



Civil Aviation Safety Authority  
of Papua New Guinea

# Advisory Circular

## AC91-1

### Aviation Events

Issue 1

31 October 2022

#### GENERAL

Civil Aviation Safety Authority Advisory Circulars (AC) contain information about standards, practices and procedures that the Director has found to be an Acceptable Means of Compliance (AMC) with the associated rule.

An AMC is not intended to be the only means of compliance with a rule, and consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices or procedures are found to be acceptable, they will be added to the appropriate Advisory Circular.

#### PURPOSE

This Advisory Circular provides methods, acceptable to the Director, for showing compliance with the conduct of aviation events requirements of Part 91 and explanatory material to assist in showing compliance.

#### RELATED CAR

This AC relates specifically to Civil Aviation Rule Part 91.703.

#### CHANGE NOTICE

This AC replaces the Initial Issue dated 01 July 2002.

#### APPROVAL

This AC has been approved for publication by the Director of Civil Aviation

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## Introduction

Aviation events are specialised flying activities where exceptions from some of the flight rules contained in CAR Part 91 are provided for and require authorisation, some by the Director and some under 91.703.

The safety of spectators is paramount during an aviation event such as an air show. However success of a good air show often depends on the aircraft demonstrating manoeuvres closer to the spectators than the 2000 foot horizontal distance prescribed for normal operations. These two ideas are completely at odds with each other, so we must provide for some compromises.

Though aircraft at an aviation event may be operated in non-compliance with some flight rules in Part 91, there must be distances and heights specified. In addition, there must be other standards for these events taking individual pilot qualification, skill, and experience into account to maintain an acceptable level of safety for the spectators.

The other safety ingredient is the professionalism and discipline required of each participating pilot to conduct the display within the limitations of the aircraft and the limitations of their personal skill.

## 1. General Information

### 1.1 Definitions

- (1) An **aviation event** means flying activities that are—
  - (i) an air show or practice for an airshow; or
  - (ii) an air race or practice for an air race; or
  - (iii) an aerobatic competition; or
  - (iv) aerobatic training or practice,

And that are provided with exceptions from a number of flight rules under CAR Part 91.

- (2) An **air show** means any flying activity performed before spectators, during which aircraft are operated under exceptions from the flight rules for the activity.
- (3) **Aerobatic** flight means—
  - (i) an intentional manoeuvre in which the aircraft is in sustained inverted flight or is rolled from upright to inverted or from inverted to upright position; or
  - (ii) manoeuvres such as rolls, loops, spins, upward vertical flight culminating in a stall turn, hammerhead or whip stall, or a combination of such manoeuvres.

Steep banked, level, climbing, or descending turns necessary during manoeuvring between aerobatics or fly-past displays are not considered to be aerobatic manoeuvres.

### 1.2 Rule Exceptions

1.2.1 Part 91 provides exceptions from a number of rules applicable to aircraft being operated at an aviation event.

1.2.2 Exceptions are provide in the following rules for aviation events—

- (1) Rule 91.223 contains the requirements applicable to aircraft operating on and in the vicinity of an aerodrome. Paragraph (a)(3) of this rule requires compliance with the circuit direction prescribed for the aerodrome with an exception from the requirement provided for

aviation events.

- (2) Rule 91.237 limits aircraft speed to 250 kts below 10 000 feet but an exception is provided for aircraft operating at an aviation event.
- (3) Rule 91.311 requires aircraft over any area other than a congested area of a city, town, or settlement, or over any open air assembly of persons to fly at an altitude of 500 feet above the surface. An exception is provided to fly below 500 feet at an aviation event.
- (4) Rule 91.701 requires that no pilot shall operate an aircraft in aerobatic flight unless—
  - (i) over, or within a horizontal distance of 2000 feet of, a congested area of a city, town, or settlement; or
  - (ii) over, or within a horizontal distance of 2000 feet of, an open air assembly of persons; or
  - (iii) within any controlled airspace except with the authorisation of ATC.
- (5) An exception is provided for aerobatic flight stating that a pilot may operate an aircraft within a horizontal distance of 2000 feet of spectators at an aviation event if the pilot is participating in that aviation event in accordance with 91.703.
- (6) Rule 91.701 requires that no pilot shall operate an aircraft in aerobatic flight below a height of 3000 feet. An exception is provided in 91.701(2), allows a pilot may operate an aircraft in aerobatic flight—
  - (i) between a height of 1500 feet and 3000 feet if the pilot holds an aerobatic rating issued under Part 61; and
  - (ii) below a height of 1500 feet if the pilot—
    - holds an aerobatic rating issued under Part 61 that authorises aerobatic flight to a specified height below 1500 feet; and
    - does not perform aerobatic flight below the height authorised in their aerobatic rating; and
    - is participating in an aviation event.

## 2. Aviation Event Authorisation

### 2.1 Requirement for authorisation Other than an aviation event at which—

- (1) not more than 500 spectators are in attendance; or
- (2) there are not more than three participating aircraft: or
- (3) the aircraft are in one formation.

The organizer of the event must be the holder of an aviation event authorisation issued by the Director.

### 2.2 Procedure for authorisation

**2.2.1** Applications to the Director should be made by submitting form CAA 91/03, Application for Aviation Event Authorisation, at least 90 days before the event.

**2.2.2** On receipt of the application, the Authority will determine if controlled or special use airspace is required to be established and whether air traffic control is required to be provided. The air show organiser may request the establishment of the airspace and provision of air traffic control but

ultimately the Authority has the final decision in these matters.

**2.2.3** The Director's determination of required airspace and air traffic control may take some time, and, in addition, a period of at least 60 days is required for promulgation of the information in the AIP. The period of 90 days is therefore the minimum period within which the Director's function can be completed with some certainty.

**2.2.4** It is appreciated that the organiser of the aviation event may not have complete details of the participating aircraft 90 days in advance of the event. In such a case, the organiser may state this on the application for authorisation to allow the Authority to commence the authorisation process with the minimum 90 day period. The organiser must subsequently forward the complete information to the Director at least 30 days prior to the event.

### **3. Aviation Events Without Authorisation**

- 3.1** Organisers of aviation events that do not require to be authorised should conduct the event in accordance with the applicable standards, practices and procedures contained in this Circular.
- 3.2** The organisers are also responsible for determining the airspace requirement for each event. This may determine that there is a NOTAM required to alert other airspace users or in the extreme that a special use airspace is require to be designated to ensure that safety is not compromised.
- 3.3** If an aviation event organiser is in any doubt about the likely safety implications, they should contact the Authority for advice.

### **4. Aerobatic Authorisation**

- 4.1** Aerobatic flight at aviation events is usually required to be conducted below a height of 1500 feet above the surface. To conduct such aerobatic flight below 1500 feet the rule requires the pilot to—
  - (1) hold an aerobatic rating issued under Part 61 that authorises aerobatic flight to a specified height below 1500 feet; and
  - (2) not perform aerobatic flight below the height authorised in their aerobatic rating; and
  - (3) be participating in an aviation event.

### **5. Defence Aircraft**

- 5.1** The rules governing aerobatic flight, aviation events and minimum heights for VFR flights are not applicable to aircraft being operated by the PNG Defence Force.
- 5.2** However, if Defence aircraft are participating in an aviation event under 91.703, the display co-ordinator is responsible for their display in terms of ensuring that they are allocated a display time within the airshow display programme.
- 5.3** To undertake this responsibility the display co-ordinator should have the details of the Defence aircraft display and insist that a Defence representative attend the flying display briefing, or, at least, provide them with a written briefing.

### **6. Air Shows**

#### **6.1 Air show personnel**

##### **6.1.1 Air show organiser**

A prerequisite for an authorisation for an air show is the nomination of an air show organiser who must

assume overall responsibility for the organisation and conduct of the flying activities and, where appropriate, make arrangements for—

#### ***Air show personnel***

- (1) the appointment of other personnel such as display co-ordinator and other officials; and
- (2) flight crew.

#### ***Air show site and air show management***

- (1) air show site assessment:
- (2) establishment and marking of display lines:
- (3) aircraft parking:
- (4) the siting and control of spectator areas and vehicle parks:
- (5) establishing minimum heights:
- (6) controlling maximum speeds:
- (7) stipulating weather minima:
- (8) co-ordinating pyrotechnics or other special effects:
- (9) briefing and circulating of written air show rules and programmes:
- (10) checking pilot licences and display authorisations:
- (11) establishing the planned sequence of display for full, and bad-weather, programmes:
- (12) integrating non-display flights:
- (13) establishing an emergency plan.

#### ***Liaison with authorities and services***

- (1) with police and local authorities:
- (2) with air traffic services:
- (3) with emergency and first aid services:
- (4) with Defence (for Defence aircraft participation).

### **6.1.2 Display co-ordinator**

**6.1.2.1** Where the flying display comprises a significant number of items, the air show organiser should have considerable aviation experience if that person is also to assume the function of display co-ordinator. If the organiser does not have this experience, a suitably qualified person, preferably with display experience should be appointed as the display co-ordinator.

**6.1.2.2** The display co-ordinator is responsible for flying discipline generally, the approval or modification of individual display routines, approval of minimum display heights, and the cancellation or modification of the flying programme caused by bad weather or some other condition.

### **6.1.3 Air show safety observer**

- 6.1.3.1** A person or persons with previous air show experience person should be appointed as an air show safety observer reporting directly to the display co-ordinator.
- 6.1.3.2** The observer should use a checklist provided by the display co-ordinator to monitor all air and ground activities throughout the air show.
- 6.1.3.3** The observer should immediately report any unsafe situation, or non-compliance with the standards, to the display co-ordinator.

### **6.1.4 Flying display committee**

- 6.1.4.1** The air show organiser will probably require assistance in the planning and conduct of larger events. In such a case the organiser should select a small group of experienced aviators to act as an air show committee chaired by the display co-ordinator.
- 6.1.4.2** The air show organiser should delegate responsibility for some of the activities such as crowd control, aircraft parking, marshalling participating aircraft, and the like, to individual committee members. In such cases communication procedures should be established between the committee members and the air show organiser who is ultimately responsible for the conduct of the airshow.

### **6.1.5 Appointment of officials**

Experienced persons should be detailed to supervise the parking of aircraft and cars, exercise crowd control, operate any public address system, and to control messengers and any other persons with allocated duties.

### **6.1.6 Flight crew**

- 6.1.6.1** Participating pilots must hold the appropriate licences and ratings for the activity to be conducted.
- 6.1.6.2** No passengers shall be carried in any aircraft during a display flight, and only those crewmembers essential for the safe operation of the aircraft should be carried.

## **6.2 Air Show – Site and Display Management**

### **6.2.1 Site assessment**

- 6.2.1.1** While many air shows are held at aerodromes and can take advantage of their facilities, a number could be staged at other sites. In assessing any proposed site the air show organiser should take into account:
  - (1) the suitability of surfaces used by aircraft for take-off, landing, and taxiing:
  - (2) the take-off and landing distances available:
  - (3) the identification of any obstructions in the vicinity of the site with regard to the aircraft types which are expected to participate:
  - (4) the proximity of congested areas of a city, town, or settlement, or open air assembly of persons to the display area, noting that the minimum safe heights specified in 91.311 apply to flight over such areas:
  - (5) the presence of livestock, or wild life, which may be susceptible to aircraft noise:
  - (6) the proximity of other aerodromes, heliports, parapenting sites, and parachute drop zones:

- (7) the availability of clear entry routes for emergency service vehicles, if they are to be provided for the air show.

**6.2.1.2** An air show site is sometimes used only for the assembly of spectators and aircraft do not take-off and land at the site. In such cases items (a) and (b) would not apply.

## **6.2.2 Flight display area**

**6.2.2.1** The air show site should contain a flight display area within which the flying displays can be conducted.

**6.2.2.2** The flying display area shall not have any congested area of a city, town, or settlement, or open air assembly of persons, other than the air show spectators, within 2000 feet of its boundary.

**6.2.2.3** The dimensions of the display flying area will be dependant on the display speed of the participating aircraft and the type of manoeuvres to be conducted. Display manoeuvres laterally to the display line will require a wider flight display area to maintain the distances from spectators.

**6.2.2.4** The flying display area should be of a size to ensure that the distances in Table 1 are maintained between any spectator area and the display aircraft throughout all manoeuvres. For aircraft flying in formation, the distances in Table 1 are applicable to the aircraft that is nearest to the spectator line.

*(See Appendix 1, Figure 1)*

**6.2.2.5** If ingress to, or egress from, the flight display area is over a congested area of a city, town, or settlement, or over any open air assembly of persons, pilots are required to be at or above the prescribed minimum safe height above such areas. In such cases, pilots should—

- (1) ingress to achieve a smooth transition to their display altitude; and
- (2) egress should be achieved at a climb rate consistent with the safe operation or the best angle of climb applicable to the type of aircraft being flown.

*(See Appendix 1, Figures 2 and 3)*

## **6.2.3 Marking of the display lines**

**6.2.3.1** Display aircraft normally perform relative to a display line. This should be clearly delineated for the participating pilots. Where the display line is not delineated by a runway or some other prominent ground feature, it should be marked with the likes of witches hats, panels, or marked lines.

**6.2.3.2** Airshows usually have aircraft with a wide variation in performance. The establishment of a single display line for the highest performance aircraft may be restrictive. In such a case a number of display lines may be established, and participating pilots should be individually and collectively briefed on the display line for their individual aircraft.



**Table 1. Display-line distances**

<b>Category</b>	<b>Maximum aircraft display speed</b>	<b>Distance between display line and spectator line for flypast display</b>	<b>Distance between display line and spectator line for aerobatic display</b>
1	300 kts plus	200 m	230 m
2	200 – 300 kts	150 m	200 m
3	100 – 200 kts	100 m	150 m
4	Less than 100 kts	50 m	100 m

#### **6.2.4 Aircraft parking**

**6.2.4.1** Parked display aircraft should be segregated from other aircraft parking and should be restricted to the public except when those aircraft are on static display.

**6.2.4.2** When the take-off runway is closer to the spectator area than the display line to any spectator area, no aerobatic manoeuvre immediately after take-off should be conducted until the aircraft—

- (1) has turned at least 20° towards the display line and away from any spectator area; or
- (2) passes the end of the spectator area and then if there are no persons under the flight path.

*(See Appendix 1, Figure 8 and 10)*

**6.2.4.3** Access to aircraft parking areas for other than static display aircraft should be controlled or restricted to the public.

#### **6.2.5 Spectator and car parking areas**

**6.2.5.1** Sites for spectator and car parking areas should be selected in relation to the aircraft flight paths and must never be located under them.

**6.2.5.2** On an aerodrome, the participating aircraft perform displays relative to a display line which usually is parallel to a runway. Spectator and car parking areas should be positioned behind a spectator line which itself is parallel to the display line.

**6.2.5.3** The minimum distances between the spectator area and flypast and aerobatic-display lines are specified in Table 1.

**6.2.5.4** Pilots shall plan their flying sequence to ensure that the aircraft flight path does not encroach upon the area between the display line and any spectator area and they do not initiate any manoeuvre in the direction of any spectator area.

**6.2.5.5** Crazy flying or similar routines involving excessive manoeuvring during take-off and landing, and aircraft dropping articles, should not be closer than 75 m to any spectator

area.

*(See Appendix 1, Figure 9) 6.2.5.7A rotorcraft display, other than a fly-past display or aerobatic display, should be no closer than 50 m to any spectator area.*

**6.2.5.6** The minimum distance between the spectator area and the centreline of any runway being used for normal take-off and landing should be—

- (1) for aircraft with normal landing and take-off speed less than 100 knots, 60 m or 10 m from the edge of the runway strip whichever is the greater; or
- (2) for aircraft with normal landing and take-off speeds 100 knots or more, 75 m or 10 m from the edge of the runway strip whichever is the greater.

*(See Appendix 1, Figures 11 and 12)*

**6.2.5.7** Spectator and car parking areas should be sited away from taxiway and runway strips and allow a clearance of 15 m from taxiing aircraft. Spectators should not be allowed closer than 15 m to any fixed re-fueling area, nor within 10 m from any fueling or venting point on any aircraft or fuel pump.

**6.2.5.8** Effective barriers, signs, and marshalling procedures are required to keep spectators clear of aircraft manoeuvring areas. Areas in which spectators are not permitted shall be properly enclosed, and marshallers should be used to control the movement of spectators throughout the airshow.

## **6.2.6 Minimum display heights**

**6.2.6.1** For fly-past displays, other than for an agricultural operation display or a rotorcraft display, the minimum height should be not less than 100 feet above the surface.

**6.2.6.2** For aerobatic displays the pilot shall be the holder of an aerobatic rating issued under Part 61; and the minimum display height shall be the minimum height authorised in the aerobatic rating.

## **6.2.7 Ground special effects**

The use of explosives for simulated ground bursts, smoke, and other special effects should be strictly controlled by a competent person appointed by the organiser. Debris from such effects must not be a hazard to aircraft or spectators. Briefings for ground officials and display pilots must draw attention to the hazardous nature of such devices.

Safety zones should be established around the sites of the devices which are out of bounds to any person other than those directly involved in their operation.

## **6.2.8 Briefing**

**6.2.8.1** The importance of a thorough formal briefing attended by all the display participants cannot be over-emphasised. No pilot should participate in a flying display unless they have received an appropriate briefing.

**6.2.8.2** A written brief on the arrangements for the flying programme should be circulated in advance to all participating pilots, Air Traffic Control, other aircraft operators who may be flying during the display, and to those providing specific functions such as rescue fire, or first aid. Any participants who are not landing at the display venue, or conducting their display prior to landing, should, in particular, receive a written brief. It may also be

necessary to arrange a means of notifying any changes in the flight programme to such participants.

**6.2.8.3** A formal verbal briefing should be given on each day of the display and at any rehearsal day, and all participants should attend. The briefing should include meteorological forecasts, Air Traffic Control procedures, and a time check. It should also include any changes to the programme or procedures, and a reminder about the authority of the display co-ordinator to curtail or modify the flying programme once it has started.

**6.2.8.4** The need for strict adherence to procedures should be stressed, particularly in the event of a programme change. Pilots must be specifically reminded that they must not fly over spectator or car park areas, or encroach into the buffer zone between the display line and any spectator area. They must also be reminded to comply with the minimum safe heights when flying over any adjacent congested areas during egress and ingress into the display area. They must also be advised of any limitation on the use of the airspace, and that they are still responsible for avoiding collisions.

### **6.2.9 Document checks**

**6.2.9.1** The airshow organiser should confirm that all participating pilots are the holders of licences and ratings appropriate to the display they intend to conduct.

**6.2.9.2** In the case where a participating aircraft is not landing at the venue prior to the display, they should be required to provide copies of their documents of their licences and ratings.

### **6.2.10 Pilot's display programme**

The airshow organiser should be familiar with each pilot's planned sequence of flying and ensure that it complies with safety criteria. Both the full display sequence and any bad weather alternatives should be agreed to.

### **6.2.11 Non-display flights**

**6.2.11.1** Aircraft not involved in the display flying programme should not be flown during the air show.

**6.2.11.2** If such flights must be conducted, the flying display should be suspended and all display aircraft positioned clear of the flight paths of these aircraft until they are clear of the display area. Refer also to paragraph 6.5.6.

## **6.3 Air show authorisation**

The air show organiser is required to request authority to conduct an air show by submitting an application form CAA 91/03 to the Director at least 90 days before the event.

## **6.4 Liaison with authorities and services**

### **6.4.1 Police and local authorities**

**6.4.1.1** The air show organiser is strongly advised to involve the police at an early date so that arrangements can be made for controlling vehicular traffic, and the provision of emergency services. The organiser may, through the police and local authorities, wish to restrict the presence of the public in areas in the vicinity of the aerodrome which are below the display flight paths. The presence of public in such areas would mean that they are congested areas and therefore restrict the flight paths of the participating aircraft.

**6.4.1.2** Local authorities having control of various public services which the air show organiser may

wish to use should be advised as early as possible of the intention to conduct an air show so that an approach for assistance will not be unexpected. The local authorities will need to be made aware of the additional air activity to be able to anticipate any queries or complaints that they might receive.

#### **6.4.2 Emergency and first aid services**

- 6.4.2.1** Adequate facilities should be available to cope with any potential aircraft accident and the treatment of casualties.
- 6.4.2.2** At larger aerodromes, the rescue fire and firefighting service, medical, and first aid facilities already provided should suffice.
- 6.4.2.3** At aerodromes where emergency service and facilities are not provided by the aerodrome operator, the air show organiser should make arrangements for emergency services to be on site, or at least on standby, to attend to an emergency.
- 6.4.2.4** The air show organiser should establish whether the aerodrome operator has an emergency plan in place for the normal operations conducted at the aerodrome. If the aerodrome operator has such a plan, the organiser should establish, with the aerodrome operator, that the emergency plan is adequate, or if it needs to be augmented during the air show.
- 6.4.2.5** If the aerodrome operator does not have an emergency plan, the organiser should contact the local emergency organisations. Advise them of the activity and the possibility that an emergency requiring their services could occur during the air show.

### **6.5 Air Traffic Control (ATC)**

- 6.5.1** The need for the provision of ATC for an air show at an aerodrome is determined by the number of aircraft expected to attend in support of, and participating in, the airshow.
- 6.5.2** The CASA PNG will make this determination when processing the application by the air show organiser for authority to conduct the event. The air show organiser may have determined that ATC will be in attendance anyway. If so this advice should be given to the CASA PNG when application to conduct the air show is made.
- 6.5.3** In the case of an authorisation to conduct an aviation event, the organizer should determine the need for ATC and if unsure should consult with the CASA PNG. If ATC is required, the same 90 day period of notification to the CASA PNG is required for the promulgation of the details about ATC and the associated airspace. If the 90 day period is not complied with, CASA PNG may rescind the authorisation if the details cannot be promulgated within the time remaining.
- 6.5.4** When the CASA PNG or the organiser determines that ATC is required, the air show organiser is then responsible for the provision of the service by a properly certificated organisation.
- 6.5.5** ATC, when required, will usually only be exercised for the movement of aircraft before or after the display programme. ATC should be activated during the display programme to facilitate the movement of non-display aircraft in the display area or in the airspace adjacent to the aerodrome. If the movement of a non-display aircraft occurs during the flying display, ATC should suspend the flying display during that movement.
- 6.5.6** Flight by non-display aircraft, such as helicopters, during the flying display may be conducted without ATC if—
  - (1) landing and take-off areas and flight paths have been established clear of the flying display

area; and

- (2) the display co-ordinator has established any required procedures for the safety of the flights and briefed the participating pilots.

## **6.6 Airshow control**

- 6.6.1** As mentioned in paragraph 6.5.5 ATC is not usually exercised during the flying display. The display co-ordinator is responsible for flying discipline and for co-ordinating the flying programme and the pilots are responsible for avoiding collision.
- 6.6.2** To discharge these responsibilities the display co-ordinator should establish radio communication with participating aircraft equipped with radio to advise of any modification to the flying programme. Modification may be required due to delays in a flying routine, aircraft unserviceability, other aircraft movements, or weather.
- 6.6.3** The display co-ordinator may delegate this function to another qualified person during the airshow but must be immediately available to that person. Consultation may be required for decision making during the display, and the display co-ordinator is ultimately responsible for the conduct of the flying display

## **7. Air Show Practice**

### **7.1 Rule Exceptions**

The rule exceptions described in paragraph 1.2 are applicable to this activity.

### **7.2 General requirements**

- 7.2.1** The requirements relating to air shows contained in paragraph 2 are equally applicable to an air show practice.
- 7.2.2** Authority for an airshow practice is required as for an air show to be issued by the Director.
- 7.2.3** If the air show practice is to be conducted prior to and at the same site of an airshow, include the practice day with the application for authority to conduct the air show.
- 7.2.4** If the air show practice is not in conjunction with an air show, the application process is the same as that for an air show.

## **8. Aerobatic Competition**

### **8.1 Rule Exceptions**

The rule exceptions described in paragraph 1.2 are applicable to this activity.

### **8.2 Authorisation**

Authority for an aerobatic competition is required to be issued by the Director.

### **8.3 General Requirements**

- 8.3.1** A prerequisite for an authorisation for an aerobatic competition is the nomination of an aerobatic competition organiser to be responsible for the organisation and conduct of the flying activities.
- 8.3.2** Whilst an aerobatic competition is not as complex as an air show and the flying is limited to aerobatics, the same requirements as contained in Paragraph 2 for air shows are equally

applicable to this activity.

## **9. Aerobatic Training or Practice**

### **9.1 Rule Exceptions**

The rule exceptions described in paragraph 1.2 are applicable to this activity.

### **9.2 Authorisation**

Authority for aerobatic training or practice is required to be issued by the Director.

### **9.3 Aerobatic Training or practice Area**

**9.3.1** If the aerobatic practice or training is to be conducted at an aerodrome, the same criteria as contained in paragraph 2 for air shows should be applied and the following complied with–

- (1) there shall be no other aircraft operating on or in the vicinity of the aerodrome; and
- (2) the distances between the aerobatic area and any persons or property on the aerodrome should be those contained in Table 1; and
- (3) if the aerobatic practice or training area is not at an aerodrome, the area shall be such that compliance with 91.701, Aerobatic flight, is assured.

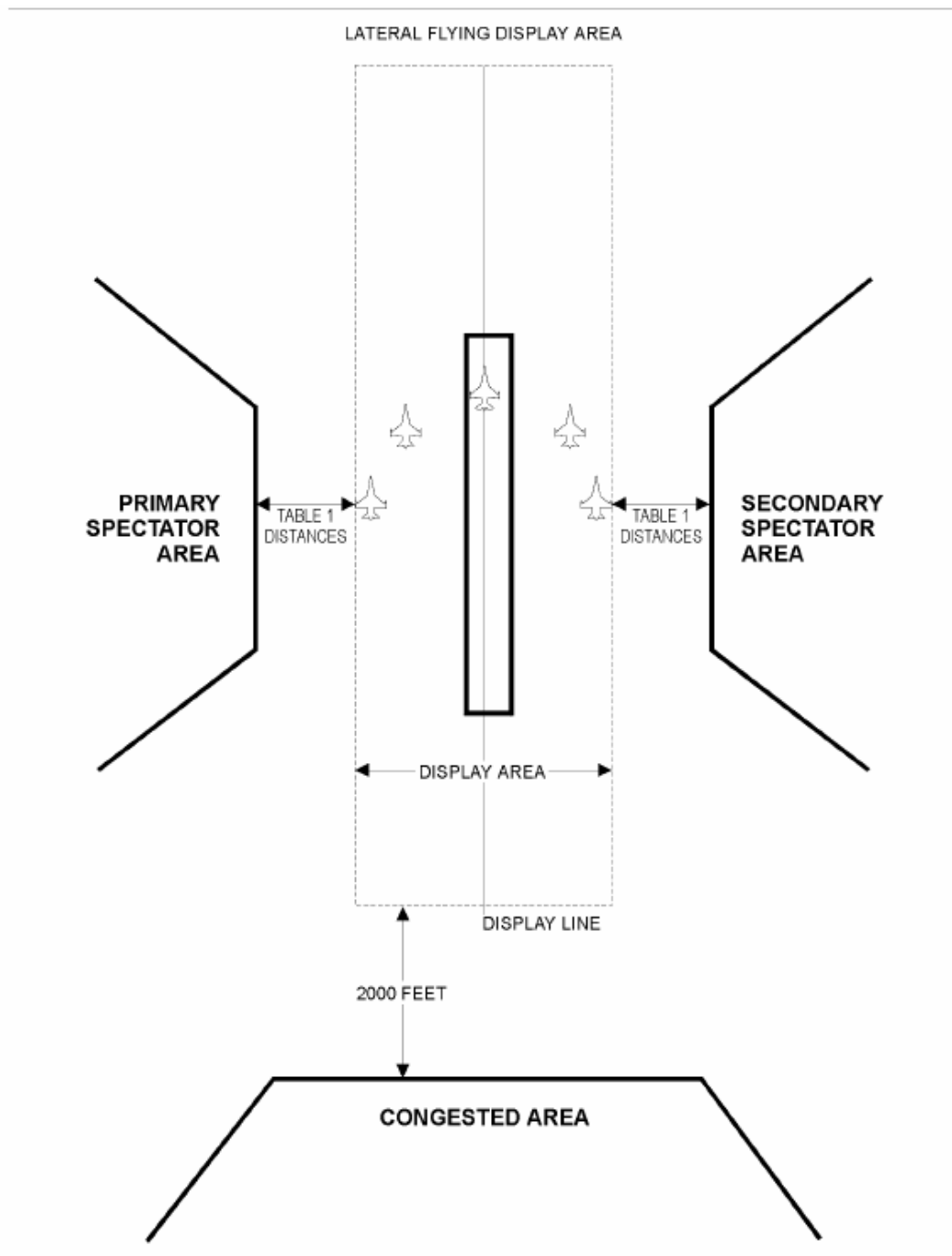
**9.3.2** An aerobatic area should be selected that minimises any nuisance to persons or property on the ground. It is recommended that in order to avoid possible action taken by the land owner, the consent of the land owner is received for the activity to be conducted over that property. It would also be beneficial to liaise with the police, local authorities and possibly nearby residents.

## APPENDIX 1 – Figures

### Display Lines and Flight Display Areas

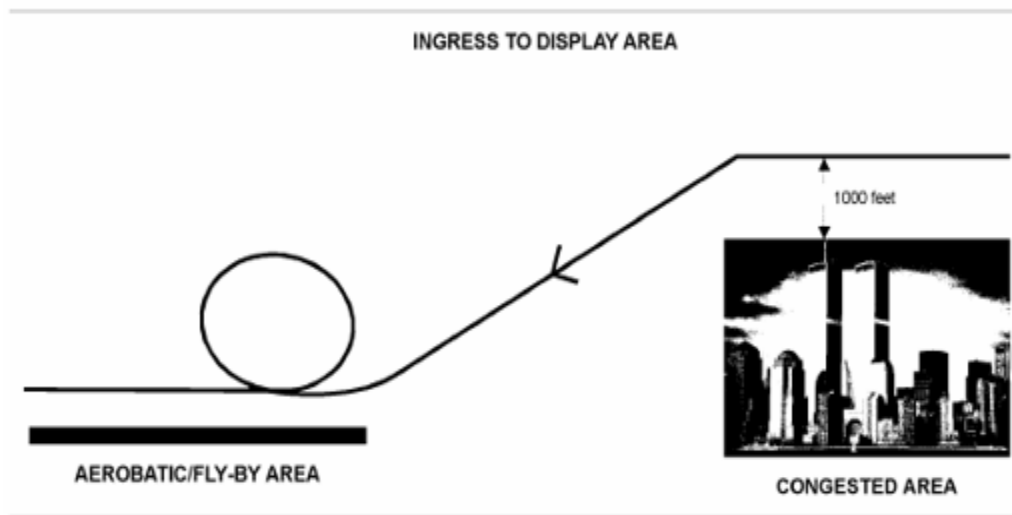
Figure	1	Aircraft formation display area
Figure	2	Ingress to display area
Figure	3	Egress from display area
Figure	4	Category 1 aircraft display line
Figure	5	Category 2 aircraft display line
Figure	6	Category 3 aircraft display line
Figure	7	Category 4 aircraft display line
Figure	8	Aerobatic manoeuvre after take-off
Figure	9	Minimum distance for “crazy flying” or dropping of articles
Figure	10	Aerobatic manoeuvre after take-off
Figure	11	Minimum distance for take-off and landing speed less than 100 knots
Figure	12	Minimum distance for take-off and landing speed 100 knots or greater

**Figure 1. Aircraft formation flying display area**

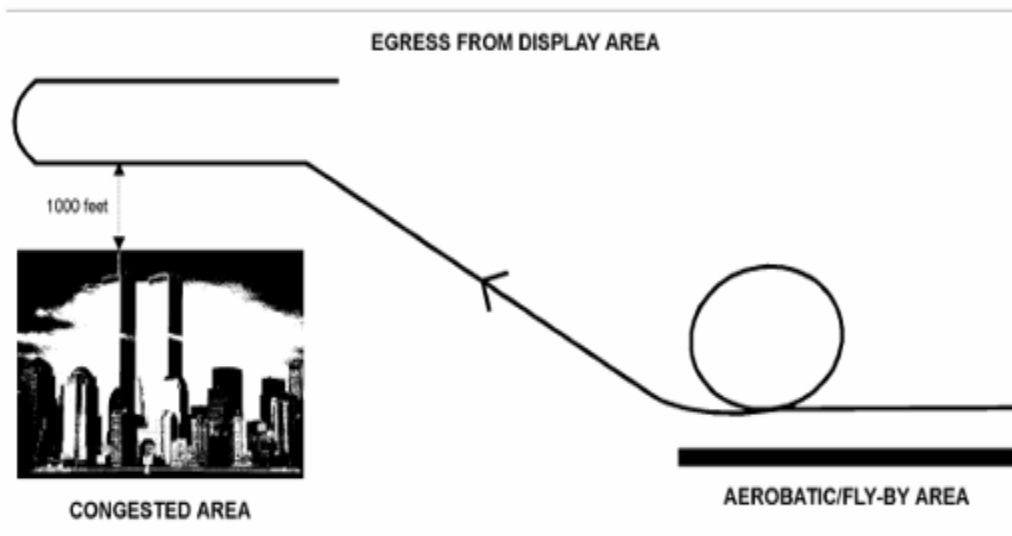




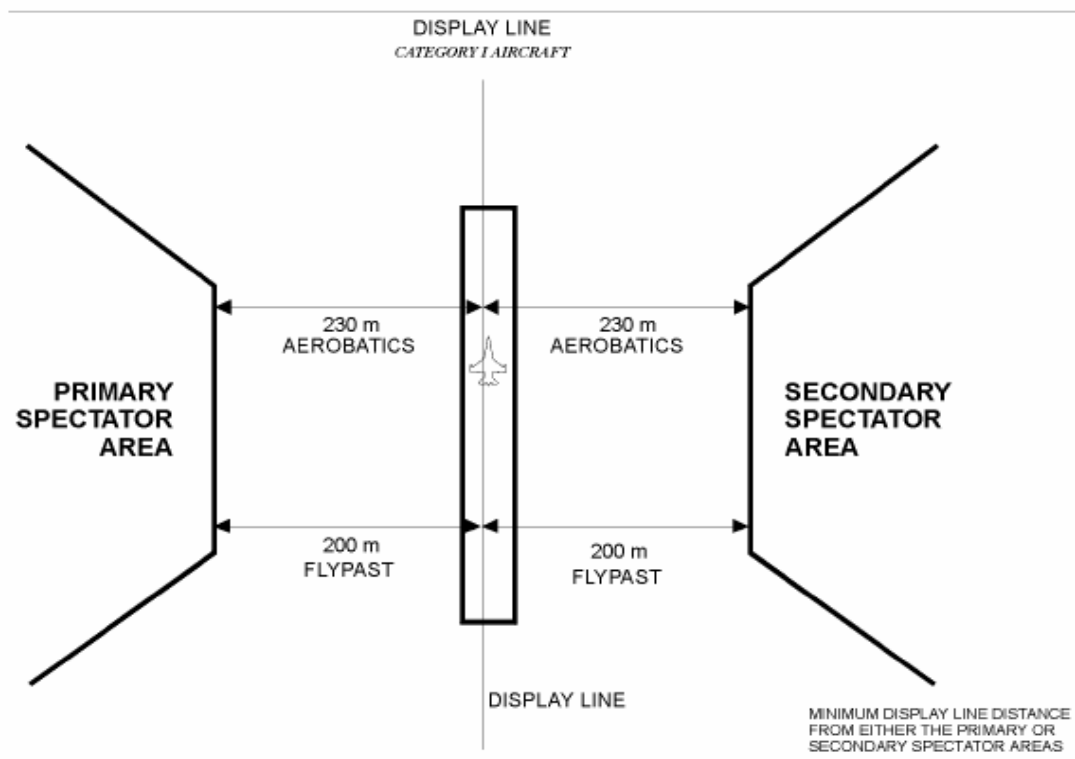
**Figure 2. Ingress to Display Area**



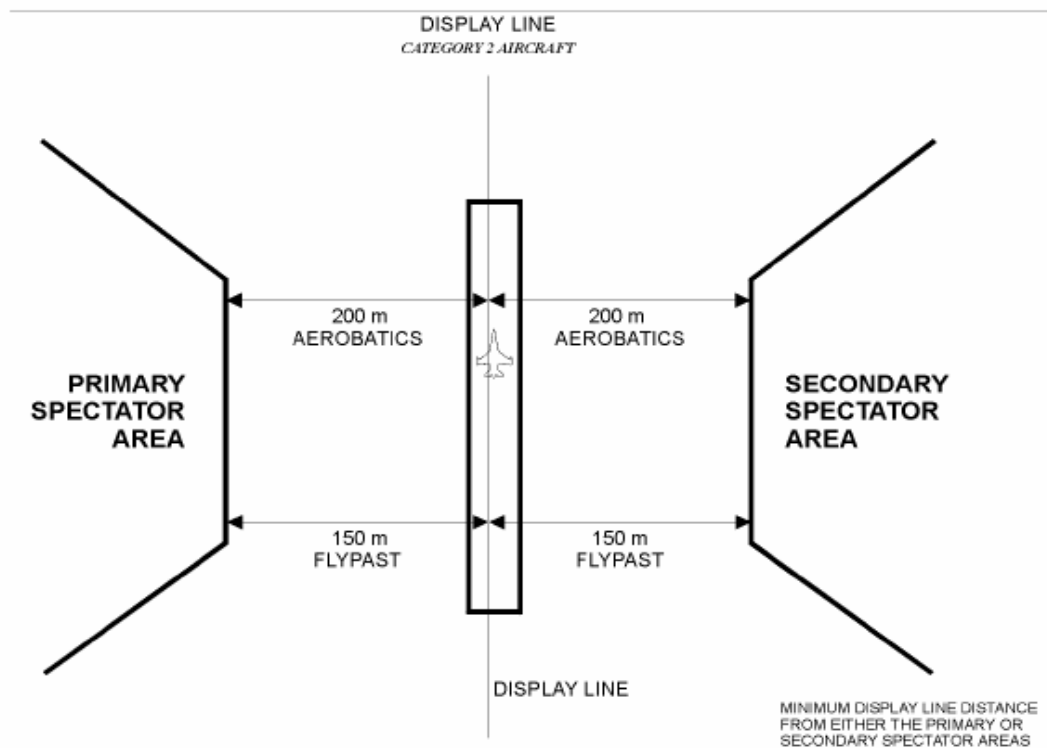
**Figure 3. Egress form display area to congested area**



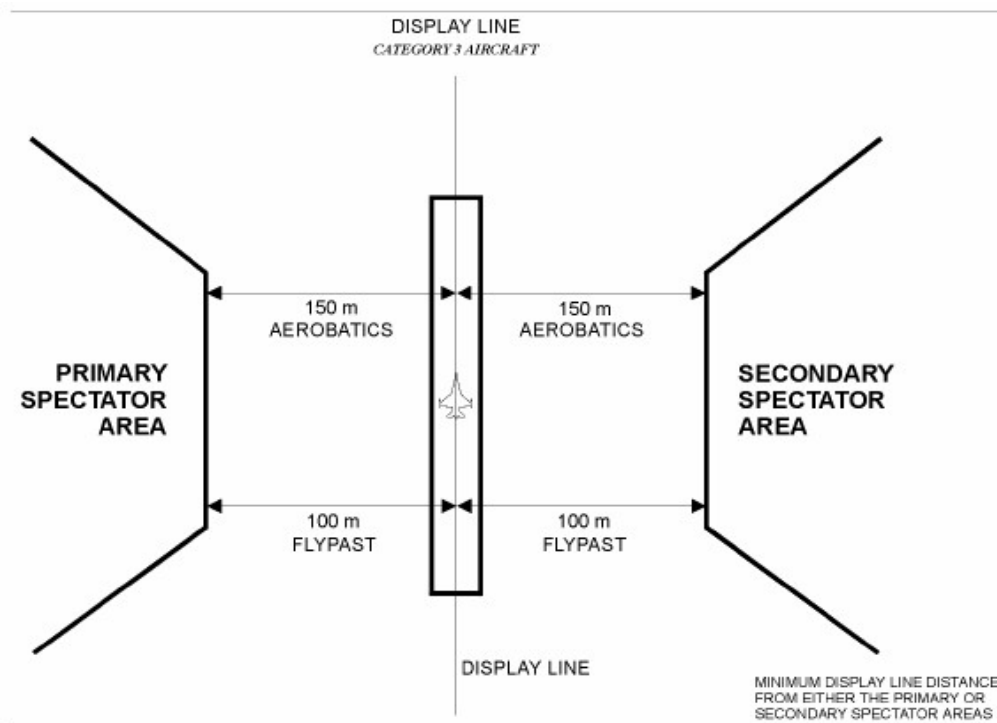
**Figure 4. Category 1 aircraft display line**



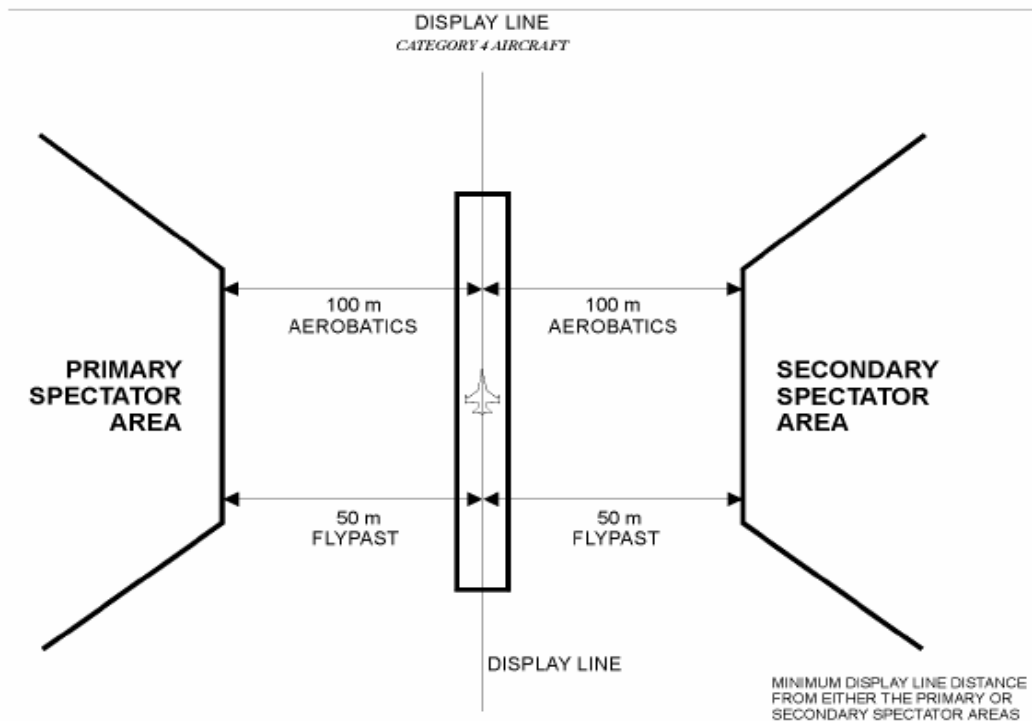
**Figure 5. Category 2 aircraft display line**



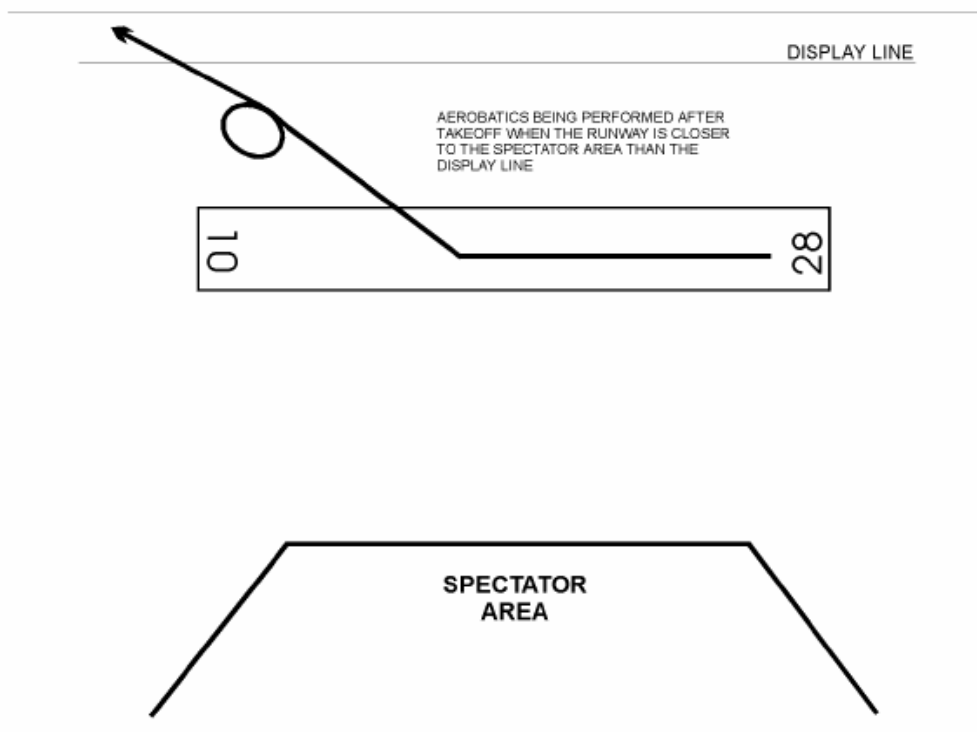
**Figure 6. Category 3 aircraft display line**



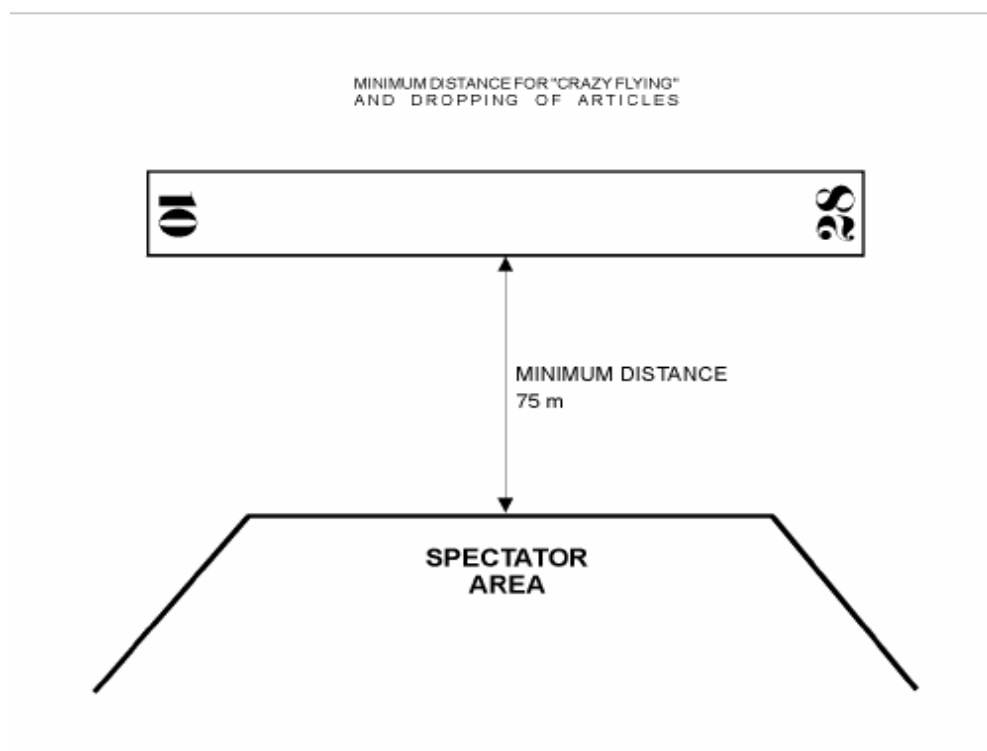
**Figure 7. Category 4 aircraft display line**



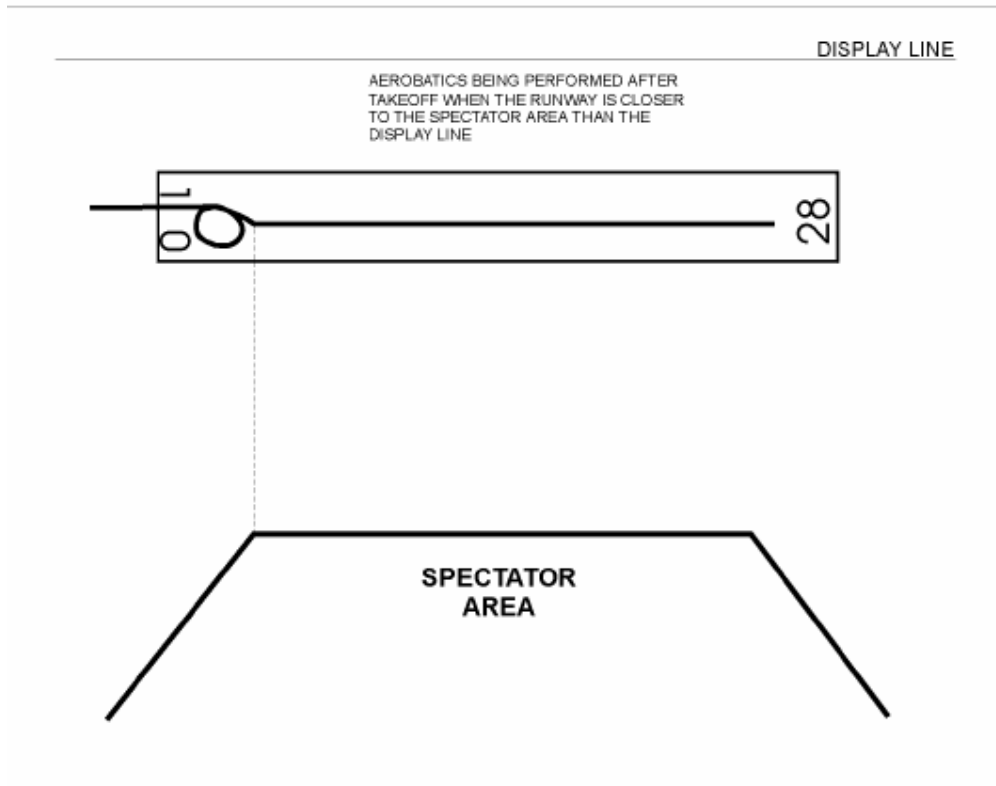
**Figure 8. Aerobatic manoeuvre after take-off. Runway to spectator distance of at least 100m**



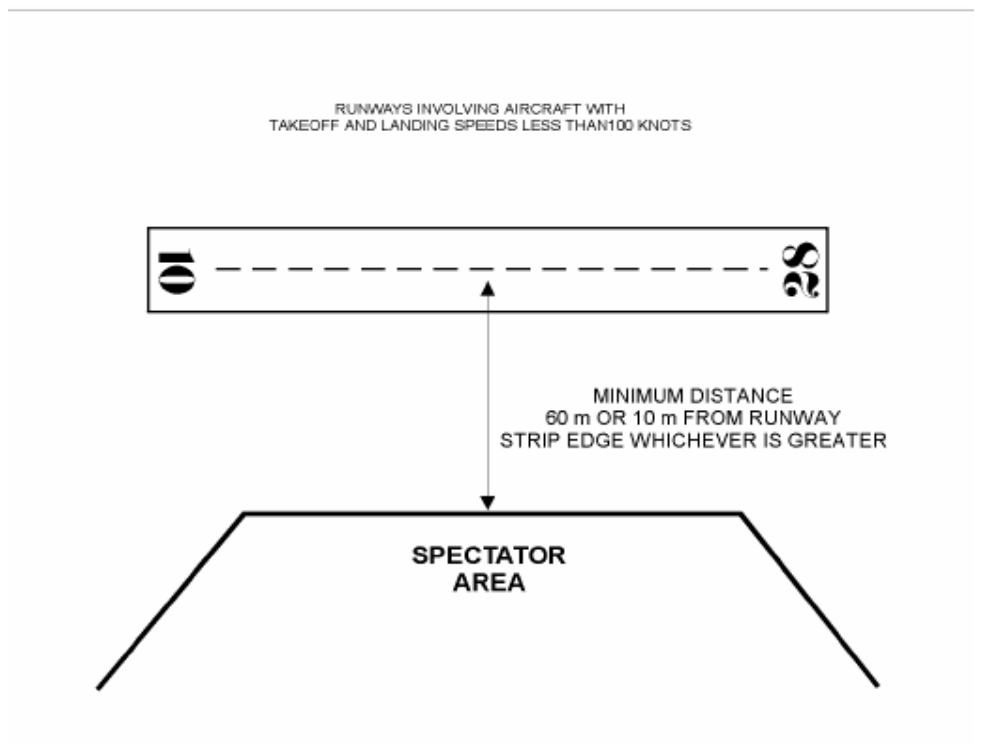
**Figure 9. Minimum distance for "crazy flying" or dropping of articles**



**Figure 10. Aerobatic manoeuvre after take-off**



**Figure 11. Minimum distance for take-off and landing speed less than 100 knots**



**Figure 12. Minimum distance for take-off and landing speed 100 knots or greater**

