

EXFC 2023

Jet Synchro Freestyle

Competition Rules

Introduction

Jet Synchro Freestyle Competition is open to all formation teams worldwide, flying any type of maneuvers' with sport or scale Radio Controlled Aerobatic Jet Model Aircraft.

Definition of a Radio Controlled Aerobatic Jet Model Aircraft

A model aircraft, but not a helicopter, which uses turbine jet(s), turbo prop jet(s) or ducted fan(s) as the propulsion source(s) and which is aerodynamically maneuvered by control surface(s) in attitude, direction, and altitude by a pilot on the ground using radio control.

- Variable thrust direction of the propulsion device(s) is permitted.

1 - General Regulations

1.1 Competitors

- Every Jet Formation Team must have two (2) pilots and two (2) Jet Model Aircrafts.
- Every Jet Formation Team must have a NAME.
- A minimum of 3 teams are required to start the competition.
- There is no limit of Team number per each country.

1.2 General Characteristics of a R/C Aerobatic Jet Model Aircraft

The R/C Aerobatic Jet Model Aircraft shall use as a propulsion device turbo jet/s or ducted fan/s. Ducted fans may use turbo jet engines or electric motors as a power source. Rocket or pulse jet engines may NOT be used.

Maximum overall wingspan: no restrictions

Minimum overall wingspan: 2000mm

Maximum overall length: no restrictions

Maximum take-off weight with fuel (or with battery if EDF): 25kg

Maximum thrust of turbine: no restrictions*

Electric Motors power source max. no load voltage 72 volts *

Noise limits: no restrictions*

The propulsion device(s) must automatically shut-off (EDF) or fully idle (turbo jet) at the moment an R/C signal failure occurs.

1.3 Radio Equipment

Radio equipment shall be of the open loop type.

Permitted:

1. Control rate devices that are manually switched by the pilot.
2. Any type of button or lever, switch, or dial control that is initiated or activated and terminated by the competitor.
3. Manually operated switches or programmable options to couple and mix control functions.
4. The use of electronic stability augmentation devices or gyros with or without speed related automatic gain control derived from a GPS signal.
5. The transmission of information from the model aircraft to the pilot on the ground.

Not permitted:

1. Snap roll buttons with automatic timing mode.
2. Pre-programming devices to automatically perform a series of commands, except for landing gear function.
3. Automatic flight path guidance.
4. Any type of voice recognition system.
5. Any type of learning function involving maneuver to maneuver or flight to flight analysis.

1.4 Definition and Number of Helpers

One Team Manager (the caller) per team is permitted during the flight. Two helpers may be present and assist during the starting of the motor(s). One person, either a helper, or the team manager, may place the model aircrafts for take-off and retrieve the model aircraft following the landing. In exceptional circumstances, another helper may join the competitor and caller/helper during the flight, but only to hold a sun-shield as protection from direct sunlight. These protection devices must not interfere with the judges' vision of the maneuvers.

2 - The competition

2.1 Number of Flights

Each Jet formation Team have to fly two (2) preliminary rounds, plus the final flight.

Competitors have the right to the same number flights. Only completed rounds will be counted. Only when all competitors in the preliminary and final rounds, have had the opportunity to complete the same number of rounds, can the results of the rain-interrupted (or other delay) competition be determined.

2.2 Definition of an Attempt

There is an attempt when the competitor/Team is given permission to start.

If the propulsion device fails after the model aircraft becomes airborne, the attempt will be deemed complete.

2.3 Number of Attempts

Each competitor/Team is entitled to one attempt for each official flight.

Note: An attempt can be repeated at the contest director's discretion only when any unforeseen reason beyond the control of the competitor, causes the model aircraft to fail to start (if there is radio interference or other technical problem).

Similarly, in a flight that is interrupted by any circumstance beyond the control of the competitor, the competitor is entitled to a re-flight, with the entire schedule being flown and judged, but only the affected maneuver and the unscored maneuvers that follow will be tabulated.

2.4 Definition of an Official Flight

There is an official flight when an attempt is made whatever the result.

2.5 Marking

a) Each judge has to assess maneuvers and any other relevant action of the competitor/Team individually and independently from the other judges.

d) If a model aircraft is, in the opinion of the judges, unsafe or being flown in an unsafe or inappropriate manner, they may bring this to the attention of the flight line director, who may instruct the pilot to land.

2.6 Classification EXFC Synchro Jet Freestyle

- a) Each Jet formation Team will have two (2) preliminary flights, the sum of the two (2) scores (normalized scores to 1000 points) to determine the preliminary ranking.
- b) The top five (5) of the classified Jet Teams will enter the finals.
- c) The finalists will fly one (1) final flight.
- d) The final ranking of the finalists will be determined by the sum of the preliminary flight normalized scores and the final flight score, normalized to 1000 points.

2.7 Judging

For each competition there must be a minimum of three (3), and a maximum of five (5) judges, plus one timer.

2.8 Organization of Contests

Only spread spectrum radio control systems are allowed.

The order of the first flight will be done by a draw.

For flights two, three and four of the preliminary rounds the flight order will start 1/3, and 2/3 down the flight order respectively.

Competitors must be called by a flight line official at least five (5) minutes before they are required to occupy the starting area.

The competitor and his helper(s) then occupy the starting area so that a radio check can be performed to verify the correct functioning of the radio control equipment.

For electric powered models, the electric power circuit(s) must not be physically connected, before the starting time is begun and must be physically disconnected immediately after landing.

The competitor may not start his model aircraft unless he has been instructed by a flight line official to do so.

During the flight, the pilots and helper/caller must stay in the designated position in front of the judges and under the supervision of the flight line director.

3 - The Round

3.1 Official Flight Round

The official flight round have to be flow with SMOKE and MUSIC.

3.1.3 Music – performing rights

Each Jet Team will select their own music for their flight rounds and will accept all responsibility with regards to obtaining permission from composers to use their music for public displays.

3.1.4 Music - operation

Teams are required to supply their musical accompaniment either live or on suitable media for their official flight rounds on CD or USB pen.

3.2 Starting Time

All teams will be given a 10 minutes warning before the start of their flight.

3.3 Flying Time

Every competitor/Team is allowed **8 minutes of flying time for each flight round.**

The team will then be instructed to start their flight, the timing of which will commence when the team leader put down hand.

3.4 Pyrotechnics

The use of fireworks/pyrotechnics on the ground is not allowed.

Functions of the model, such as fireworks/pyrotechnics and flares, may be used during the flight and must be operated only by the pilot from his transmitter.

3.5 Safety Issues

Safety Line: If there is a cross-wind causing persons to be endangered by a competitor's model, or the Safety Line, established jointly by the Contest Director and Flight Line Controller, is crossed under any circumstances, scoring will cease and all pilots of the team involved will be instructed by the Flight Line Controller to land their models immediately.

High Risk Maneuvers: High energy turns, "split" and "crossover" maneuvers flown towards the crowd closer than 50 meters from the crowd line are banned. If any team is considered by the Flight Line Controller to be in breach of this regulation, scoring will cease and all the team pilots will be instructed by the Flight Line Controller to land their models immediately.

If one of the two flying model touch the ground during the flight round or any part unintentionally separates from the aircraft during flight round, the scoring stops and the Jet Formation Team must land immediately. In this case the re-flight is not allowed.

The loss of one the two flying model means the end of the round, scoring stops and the other model aircraft must land immediately. In this case the re-flight is not allowed.

4 - Judging Criteria

Synchronism of demonstration - (K factor 15)

The judges will award points for the synchronism of figures, selection of the manoeuvres, change of formation and the harmony of the tempo and mood music to the style of the flying.

Special effects - (K factor 10)

During all rounds the judges will award points for the use of smoke, lights, and special effects with music.

Choreography - (K factor 20)

The judges will reward flight speed, smoothness, accuracy and harmony with music throughout the whole flight.

Precision - (K factor 20)

The judges will score precision of each maneuver during whole flight.