

JMA Flying Event Safety Rules

Changes to Third edition are denoted by text in red.

Approved by the JMA committee – March 2006.

Foreword

These Safety Rules are to apply to any event, open to the JMA general membership, which is organised by any member of the JMA. Nothing in this publication is intended to conflict with the Air Navigation Order or other legislation, which, in case of doubt, must be considered as overriding. The Rules were written to comply with the guidance given in the Civil Aviation Authority publication CAP 658 "Small (Model) Aircraft: A Guide to Safe Flying".

Contents

1. Organisation and Responsibilities.
2. Definitions.
3. Pre-flight requirements.
4. Pit Area Safety Rules.
5. Flying Safety Rules.
6. Fuelling Area Safety Rules.
7. Radio control Failsafe Device settings.
8. Appendices
 - 8.1 Transmitter Control Procedures
 - 8.2 Pilots' Briefing

1. Organisation and Responsibilities.

1.1 Event Organiser

The Event Organiser will assume overall responsibility for the planning, organisation and subsequent running of the event.

1.2 Flight Line Director

The Flight Line Director's responsibilities are to: -

1.2.1 Assist in the planning of the event.

1.2.2 Brief all pilots each day before flying commences.

1.2.3. Ensure that all aircraft are subject to inspection and scrutiny for defects that would render them unsafe to operate and to prevent operation of such defective aircraft.

1.2.4 Ensure that all flights are conducted in accordance with the Safety Rules.

1.2.5 Ensure that any pilot who infringes any of the Safety Rules is instructed to terminate the flight.

1.2.6 Control all aircraft movements to and from the Taxi Point.

1.2.7 Ensure that flying only takes place when weather conditions are suitable. The effects of wind strength and direction, visibility and cloud base to be taken into account.

1.3 Marshals

The Marshals' responsibilities are: -

1.3.1 To ensure that all activities in the Pit Area are conducted in accordance with the Pit Area Safety Rules as detailed in Section 4 below.

1.3.2 To enforce the Pit Area Safety Rules and advise the Flight Line Director of any infringements.

1.3.3 To control all aircraft movements to and from the Pit Area.

1.3.4 To signal clearly and immediately to the Flight Line Director any infringement of the Safety Line Rules 5.5 and 5.6 below.

1.3.5 To ensure that the Fuelling Area Safety Rules, Section 6, are complied with.

1.3.6 To ensure that the general public remain at all times behind the Crowd Line and do not infringe the Air-side area.

1.4 Transmitter Controller

The Transmitter Controller must ensure that radio control systems are operated under conditions that prevent interference of the control of any aircraft. Such responsibility can only be borne by a suitably experienced person. The Transmitter Controller's responsibilities are: -

- 1.4.1** To check that all radio control transmitters are operating on the particular frequencies nominated by a visual check of crystal markings and by the use of frequency monitoring equipment.
- 1.4.2** To monitor emissions in the authorised frequency band and to liaise with the Flight Line Director to prevent any flights taking place when interfering emissions are present.
- 1.4.3** To take charge of all radio control transmitters and/or r.f. modules, store in a safe place and maintain switched off.
- 1.4.4** To release radio control transmitters and/or r.f. modules to Pilots in a systematic manner to prevent simultaneous transmissions by two or more transmitters operating on the same frequency.
- 1.4.5** To ensure that all transmitters do not contain r.f. modules when released to pilots for use with direct servo connection (DSC) for aircraft control system checking.

1.5 Pilot

- 1.5.1** The Pilot of an aircraft is that person who is operating the radio control transmitter whilst an aircraft is being prepared for or undertaking flight.
- 1.5.2** The ultimate responsibility for the safe operation of an aircraft rests with the Pilot.

1.6 Fire Person (in respect of Gas Turbine operations).

- 1.6.1** The Fire Person is that person nominated by the Pilot to undertake the responsibility of dealing with any fire that may occur during the preparation and flying of the Pilot's aircraft.
- 1.6.2** The Fire Person must be familiar with the location on and around the aircraft of all equipment and substances that would represent a hazard in the event of a fire and be competent to deal with such hazards.
- 1.6.3** The Fire Person must, whilst on duty, have ready access to an appropriate and serviceable fire extinguisher and be competent to operate it effectively.
- 1.6.4** A Fire Person can only be assigned to one aircraft at any one time.
- 1.6.5** The Fire Person's duties will have priority over all other tasks and he will maintain an overview of all activities while the gas turbine is being operated.

1.7 Mobile Fire Vehicle.

In addition to the dedicated Fire Persons the event organiser will provide a vehicle capable of travel over the terrain local to the flying area. The vehicle will be available for immediate response when aircraft are being flown. The vehicle will have a crew of two comprising a driver and a fire person and will carry at least one aqueous film forming foam fire extinguisher of a minimum capacity of 10 kg. The vehicle will also be equipped with a first aid kit containing materials for the treatment of burns.

2. Definitions.

2.1 Crowd Line.

2.1.1 The Crowd Line is a physical barrier that generally runs parallel to the Display Line in use and which is displaced at least 30 metres from that line. The Display Line is AirSide of the Crowd Line.

2.1.2 The Crowd Line is continuous and unbroken except for controlled AirSide access points.

2.1.3 Operators of aircraft, operators' nominated personnel and event organiser's nominated personnel are the only persons allowed in front of the crowd line.

2.2 Display Line

The Display Line is a line parallel to the crowd line. Aircraft must only be flown on the far side of the vertical plane that passes through the Display Line. The horizontal displacement of the Display Line from the Crowd Line must be at least 30 metres for aircraft under 7 kg. For aircraft over 7 kg the distance must be at least 50 metres but this may be reduced to 30 metres on take-off or landing only.

2.3 Air-side.

Air-side is defined as that area one side of the Crowd Line in which flying takes place. Pits and engine starting areas are sited in the Air-side area.

2.4 Safety Line.

The Safety Line coincides exactly with the Display Line.

2.5 Taxi Point

The Taxi Point is a designated point on the runway where aircraft are left by the Pilot's helpers at the commencement of a flight. The position of the Taxi Point will be specified by the Flight Line Director and will be such that the effects of crosswind and loss of directional control will not put any person at risk.

2.6 Pilots Box.

The Pilots Box is a marked area in which all pilots remain while their respective aircraft are in the air. The Pilots box will be physically protected by barriers for the purpose of stopping errant aircraft

2.7 Public Area.

The Public Area is all that which is not Air-side of the Crowd Line.

3. Pre-flight requirements.

No aircraft will be permitted to fly until the following checks have been satisfactorily completed: -

3.1 The radio control transmitter has been checked and released by the Transmitter Controller.

3.2 The aircraft has been checked, and released for operation, by the Scrutineers.

4. Pit and Start-up Area Safety Rules.

- 4.1** Starting and running of engines will only take place in designated Start-up Areas, which will be located air-side of the Crowd Line. The Start-up Areas will be separated from the general Pits area and will be used to prepare aircraft for flight. Consideration should be given to establishing separate Start-up Areas for Gas Turbines and Ducted fans.
- 4.2** An Engine Test Area will be established at a significantly greater distance from the Pits area than the Start-up Areas but remaining airside of the Crowd Line.
- 4.3** When starting and running an aircraft's engine(s) the jet exhaust should, wherever reasonably possible, be directed away from the Crowd Line. This rule applies to **all aircraft**. Gas Turbines, which require to be started with tailpipes directed downwind, must be located such that the effect of the jet blast on people and property is negligible.
- 4.4** All gas turbine powered aircraft whose engines are being started will be positioned such that jet tailpipes will exhaust over hardened surfaces away from any dry grass areas and complying with rule 4.1 above.
- 4.5** All non-essential personnel are to be kept clear of the immediate vicinity of aircraft whose engines are being started and run.
- 4.6** The Pit and Start-up Areas must be kept clean and any loose items must be picked up or secured to prevent being sucked into a fan or gas turbine.
- 4.7** Aircraft are not to be taxied without restraint in or out of the Pit Area. Aircraft must be carried or restrained while being moved from the designated starting point to the Taxi Point ensuring that the jet blast is always directed away from the Pit Area. Aircraft returning from a flight must be stopped at the Taxi Point and the engine(s) shut down.
- 4.8** Pilots operating gas turbines must nominate a competent Fire Person for the entire duration of the preparations to fly, the take-off, the flight and landing, to stand by with an appropriate serviceable fire extinguisher. The nominated Fire Person must assume responsibility, under the direction of the Pilot, for extinguishing any fires that may arise.
- 4.9** Aircraft powered by gas turbines consuming liquefied gaseous fuel will be fuelled in a designated area remote from the Pit Area.
- 4.10** All fuels must be stored in labelled containers fit for the purpose.

5. Flying Safety Rules.

- 5.1 All Pilots are expected to be competent to operate their aircraft. If the Event Organiser or Flight Line Safety Officer determines that a Pilot is not competent he will not be allowed to fly. Pilots must be competent to a standard equivalent to the British Model Flying Association Powered Fixed Wing Model Aircraft "B" Certificate of Proficiency.
- 5.2 Any Pilot determined to be suffering from the effects of Alcohol or Drug abuse will not be allowed to fly.
- 5.3 Pilots are to ensure, before each flight, that their aircraft are airworthy and that their radio system is functioning properly and all batteries are adequately charged.
- 5.4 Pilots must remain within the confines of the Pilot Box for the duration of the flight
- 5.5 Aircraft are to be flown in an area to the far side of the Display Line, which will be also be designated as the Safety Line. Pilots will be required to terminate a flight if, at any time, they allow their aircraft to pass over the Safety Line. A subsequent infringement of the Safety Line will eliminate the Pilot from the Event. The Safety Line for aircraft over 7 kg may be crossed for take-off and landing but at no time during an aircraft's operation must such aircraft come closer than 30 metres from the Crowd Line.
- 5.6 Any Pilot who allows his aircraft to overfly the Public Area will immediately be required to bring the aircraft back to the runway and land. **Any further flying by this Pilot for the duration of the Event will be at the discretion of the event controller.**
- 5.7 Except during take-off and landing, low flying, below 3 metres above ground level, may only be undertaken with the aircraft flying on a constant heading in a direction parallel to the runway centre line.
- 5.8 High-speed manoeuvres must be made in a direction parallel to the Crowd Line or heading away from the Public Area. Such manoeuvres must be confined to the far side of a vertical plane, parallel to the Crowd Line, which is displaced 30 metres horizontally from the Pilots Box.
- 5.9 There will be no high-energy manoeuvres permitted that would bring the aircraft on a heading towards the Crowd Line.
- 5.10 Aircraft must be operated within the visual range of the Pilot who must also take into account the effects of the position of the sun.
- 5.11 Pilots must assess the effects of the weather upon their aircraft and not make a flight in conditions in which their aircraft would not remain under full control.
- 5.12 If an aircraft experiences radio interference or any other form of control malfunction it must be landed as soon as is practicable and not be flown again until all faults have been rectified to the satisfaction of the Flight Line Director.
- 5.13 If any part of an aircraft becomes detached in flight which was not designed and controlled to do so the aircraft must be landed as soon as is practicable and not be flown again until all faults have been rectified to the satisfaction of the Flight Line Director.
- 5.14 If an aircraft touches the ground while in flight, other than by contact involving normal use of the landing gear, the aircraft must be landed as soon as is practicable and not be flown again until it has been checked and all damage has been rectified to the satisfaction of the Flight Line Director.
- 5.15 If an aircraft on the ground catches fire the Pilot must direct the nominated Fire Person to extinguish the fire. If as a result of a fire the aircraft crashes, or as a result of a crash an aircraft catches fire, only the nominated Fire Person together with the Mobile fire Vehicle and crew should attend the aircraft until the fire is extinguished.

- 5.16** Pilots must have a helper in attendance for every flight. The helper must maintain a lookout throughout the flight to warn the Pilot of any circumstances that may jeopardise the safe conduct of the flight.

6. Fuelling Area Safety Rules

- 6.1 Fuelling of aircraft will only be carried out by competent persons nominated by the Pilot.
- 6.2 A nominated Fire Person in possession of an appropriate and serviceable Fire Extinguisher must be in attendance throughout all fuelling operations.
- 6.3 No naked lights are permitted in and around the Fuelling Area.
- 6.4 The Pilot or the nominated competent person must ensure that the fuelling equipment is fit for the intended purpose before fuelling takes place.
- 6.5 During refuelling, the engine(s) is to be shut down.
- 6.6 It is strongly recommended that a manually operated shut-off device is fitted in the fuel supply line to the engine to prevent inadvertent fuel flow to the engine during refuelling

7. Radio Control Failsafe Device settings.

- 7.1 "Failsafe" device refers to any equipment or facility associated with the radio control system that is activated by the loss of radio signal or interference to the signal.
- 7.2 The engine control function shall include a fuel shut off device.
- 7.3 The Fail safe is to be set so that in the event of loss of radio signal the engine reverts to "idle" or "stop" at the pilot's discretion (subject to 7.4 below). It is not to be set to hold the last position of the engine/motor control.
- 7.4 In the event that there is a separate hazard (eg standing crops) The Event Organiser, or Flying Site manager may require that the fail-safe should be set to stop the engine.
- 7.5 It is the responsibility of the pilot to demonstrate these functions on request.
- 7.6 The settings of failsafe devices must be checked prior to each flying session to confirm compliance with these rules

8. Appendices

8.1 Transmitter Control Procedures

- 8.1.1 The Transmitter Control area is a 'sterile' area where nobody but the Transmitter Controller and an assistant are allowed.
- 8.1.2 Nobody but the Transmitter Controller has access to the frequency control board, which must be placed out of the reach of anybody but the Transmitter Controller and the assistant.
- 8.1.3 A proprietary electronic transmitter frequency monitor is to be used at all times to check frequencies in use.
- 8.1.4 All transmitters will be checked for correct frequency against their pennant and with a proprietary electronic transmitter frequency monitor, when they are received into Transmitter Control. Transmitters will be exchanged for a white plastic tag on which the pilot's name, transmitter number and frequency channel number is written in indelible ink. A record will be made of pilots' names, their transmitters and frequency numbers.
- 8.1.5 Pilots will be allowed to take transmitters out of Transmitter Control **with the module removed and retained by the Transmitter Controller**, for model set-up purposes, using a DSC lead. They will not have to exchange their tag for a peg in these circumstances.
- 8.1.6 The system to be used is 'Peg Off' – i.e., the peg is taken off the frequency control board and given to the pilot at the same time as his transmitter, in exchange for his white plastic tag. This tag is placed over the frequency number on the frequency control board to indicate who is in possession of the peg.
- 8.1.7 When a transmitter is returned to Transmitter Control, checks will be made to show the Transmitter Controller that the transmitter is switched off. When confirmed off, the transmitter will be accepted and the peg exchanged for the white plastic tag on the frequency control board.
- 8.1.8 At no time will the Transmitter Controller allow two transmitters on the same frequency channel to leave the Transmitter Control unless it is to allow a pilot to pack-up at the end of his flying session.

8.2 Pilots' Briefing

- 8.2.1 All participants are required to ensure that their aircraft operations comply with the requirements of CAP 658 and the Millennium edition of the BMFA Members' Handbook, and furthermore should also comply with the JMA Flying Rules. It is the pilot's responsibility to ensure that his aircraft and its operation comply with all relevant legislation.
- 8.2.2 On leaving the pits area for the Flightline persons will enter the active area and come under the control of the Flight Line Director, remaining so until they return to the pit area.
- 8.2.3 Pilots are permitted one helper/caller who can remain with the pilot in the pilots box. Other specialist helpers will be allowed to remain in the active area only with the permission of the Flight Line Director.
- 8.2.4 Press photographers will only be allowed in the active area with the permission of and under the direction of the Flight Line Controller. All photographers must be accompanied by a helper/look-out.
- 8.2.5 No person will be permitted beyond the edge of the runway nearest the pits without the permission of the Flight Line Director.
- 8.2.6 All aircraft will fly at or beyond the centre-line of the runway, additionally any high speed or low level flying is to take place beyond the far edge of the runway. Flying behind the safety line is strictly forbidden.
- 8.2.7 High-speed manoeuvres directed toward the public areas are prohibited.
- 8.2.8 Helpers will only be allowed to retrieve aircraft from the runway and beyond with the Flight Line Directors permission. Pilots of airborne aircraft will be required to keep their aircraft high and away from the immediate vicinity of aircraft being retrieved. The Flight Line Director will liase between pilots and helpers during aircraft retrievals.
- 8.2.9 Pilots, helpers and aircraft must leave the active area and return to the pit area promptly on completion of their flight.
- 8.2.10 The Flight Line Director's decision is final, any pilot not obeying the Flight Line Director's instructions will be required to land as soon as is safely possible and may not subsequently be permitted to undertake any further flying.