.c.) - RC SEAPLANE F3A No. 52
601 km. - Daniel Coince (FRANCE)

SPEED - FF Rubber F1F No. 12
144.24 km/h - Petras Motekaytice (USSR)

DURATION - RC HELICOPTER F3C No. 35
5 hrs. 15 min., 6 sec. - Mikhail Pruss (USSR)

SPEED - CL JET F2A No. 30
395.64 mph - Leonid Lipinski (USSR)

SPEED - FF POWER F1C No. 8
189.30 km/h - Artur Shaginian (RUSSIA)