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Legal basis: Section 57 and 72 of the Aviation Act (864/2014)		
Provisions on sanctions for operations violating this Regulation are laid down in: Section 175 and 178 of the Aviation Act (864/2014)		
Modification details: This Regulation repeals Aviation Regulation OPS M1-2 on flying displays and flying competitions (<i>Lentonäytökset ja lentokilpailut</i>) issued by the Finnish Civil Aviation Administration on 16 April 1997.		

Flying displays and flying competitions

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1 SCOPE OF APPLICATION

1.1 This Regulation concerns flying displays subject to permission organised in Finland. The Regulation is applied to flying and parachuting competitions as specified separately in section 6.

1.2 This Regulation is not applicable to military aviation displays. If the flying display is organised by a civil organiser but also includes displays by military aircraft, the requirements in this Regulation are also applied to the military aviation part of such a display as far as practicable.

2 DEFINITIONS

2.1 For the purposes of this Regulation:

vehicle parking area refers only to vehicle parking areas available to the crowd during the flying display;

display area refers to the area reserved for flying display activities where an aircraft pilot may perform flight manoeuvres in accordance with the restrictions imposed by the flying display permission and possible public display authorisation;

display line refers to the line defining the minimum distance that a performing aircraft must keep to the crowd line;

flying display refers to a public event as specified in the Assembly Act (530/1999), in which aviation activities are organised for spectators;

flying display director (FDD) refers to the person approved in the flying display permission by the Finnish Transport and Communications Agency who is responsible for the safe arrangement of flight operations in the flying display;

event area refers to the whole of the crowd areas and display areas;

display pilot refers to a pilot with a public display authorisation or an exemption issued by the aviation authority that allows them to participate in a flying display or associated practise;

public display authorisation (PDA) refers to a national document defining the types or classes of aircraft on which the pilot is authorised to participate in a flying display, complemented with possible restrictions and additional notes;

minor flying display refers to a flying display that does not involve aerobatic flying by manned aircraft equipped with jet engines, has a duration of not more than one day and includes a maximum of five display items;

pyrotechnics refers to any article or equipment that is used to produce special effects and that contains substances or a mixture of substances producing heat, light, sound, gas or smoke or a combination of such effects through chemical reactions;

skill level refers to the following categories:

- Restricted
- Standard
- Intermediate
- Advanced
- Unlimited;

event organiser (EO) refers to the director of an event that includes a flying display responsible for the safety of the event apart from the flight operations;

sight-seeing flight refers to a passenger flight starting from or arriving at the flying display site operated in accordance with commercial air transport regulations;

crowd line refers to the line delineating the closest edge of crowd areas and vehicle parking areas accessible to spectators during the flying display;

crowd refers to people in the areas reserved solely for spectators in the flying display.

2.2 All minimum flight altitudes imposed in this Regulation shall be determined from the aerodrome reference point elevation (AD ELEV) or from the display area elevation, whichever is higher. For displays held outside aerodromes, the minimum flight altitudes shall be determined from the highest obstacle within a 600-metre radius of the aircraft.

3 GENERAL RESPONSIBILITIES AND REQUIREMENTS OF THE EVENT ORGANISER AND THE FLYING DISPLAY DIRECTOR

3.1 As the representative of the organising body, the event organiser (EO) is responsible for the planning and risk assessment of the flying display together with the flying display director (FDD). The EO is also responsible for the safety of the crowd and the event apart from the flight operations.

3.2 The FDD is responsible for the safety arrangements of the flying display as regards flight operations. In order to be approved as the FDD, the person must have sufficient knowledge on flying display activities, the organisation of flight operations and the performance of aircraft taking part in the display.

3.3 The same person cannot be both the EO and the FDD, except in cases of minor flying displays as intended in section 5.

4 PERMISSIONS FOR THE ORGANISATION OF A FLYING DISPLAY AND FLYING COMPETITION

4.1 The permissions required for the organisation of flying displays and flying competitions are provided for by section 72 of the Aviation Act.

4.2 The FDD shall ensure that the flying display or flying competition application is submitted to the authorities no later than 8 weeks prior to the intended event. The aerodrome operator's consent for the event being organised and any conditions imposed by the aerodrome operator must be attached to the application.

4.3 The permission issued applies to all flight operations related to the event, including military flight operations taking place in connection with a civil flying display. The flying display or flying competition permission may contain special permissions and exemptions relating to:

- (1) flying at low altitude;
- (2) dropping or lifting of articles or persons;
- (3) transporting of persons (on the wing, etc.);
- (4) flying in close proximity to the crowd;
- (5) flying at a speed exceeding 250 kts at an altitude of less than 10,000 ft (FL 100);
- (6) landing outside the aerodrome, and
- (7) exceeding the pavement classification number (PCN) of the aerodrome runway.

4.4 The FDD shall ensure that the Finnish Transport and Communications Agency is notified of any significant changes to the information presented in the flying display or flying competition application during the application process. Any significant changes made after the permission was issued must be separately approved by the Agency. The EDD shall also inform the aerodrome operator of any significant changes.

4.5 When a flying competition does not require a permission, a notification referred to in section 6.5 must be submitted.

4.6 Flying display permission for an individual performance

The Finnish Transport and Communications Agency may issue a display pilot with a flying display permission for an individual performance, in which case the pilot is independently responsible for the safe organisation and completion of the performance. The display pilot shall ensure that the individual performance complies with the following requirements of this Regulation:

- a. Event risk assessment (section 7)
- b. Aircraft ground handling (section 9.2)
- c. Temporary airspace arrangements (section 9.6)
- d. Responsibility for cooperation with the rescue service (section 9.7.7)
- e. Reporting obligation after the display (section 9.8)
- f. Flight operations at the displays, as applicable (section 10)
- g. Coordination with sight-seeing flights (section 11.4).

5 MINOR FLYING DISPLAYS

The requirements of this Regulation are eased for minor flying displays as follows:

- the same person can act as the FDD and the EO (section 3);
- written and verbal briefings (section 9.1): only the verbal briefing referred to in section 9.1.2 is required;
- crowd control and telecommunications connections (9.3.1): telecommunications control centre is not required;
- as for insurance (section 9.4.2), documents (section 9.5), public display authorisation (section 8) and the competence of a remote pilot of an unmanned aircraft (section 11.2.7), an assurance by the pilot on meeting the requirements is sufficient.

6 FLYING COMPETITIONS

6.1 The organisation responsible for a flying competition shall designate a competition director responsible for the safe organisation and flight operations in the competition. In the case of flying competitions, the competition director is responsible for the tasks and duties appointed to the FDD.

6.2 If a flying competition subject to permission in accordance with section 72 of the Aviation Act is also a public event, all requirements of this Regulation must be complied with, apart from the requirements on display pilots.

6.3 Flying competitions subject to permission that are not public events must comply with the following requirements of this Regulation:

- a. event risk assessment (section 7): however, the assessment is not required to be provided to the Finnish Transport and Communications Agency in connection with the flying competition notification
- b. written and verbal briefings (section 9.1): only the verbal briefing referred to in section 9.1.2 is required
- c. documents (section 9.5)

- d. temporary airspace arrangements (section 9.6)
- e. reporting obligation (section 9.8)
- f. selection of the area used (section 10.5.1)
- g. maximum permitted speed (section 10.6)
- h. unmanned aircraft (section 11.2)
- i. parachuting (section 11.3).

6.4 Flight operations carried out in flying competitions must comply with the requirements of the Commission Implementing Regulation laying down the common rules of the air (SERA)¹, unless otherwise provided by the flying competition permission.

6.5 When a flying competition does not require a permission in accordance with the Aviation Act, the competition director must ensure that a notification of the competition is submitted to the Finnish Transport and Communications Agency 14 days prior to the intended date of the competition.

6.6 With regard to flying competitions other than those requiring competition permission in accordance with section 72 of the Aviation Act, the following requirements of this Regulation must be complied with:

- a. event risk assessment (section 7): however, the assessment is not required to be provided to the Finnish Transport and Communications Agency in connection with the flying competition notification
- b. temporary airspace arrangements (section 9.6)

7 EVENT RISK ASSESSMENT

7.1 The EO together with the FDD is responsible for drawing up a risk assessment for the event and for considering it when organising the event. The risk assessment shall be presented to the Finnish Transport and Communications Agency in connection with the display permission application and submitted to the aerodrome operator for information.

7.2 The risk assessment must contain at least the following information:

- name and date(s) of the event;
- name of the person(s) who drafted the risk assessment;
- risk assessment change management information;
- identified threats, including how the safety of the crowd and third persons is ensured;
- assessment of the risks, considering the impact and likelihood of their realisation;
- risk mitigation measures and any residual risks after the mitigation measures;
- how the presence of identified and previously unidentified risks is monitored during the whole event, and how any identified risks are responded to on time and proactively;

¹ Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJEU L 281, 13.10.2012, p. 1-66)

- who is responsible for the monitoring of risk management measures;
- approval of the EO and the FDD for the risk assessment and any residual risks.

7.3 If necessary, the risk assessment must be updated even after the display permission has been issued. Any changes must be reported to the Finnish Transport and Communications Agency and submitted to the aerodrome operator for information.

8 PUBLIC DISPLAY AUTHORISATION

8.1 A public display authorisation (PDA) is only required from pilots performing aerobatic flying, unless the Finnish Transport and Communications Agency views that the flying programme or procedures used in it otherwise require a public display authorisation. However, the PDA requirement does not apply to unmanned aviation, military aviation or to pilots from the Finnish Border Guard.

8.2 Experience requirements

8.2.1 A pilot applying for their first PDA must provide proof that they have the minimum experience in accordance with the following:

- (a) pilot of an aeroplane (including motor gliders), helicopter or autogyro must have a total flight time of at least 200 h, of which a minimum of 100 h as the pilot-in-command of an aeroplane, helicopter or autogyro, depending on which aircraft they pilot;
- (b) pilot of an ultralight aeroplane must have a total flight time of at least 100 h, of which a minimum of 50 h as the pilot-in-command of an ultralight aeroplane with the steering method used in the display;
- (c) pilot of a glider must have a total flight time of at least 100 h, of which a minimum of 50 h as the pilot-in-command of a glider.

8.2.2 A PDA is not required from balloon, hang glider or paraglider pilots nor parachutists. They must nonetheless meet the following requirements in order to participate in a flying display:

- (a) pilot of a motorised glider must have a total flight time of at least 50 h, of which a minimum of 25 h as the pilot-in-command of a motorised glider;
- (b) pilot of a hot air airship must have a total flight time of at least 100 h with an airship or balloon, of which a minimum of 50 h as the pilot-in-command of a hot air airship;
- (c) pilot of a gas airship (volume over 2,000 m³) must have a total flight time of at least 200 h with an airship or balloon, of which a minimum of 100 h as the pilot-in-command of a gas airship;
- (d) pilot of a gas airship (volume 2,000 m³ or under) must have a total flight time of at least 100 h with an airship or balloon, of which a minimum of 50 h as the pilot-in-command of a gas airship;
- (e) pilot of a balloon must have a total flight time of at least 50 h with a balloon, of which a minimum of 25 h as the pilot-in-command of a hot air balloon or gas balloon, depending on which they pilot;
- (f) no minimum experience requirement applies to glider or paraglider pilots, but they must meet the qualification requirements set by the FDD for the intended performance; and

- (g) as regards parachutists, the required minimum experience is at least 200 self-opening jumps when using a ram-air parachute. When using a round parachute, the minimum experience requirement for a group leader or solo jumper is 200 jumps and for other group members 100 jumps. The minimum experience requirement for a tandem jumpmaster is 500 self-opening jumps.

8.3 Approval and issue of the authorisation

8.3.1 The PDA specifies the following:

- aircraft class, type or individual aircraft approved for displays;
- minimum flight altitude approved for displays;
- approval for aerobatic flying or other manoeuvring in accordance with the aircraft flight manual / flight instructions;
- skill level;
- any other restrictions or additional approvals, such as flying in formation or special types of air operations.

8.3.2 The PDA is issued only after the applicant has provided proof to the examiner from the Finnish Transport and Communications Agency that they have the skills corresponding to the applied skill level and minimum flight altitude, as required for safe completion of the display. Such an assessment flight must always be carried out on the aircraft class or type or the individual aircraft for which approval is sought.

8.3.3 The lowest possible minimum flight altitude in the PDA for aerobatic flying is 200 ft. The minimum flight altitudes and skill levels take into account the accrual of display pilot experience by gradually lowering the minimum flight altitude and raising the skill level. If necessary, the Finnish Transport and Communications Agency may, for an individual flying display, grant permission to fly below the minimum flight altitude specified in the PDA.

8.3.4 On the assessment flight and associated examination, particular attention is paid to the following:

- ability to fly in accordance with the display line
- ability to comply with the selected altitude
- ability to comply with the approved timing
- ability to take into account changing conditions, such as the effect of cross-wind pushing towards the crowd
- ability to manage aircraft total energy during the performance
- safe operation in unexpected and risk-prone situations
- the pilot's attitude towards display flying.

8.3.5 The Finnish Transport and Communications Agency may approve a PDA issued by another state for a flying display organised in Finland.

8.4 Period of validity

A PDA is valid for a maximum of three years from the date of issue or renewal, provided that the requirements for recent experience imposed in section 8.6 are met.

8.5 Extending and renewing the validity

8.5.1 In order to extend the validity of the PDA or to renew an expired authorisation, the holder must have during the preceding 12 months:

- (a) performed in a flying display at least once and, according to log book entries, practised the flying display programme or a series of manoeuvres comparable to the PDA skill level in aerobatic flying competitions for at least 10 times; or
- (b) demonstrated their skills to an examiner from the Finnish Transport and Communications Agency in accordance with section 8.3.2.

8.5.2 For at least every other extension of validity of the PDA, the applicant shall demonstrate their skills to an examiner from the Finnish Transport and Communications Agency in accordance with section 8.3.2.

8.5.3 Demonstrating skills on one aircraft class, type or category also extends the validity of the PDA for other aircraft classes, types and categories, provided that the right to fly is valid for all aircraft classes or types in question.

8.5.4 The PDA is marked to be valid until the end of the month in question.

8.6 Recent experience

Prior to performing in a flying display, the holder of a PDA must demonstrate to the FDD that they have fully performed or practised their performance on the aircraft class, type or individual aircraft used at least 3 times in the past 90 days. Recent experience can be proved by entries in the pilot log book, showing that the programme has been performed or practised in its entirety. The practicing may not take place in connection with a public event, in a densely populated area or in the proximity of crowds gathered outdoors. Practising below minimum flight altitudes specified in the Rules of the Air is only permitted above an aerodrome.

9 ORGANISATION OF A FLYING DISPLAY

9.1 Written and verbal briefings

9.1.1 The FDD shall ensure that, in advance of the display date, all participants are sent a written briefing that includes the following information:

- (1) flying display location, date, time and duration;
- (2) planned display programme and times of verbal briefings;
- (3) event area map showing the location of crowd areas, display lines and display areas;
- (4) information on air traffic:
 - (i) arrivals and departures;
 - (ii) transponder codes and radio frequencies;
 - (iii) display procedures.
- (5) display restrictions and meteorological minima;
- (6) local flying restrictions;
- (7) consideration of environmental factors (e.g. noise-sensitive areas);
- (8) rescue services and emergency procedures;
- (9) ground handling, parking and refuelling procedures;

- (10) required documents; and
- (11) persons responsible for the display and their contact details.

9.1.2 The FDD or competition director must give a verbal briefing before any flying on the first day of the display, and on each following day in case the event lasts for several days. They must ensure that the verbal briefing provides the following information:

- (1) display permission and any associated conditions;
- (2) local flying restrictions;
- (3) current weather conditions and forecast for the time of the display;
- (4) detailed display programme that contains radio calls, any flight operations taking place before and after the flying display, and any specifically approved minimum flight altitudes;
- (5) information on air traffic:
 - (i) arrivals and departures;
 - (ii) transponder codes and radio frequencies; and
 - (iii) display procedures.
- (6) locations of:
 - (i) crowd area(s);
 - (ii) display line(s); and
 - (iii) display area(s).
- (7) rescue services and emergency procedures;
- (8) ground handling, parking and refuelling procedures; and
- (9) consideration of environmental factors (e.g. noise-sensitive areas).

9.1.3 If a display pilot or competition pilot is prevented from participating in the verbal briefing, the FDD or competition director shall ensure that the pilot has received the information required in section 9.1.2 before performing.

9.2 Aircraft ground handling

9.2.1 In cooperation with the EO, the FDD shall ensure that:

- (1) crowd access to aircraft stands used by display aircraft and to manoeuvring areas is prevented and the barriers are kept in place throughout the flying performances. The FDD shall also ensure that access to these restricted areas is controlled and only allowed for authorised persons;
- (2) aircraft refuelling sites are monitored, and the minimum distance between the crowd and the aircraft or equipment being refuelled is 15 m. When filling a hydrogen gas balloon or airship or balloon cylinders, the minimum distance must be 100 m;
- (3) the minimum distance between any part of a taxiing aircraft and the crowd is 15 m; with regard to crowd safety, the sufficient distances to taxiing jet aeroplanes and helicopters must be assessed on a case-by-case basis;
- (4) a sufficient safety distance is secured behind a running jet engine.

9.3 Crowd control and telecommunications

9.3.1 The EO shall ensure that:

- (1) a sufficient number of guards is available to control the crowd, assist in emergencies and prevent the crowd from accessing the other side of the crowd line and the aircraft stands, and that the guards are provided with comprehensive instructions on their duties in both normal operations and emergencies;
- (2) sufficient telecommunications and communication equipment are available, allowing the EO to communicate with persons responsible for ground arrangements and with rescue services in particular;
- (3) a telecommunications control centre appropriate for the event and managed by an experienced operator is established. Lines of communication shall be created with the rescue service, the FDD, and air traffic services if a separate air traffic services unit has been established for the event;
- (4) a method for making public announcements is available. In choosing the method for public announcements, the EO must take into account the following:
 - (i) the size of the event;
 - (ii) the size and general layout of the event area; and
 - (iii) the aviation content of the event.

9.3.2 The public address system must be placed so that safety-critical information and rescue service announcements can be clearly communicated to the crowd.

9.4 Insurance

9.4.1 The FDD shall ensure that the event is covered by adequate liability insurance. The insurance must be valid regardless of crowd presence, also on practise and press days and in other similar events.

9.4.2 The FDD shall ensure that a copy of the insurance certificate or other document showing the scope of the insurance is submitted to the Finnish Transport and Communications Agency before the event.

9.4.3 The FDD shall ensure that the participants' aircraft have adequate aviation liability insurance policies that also cover flying displays.

9.5 Documents

Display pilots shall ensure that the following documents are available for inspection by the Finnish Transport and Communications Agency and the FDD:

- (1) display pilot's licence with appropriate class and/or type ratings;
- (2) display pilot's log book to prove the validity of flight privileges and recent experience;
- (3) PDA or exemption;
- (4) aircraft insurance certificates;
- (5) airworthiness documents (certificate of airworthiness and airworthiness review certificate (ARC) or permit to fly or similar); and
- (6) any other documents for the pilot or aircraft as required by the Agency or the FDD.

9.6 Temporary airspace arrangements

9.6.1 If the event is organised in a location where air traffic control or AFIS services are normally provided, the FDD shall ensure sufficient communication and coordination with the air traffic services units.

9.6.2 If necessary, the FDD shall apply the Finnish Transport and Communications Agency for the establishment of a temporary restricted area for the duration of the flying display in order to secure the required airspace.

9.6.3 The FDD shall ensure that the Finnish Transport and Communications Agency or air traffic services unit receives information on the airspace requirements of the flying display in order to coordinate the use of airspace and publish the information either as AIP SUPPLEMENT or NOTAM.

9.6.4 The FDD shall ensure that the coordination with the air traffic control or AFIS unit covers the following:

- (1) duration and quality of service provided;
- (2) airspace required;
- (3) procedures followed in this airspace; and
- (4) radio frequencies and transponder codes used.

9.6.5 If air traffic control or AFIS services are provided, the FDD shall ensure that a representative of the air traffic services unit receives the necessary information about the verbal briefing arranged before the display.

9.7 Flying display safety arrangements

9.7.1 The EO is responsible for ensuring that an emergency plan is drawn up for each flying display and that the plan also meets the requirements of an emergency plan for public events laid down in section 16, subsection 2 of the Rescue Act. As regards areas intended for the public, the requirements for a safety document as specified in the Consumer Safety Act and Government Decree (1110/2011) shall also be met. In addition to the rescue authority of the well-being services county, the emergency plan must be submitted for information to the Finnish Transport and Communications Agency and to the aerodrome operator.

9.7.2 The emergency plan must contain detailed information on at least the following:

- (1) types of any potential emergencies onboard an aircraft or on the ground (e.g. aircraft emergency, bomb threat, etc.);
- (2) rescue service units included in the plan;
- (3) areas of responsibility and duties of each unit;
- (4) event area grid map, showing all rescue service points, passageways and command centres;
- (5) communications methods; and
- (6) names, duties, contact information (telephone/radio) and location of persons responsible for the operations.

9.7.3 The EO shall ensure that sufficient rescue services are available at the flying display. The number of required rescue service staff and equipment at the flying display site or adjacent areas depends on the scope and content of the event. The police, ambulance and fire brigade services must always be included in the emergency plan, but the EO may also include other rescue services they deem necessary at their discretion.

9.7.4 In determining the required rescue service level at the flying display site, the EO shall take into account the following factors:

- (a) properties of the largest aircraft taking part in the display;
- (b) ICAO Annex 14 requirements for rescue and firefighting services; and
- (c) national regulations.

9.7.5 The EO shall ensure that when aircraft do not land in or operate from the event area, the level of rescue services is adapted to the requirements of the event itself. Nonetheless, the EO shall ensure arrangements for additional resources in case of a serious accident or incident.

9.7.6 The EO shall ensure that suitable rescue equipment is available when the display site is located near water or peatland areas or in another challenging location in terms of rescue activities.

9.7.7 The general responsibility for cooperation with the rescue service lies with the EO.

- (a) The police. Provisions on notifying the police of a public event are laid down in the Assembly Act (530/1999);
- (b) Ambulance and first aid. Depending on the size of the event and the expected number of spectators, at least one ambulance and staff with sufficient training must be available at the display site during the flying display to take care of medical care and first aid; and
- (c) Rescue service. An appropriately located and equipped fire and rescue service, sufficient in relation to the size of the event, must be ready at the display site in case of an aviation accident taking place in the event area or its vicinity. Unobstructed entry and exit routes for emergency vehicles in case of an accident must be ensured together with the rescue services.

9.7.8 Depending on the size and diversity of the flying display, the EO shall:

- (a) Ensure that a designated rescue service centre is established and manned with rescue service staff, or that such staff can be immediately contacted via telecommunications. Lines of communication to the FDD, air traffic services and other necessary bodies must be arranged;
- (b) Arrange a planning meeting with representatives from all rescue service units prior to the event date to ensure that all parties are aware of the details of the emergency plan; and
- (c) Consider arranging for the entire display to be video recorded in order for the recordings to be later used in the examination of an accident or incident.

9.7.9 Smoking is only allowed in designated areas.

9.8 Reporting obligation after the display

After the event, the FDD together with the EO shall draw up a report on the course of the display for the Finnish Transport and Communications Agency. The report must contain at least the following information:

- (1) aircraft that performed in the display and any cancellations
- (2) any line infringements and subsequent measures, and prohibitions and restrictions in accordance with section 10.4.3
- (3) any incidents or occurrences, also other than those related to flight operations
- (4) suggestions for improvement and issues to note in future flying displays.

10 DISPLAY FLIGHT OPERATIONS

10.1 Distance from the crowd

10.1.1 The FDD shall ensure that the minimum distances between the display line and the crowd line presented in Table 1 are complied with.

Display speed (kts)	Type of display	
	Flypast	Aerobatics
Less than 100 kts	50 m	100 m
100–200 kts and helicopters not performing aerobatics	100 m	150 m
200–300 kts	150 m	200 m
More than 300 kts	200 m	230 m
More than 300 kts with velocity vector towards crowd		450 m

Table 1 Flypasts and aerobatics – Minimum distances

10.1.2 The display pilot shall ensure that turns and manoeuvres are always performed in a way that ensures the following:

- (1) the aircraft under no circumstances infringes the minimum distances provided in Table 1;
- (2) a sufficient safety margin is always maintained when the velocity vector of an aircraft is towards the crowd during a display;
- (3) sufficient wind component margin is maintained in relation to the crowd;
- (4) when flying in formation, the minimum distance to the crowd is calculated from the aircraft closest to the crowd line; and
- (5) factors resulting from the risk assessment required in accordance with Annex VII, point NCO.SPEC.105 of the EU Air Operations Regulation 965/2012 and Annex II, point SAO.OP.155 of the EU Sailplane Regulation 2018/1976 are taken into account.

10.1.3 Regular take-offs and landings are allowed on the available runway, provided that the distance between the runway centre line and the crowd line is at least 75 m.

10.1.4 A display pilot whose aircraft display speed requires a greater safety distance than 75 m may use the runway for take-off and landing and, after take-off, perform manoeuvres away from the crowd in order to reach the safe and suitable display line as soon as possible.

10.2 Overflying the crowd

10.2.1 Overflying the crowd areas and vehicle parking areas is not permitted apart from the following exceptions:

- (1) aircraft carrying parachutists seeking the jump line; however, not below 1,500 ft AGL; and
- (2) manned balloon; however, not below the altitudes determined in Table 3.

10.2.2 Parachutists shall avoid flying over crowd areas and vehicle parking areas at low altitude. Where this is not possible, the parachutist shall ensure that the altitude and gliding ability of the parachute are sufficient for safe flight over the crowd to the landing area.

10.2.3 The Finnish Transport and Communications Agency may, in the flying display permission, allow overflying crowd areas and vehicle parking areas at a stage when the aircraft are not performing aerobatic flying.

10.3 Meteorological minima

10.3.1 The FDD shall ensure that display flying is not allowed unless the meteorological conditions at the display site meet the requirements of Table 2 below.

	Display type		Meteorological minimum	
			Cloud base	Visibility
V/STOL aircraft, helicopter or aircraft with a stall speed below 50 kts	Flypast or 'flat' aerobatic display	Solo aircraft	500 ft *	1.5 km
		Formation	500 ft	3.0 km
	Full aerobatic display	Solo aircraft	800 ft	3.0 km
		Formation	1,000 ft	5.0 km
Other aircraft	Flypast or 'flat' aerobatic display	Solo aircraft	500 ft	5.0 km
		Formation	1,000 ft	5.0 km
	Full aerobatic display	Solo aircraft	1,000 ft	5.0 km
		Formation (piston)	1,000 ft	5.0 km
		Formation (jet)	1,500 ft	5.0 km

Table 2 Meteorological Minima

* The FDD may allow flying with a minimum cloud base of at least 250 ft AGL when the aircraft operates from the event area. Such flights at a low altitude are only allowed in the event area.

10.3.2 In considering whether the performances included in the display can be carried out, the FDD shall take into account the airspace class, aircraft type and other weather-related factors than those specified above, such as wind force and rainfall.

10.4 Minimum display altitudes

10.4.1 The Finnish Transport and Communications Agency determines the minimum display altitude and flypast altitude to be used in the display based on the FDD's risk assessment. Each display pilot must also comply with the minimum altitude specified in their PDA.

10.4.2 The requirements on minimum display altitude shall not be applied to helicopters that are hovering or manoeuvring in ground effect during the display.

10.4.3 Due to safety reasons, the FDD may prohibit a pilot from flying or require them to fly the programme fully or partially higher than the minimum altitude or further away than the minimum distance provided in the PDA.

10.4.4 The FDD shall notify the minimum display altitude to all participating pilots in both written and verbal briefings as specified in section 9.

10.5 Display lines, display areas and event area

10.5.1 In selecting the display lines and areas, the FDD shall take into account the following factors:

- (1) significant terrain features below the intended display area;

- (2) vicinity to residential, industrial and recreational areas and areas with sensitive environment;
- (3) noise caused by flight operations and areas sensitive to noise;
- (4) vicinity to other aerodromes and land and water areas used for aviation and to other events;
- (5) airspace classification;
- (6) surface of the intended landing site when aircraft take off or land at the display site;
- (7) nearby obstacles; and
- (8) accessibility, especially for rescue service vehicles.

10.5.2 The EO is responsible for planning the event area together with the FDD. The event area must be planned taking into account the safety of the crowd and of other people in immediate vicinity to the event.

10.5.3 In cooperation with the EO, the FDD shall ensure that the crowd areas and vehicle parking areas are located on the same side where possible, in order to guarantee sufficient freedom for the performing aircraft. Crowd areas and vehicle parking areas shall never be located in the display area or in the approach or take-off sector of the aerodrome. If there are scheduled or charter operations to the airport during the flying display, crowd areas or vehicle parking areas may neither be located on the runway strip, unless an exemption has been granted based on a safety analysis presented by the airport operator.

10.5.4 The FDD shall ensure that the display lines are clearly marked or can otherwise be easily observed from the air. The markings should make use of runways and other natural lines where possible. It is not necessary to mark all display lines of different speeds in the terrain, but detailed information on all display lines and appropriate distances must be provided in both written and verbal briefings.

10.5.5 The FDD shall ensure that the permitted display areas and the slants used in reaching the display line are clearly defined in both written and verbal briefings even though they do not need to be marked in the terrain.

10.5.6 The display pilot must fly their programme in accordance with the display line. The performance need not necessarily be flown in the direction of the display line, but the pilot must nonetheless make sure that they can perform their display programme without flying below the minimum distances provided in Table 1, regardless of the direction they choose.

10.6 Maximum permitted display speed

10.6.1 In a flying display, the display pilot may not exceed 600 kts or Mach 0.95 true airspeed or perform any manoeuvre that would result in unintentionally breaking the sound barrier.

10.6.2 If necessary, the FDD shall apply for an additional permission, to be attached to the flying display permission, to exceed the speed of 250 kts IAS at an altitude below 10,000 ft (FL 100).

10.7 Carriage of other persons

Apart from hot air balloon pilots, display pilots shall ensure that no other persons than the crew needed for the performance are carried on display flights. However, if the pilot deems that carrying additional persons would be beneficial and not risk display safety, they must obtain permission for that purpose from the Finnish Transport and Communications Agency.

10.8 Pyrotechnics as a part of the display

10.8.1 Pyrotechnics may only be used in flying displays with the FDD's approval, in accordance with the flight display permission and a pre-planned programme. The use of pyrotechnics must be taken into account in the risk assessment drawn up for the display permission.

10.8.2 The use of pyrotechnics on aircraft must take into account the altitude, location and wind impact so that no residue lands in the crowd area. Any falling residual pyrotechnics must be monitored so that they do not cause danger to other aircraft or property. If necessary, it must be ensured that any residue has completely burned out. The FDD shall ensure that where necessary, the runway is inspected after a performance using pyrotechnics before the next display.

11 SPECIAL AIRCRAFT CATEGORIES AND FLIGHT OPERATIONS

11.1 Manned balloons

11.1.1 The FDD shall ensure that the minimum distances between the crowd and any part of a balloon or balloon anchor point provided in Table 3 are complied with.

11.1.2 The FDD shall ensure that the area used for ballooning or the balloon take-off strip is securely separated from the crowd.

11.1.3 The pilot of a manned balloon shall ensure that a three-point tether system is used when presenting an anchored balloon.

11.1.4 The FDD shall ensure that whenever manned balloons are presented anchored or take-offs are performed in front of the crowd, these performances are held sufficiently far away from other flight operations or at a different time.

Display type	Safety distance from the crowd	Minimum height and conditions for overflight
Anchored on the ground with ropes	20 m	not defined
Take-off from the event area	20 m	overflight 75 ft, take-off 50 ft from obstacles
Arrival at the event area	50 m	overflight 300 ft, horizontal flight 50 ft from obstacles

Table 3 Manned balloon safety distances from the crowd

11.2 Unmanned aircraft

11.2.1 The FDD shall ensure that unmanned aircraft are not flown closer to the crowd line than specified in Table 4.

Unmanned aircraft	Weight of aircraft (kg)	Safety distance from the crowd
Line-controlled	all	15 m
Radio-controlled (piston/electric) or glider	less than 7 kg more than 7 kg	30 m 50 m
Radio-controlled (jet/turbine)	all	75 m

Table 4 Unmanned aircraft safety distances from the crowd

11.2.2 If necessary, the FDD or the Finnish Transport and Communications Agency may increase the distances when required by the size or other properties of unmanned aircraft. Using an unmanned aircraft or free-flight model aircraft heavier than 25 kg in a flying display is only allowed with a special permission from the Finnish Transport and Communications Agency.

11.2.3 The FDD shall ensure that unmanned aircraft performances are held sufficiently far from other flight operations or at a different time.

11.2.4 The FDD shall ensure that radio-controlled unmanned aircraft are not flown at mean wind speeds exceeding 25 kts, nor usually with a visibility less than 500 m. In terms of visibility, however, the properties of the aircraft may be considered.

11.2.5 The FDD shall ensure that the unmanned aircraft system (UAS) operator has a valid certification of registration in accordance with Article 14 of the Commission Implementing Regulation (EU) 2019/947², and if required, the aircraft has been registered and carries the appropriate markings. For state aviation, the FDD shall ensure that the UAS operator has submitted a notification to the Finnish Transport and Communications Agency in accordance with Aviation Regulation OPS M1-35.

11.2.6 The FDD shall ensure that the remote pilot meets the minimum competence requirements of Regulation (EU) 2019/947 or Aviation Regulation OPS M1-35, as applicable. The FDD shall also ensure that the remote pilot has sufficient experience for the safe completion of the display.

11.2.7 The FDD shall ensure that each unmanned aircraft used in the flying display features a function for safely regaining control of the aircraft in case of malfunction or loss of control as required by paragraph AMC1 UAS.OPEN.060(1)(d) of the guidance material to Regulation (EU) 2019/947, or that it is otherwise safe in the case of malfunction. For state aviation, it must be ensured that the requirements of paragraph 3.9 of Aviation Regulation OPS M1-35 are met.

11.3 Parachuting

The FDD shall ensure that:

- (1) no part of the landing area is located at a distance of less than 15 m from the crowd;
- (2) the landing area is securely separated from the crowd area e.g. with ropes, lines or fences;
- (3) the landing area is appropriately marked so that it can be clearly identified by the parachutist for the entire duration of the jump;
- (4) there is a continuous radio connection throughout the jump between the aircraft transporting parachutists, a supervisor on the ground and, if available, air traffic services;
- (5) no propellers, jet engines or helicopter rotors are running during parachuting at a distance below 250 metres from the selected landing area; and
- (6) the pilots of aircraft in the air or on the ground at a distance of over 250 metres (for local flights, over 1,000 metres) are continuously aware of the movement of parachutists during the jumps, and the pilots of aircraft on the ground are ready to turn off the propellers, jet engines or helicopter rotors as necessary.

² Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft (OJEU L 152, 11.6.2019, p. 45–71)

11.4 Sight-seeing flights

11.4.1 The FDD is responsible for the coordination of any sight-seeing flights taking place during the flying display.

11.4.2 The FDD shall ensure that sight-seeing flights are not carried out in the display area:

- (1) during aerobatic flying at low altitude; or
- (2) during parachuting, unless the aircraft used for sight-seeing flights remains at a distance of at least 1,000 m from the parachutists.

11.5 Displays in other than daylight conditions

When planning flying displays outside daylight hours, at least the following factors shall be considered:

- (1) difficulties in observing the horizon and aircraft attitude;
- (2) planning the display line to be clearly visible;
- (3) maintaining weather awareness and observing deteriorating weather conditions;
- (4) determining minimum flight altitudes for the display, taking into account terrain obstacles at the display site, safe emergency landing sites and the display programme;
- (5) amount of display programme practice in other than daylight conditions.

12 AEROBATIC MANOEUVRES AT DIFFERENT SKILL LEVELS

12.1 Purpose

The aerobatic manoeuvre categories specified below determine the manoeuvres that can be marked on the display pilot's PDA and that the display pilot can be authorised to perform at flying displays. The applicant for or holder of a PDA must demonstrate their skills at flying all manoeuvres of the applied category safely and adequately in a flying display.

The PDA authorises the pilot to fly manoeuvres and manoeuvre combinations that belong to the category marked on the approval or any lower category, apart from the category 'Restricted'.

12.2 Skill levels

12.2.1 Restricted

The display pilot is authorised to fly the programme or the combination of manoeuvres marked in the PDA.

12.2.2 Standard

- a. Spins – Regular one roll spins, starting and ending in normal level flight.
- b. Hammerheads – Hammerheads starting and ending in normal level flight.
- c. Loops and eights – Circle inside loops starting and ending in normal level flight, loops with roll on top, Cuban eights.
- d. Rolls – single horizontal aileron rolls and single barrel rolls, starting and ending in normal level flight.

12.2.3 Intermediate

- a. Spins – Regular spins with a maximum of two rolls, starting and ending in normal level flight.
- b. Hammerheads or tail slides – Hammerheads or tail slides starting and ending in normal level flight; with vertical rolls.
- c. Loops and eights – Half circle inside loops, reverse half Cuban eight, rectangular loops.
- d. Rolls – Slow horizontal rolls, hesitation rolls, positive horizontal snap roll. Rolls can be included in other manoeuvres.
- e. Inverted flight – Continuous inverted flight.

12.2.4 Advanced

- a. Spins – Outside spins, starting and ending in either normal or inverted flight.
- b. Hammerheads or tail slides – Hammerheads or tail slides starting and ending in inverted flight.
- c. Loops and eights – Half circle outside loops, outside loops and outside horizontal eights starting and ending in inverted flight. Diamond and octagonal loop.
- d. Rolls – Several unified rolls, several horizontal flick/snap rolls, either positive or negative, turns with rolls.

12.2.5 Unlimited

The 'Unlimited' category places no restrictions on the manoeuvres performed. When applying for the 'Unlimited' category, the applicant's previous PDA category must be at least 'Advanced'. The assessment criteria include the manoeuvres and combinations in the 'Advanced' category and the following:

- a. Gyroscopic manoeuvres
- b. Flat spins, positive and negative
- c. Knife edge spinning, positive spin from inverted flight or negative spin from level flight (cross over spin)
- d. Accelerated snap roll.

13 EXEMPTIONS

The Finnish Transport and Communications Agency may, on application, grant individual exemptions from the requirements of this Regulation for special reasons. The exemption application must describe how the applicant wishes to deviate from the requirements and how the exceptional arrangement guarantees a comparable safety level to the required procedure. The application must identify the risks related to the exceptional arrangement and the means by which those risks will be managed.

14 TRANSITIONAL PROVISION

The PDAs issued in accordance with the previous Regulation OPS M1-2 of 16 April 1997 remain valid until their expiry date, after which a new authorisation is issued in accordance with this Regulation.

Jarkko Saarimäki
Director General

Pietari Pentinsaari
Deputy Director General