

Guidelines for Operation of Radio Controlled Model Aircraft at Air Shows

The International Council of Air Shows recognizes the important role that radio-controlled (R/C) model aircraft play in helping to entertain and educate air show spectators. To ensure that R/C operations at air shows are as safe as possible, the Safety Committee of the International Council of Air Shows recommends that member shows employ the following guidelines when hosting R/C aircraft at their shows.

1. ICAS recognizes the Academy of Model Aeronautics (151 East Memorial Drive, Muncie, Indiana 47302, Phone: 1-800-435-9262, Website: www.modelaircraft.org) as the sanctioning body for the radio-controlled model aircraft community and refers all technical or licensing questions to them.
2. For purposes of these guidelines, a model or radio controlled (RC) aircraft is defined as an aircraft with or without engine, not able to carry a human being.
3. ICAS recommends that operators of radio controlled (R/C) aircraft flying at air shows be members of the Academy of Model Aeronautics (AMA).
4. ICAS recommends that operators of R/C aircraft at air shows operate within relevant portions of the Academy of Model Aeronautics (AMA) Safety Code. Specifically:
 - a. ICAS recommends that R/C aircraft flying at air shows be proven to be airworthy by having been previously and successfully flight-tested.
 - b. ICAS recommends that R/C aircraft give right of way when flying in the proximity of full-scale aircraft. If necessary and to ensure proper separation, an observer can be utilized to supervise flying and avoid having models fly in proximity to full-scale aircraft.
 - c. ICAS recommends that R/C modelers abide by the safety rules at the air show sites at which they perform.
 - d. ICAS recommends that R/C modelers not willfully or deliberately fly their models in a careless, reckless or dangerous manner.
 - e. ICAS recommends that air shows not use R/C models with metal-bladed propellers or with gaseous boosts in which gases other than air enter their internal combustion engine(s).
 - f. ICAS recommends that air shows not use R/C aircraft that operate using hazardous fuels such as those containing tetranitromethane or hydrazine.
 - g. ICAS recommends that operators of R/C aircraft with a turbo jet engine (axial or centrifugal flow) obtain a special waiver for such specific operations from the president/executive director of the Academy of Model Aeronautics. (Note: This does not apply to ducted fan models using piston engines or electric motors.)
 - h. ICAS recommends that R/C aircraft operators complete a successful radio equipment ground range check before the first flight of a new/repared R/C aircraft.
 - i. ICAS recommends that the initial turn after take-off of an R/C aircraft always be made away from the spectator area.
 - j. ICAS recommends that R/C aircraft be operated within the radio control frequencies permitted by the Federal Communications Commission.

5. Radio Transmitter and Receiver
 - a. ICAS recommends that R/C aircraft operators use only modern day or updated equipment.
 - b. ICAS recommends that R/C aircraft operators operate their radio equipment at 72MHz or 50MHz only. ICAS recommends that 27MHz or 53MHz band radios not be permitted.
 - c. ICAS recommends that R/C aircraft operators performing at air shows use a frequency scanner on the flight line by a designated "frequency controller" person.
6. Flight Line Communications/Briefings
 - a. ICAS recommends that the R/C show boss be required to attend all daily pilot briefings.
 - b. ICAS recommends that R/C pilots operating jet (pulse or regulated) or ducted fan R/C aircraft be required to attend the daily pilot briefing. ICAS also recommends that, when requested by the air boss, operators of jet or ducted fan R/C aircraft be required to produce their AMA jet waivers.
 - c. ICAS recommends that all R/C pilots receive a briefing from R/C show boss before flying.
 - d. ICAS recommends that two-way communications be maintained between the RC show boss and the air show air boss throughout the R/C demonstration.
 - e. ICAS recommends that, if pyrotechnics are set up or are being set up within the aerobatic box, the R/C show boss, and the operators of all R/C aircraft be advised not to land in the area containing pyro or fly too close to the personnel working in the pyro area.
7. Flight Line Operations
 - a. ICAS recommends that the R/C show boss and the air show air boss establish a minimum 250-foot show line for all R/C aircraft demonstrations at air shows that do not include R/C jet (pulse or regulated) aircraft, ducted fan-powered aircraft or formation flight demonstrations.
 - b. ICAS recommends that, to perform formation flights at an air show, the participants all be members of an AMA-sanctioned formation flight demonstration team.
 - c. ICAS recommends that, if the R/C demonstration includes flights by R/C jets (pulse or regulated), ducted fan-powered aircraft or AMA-sanctioned formation flight teams, a 500-foot show line also be established.
 - d. ICAS recommends that take-offs and landings that direct the energy of the aircraft toward the crowd be prohibited.
 - e. ICAS recommends that landing approaches from behind or over the spectator area be prohibited.
 - f. ICAS recommends that "candy drop" operations over the crowd or aircraft on static display be prohibited.
 - g. ICAS recommends that "parachute drop" demonstrations be permitted only if the R/C operator can drop the doll from in front of the 250-foot or 500-foot show line and as long as the doll will not hit spectators, static display aircraft or other structures.

- h. ICAS recommends that only necessary crew and personnel be permitted on the flight line; ICAS recommends that each pilot have a "safety pilot" or "caller" with him/her while flying.
 - i. ICAS recommends that all aircraft be started with the tail of the aircraft pointed towards the crowd.
 - j. ICAS recommends that smoking not be permitted on the flight line.
 - k. ICAS recommends that a serviceable fire extinguisher be on the flight line at all times the R/C aircraft are being operated.
8. Flight Procedures
- a. ICAS recommends that R/C aircraft be prohibited from flying while full-scale aircraft are in the air.
 - b. ICAS recommends that air combat demonstrations performed by R/C aircraft be prohibited at air shows.
 - c. ICAS recommends that no more than four (4) R/C aircraft be permitted in the air at one time, unless those aircraft are participating as part of an AMA-sanctioned formation aerobatic demonstration team. ICAS also recommends that aerobatic formations conduct their performance not closer than 500 feet from the audience.
 - d. ICAS recommends that all high-speed turns be conducted away from the show line. ICAS recommends that this include, but not be limited to jets and ducted fan model aircraft.
 - e. ICAS recommends that, when performing a flat turn-around maneuver, R/C aircraft operators use a teardrop turn going away from the audience.
 - f. ICAS recommends that R/C aircraft with pyrotechnics (any device that explodes, burns or propels a projectile of any kind) including, but not limited to, rockets, explosive bombs dropped from models, smoke bombs, all explosive gases (such as hydrogen filled balloons), and ground-mounted devices launching a projectile be prohibited from performing at air shows.
 - g. ICAS recommends that, if the R/C operator has a "failsafe" system available, it be turned "on" and "fail" to the following:
 - i. Throttle closed or idle cut off
 - ii. Landing gear down (if applicable)
 - iii. Flaps down (if applicable)
 - iv. Speed brakes deployed (if applicable)
 - h. ICAS recommends that, if at any time the pilot loses sight of or control of the model, he or she immediately close the throttle and guide the aircraft to the best of his/her ability away from all spectators and air show aircraft.
 - i. ICAS recommends that operators of R/C aircraft be prohibited from consuming alcohol within eight (8) hours of participating in model operations at an air show.
9. Other Models
- a. ICAS recommends that free flight aircraft (no ground based control) powered by gas, electric motor, CO₂ or rubber band be prohibited from flying at air shows.
 - b. ICAS recommends that control Line or "U" control airplanes (model aircraft flown in circles and guided by wires from the pilot standing in the middle) be prohibited from performing at air shows.
 - c. ICAS recommends that operation of model rockets at air shows be prohibited.