

CIVIL AVIATION AGENCY

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In accordance with Article 65(6) of the Aviation Act ("Official Gazette of the Republic of North Macedonia" No. 14/24, 224/24, 3/25 and 144/25), and in accordance with Article 3 of the Multilateral Agreement between the European Community and its Member States, the Republic of Albania, Bosnia and Herzegovina, the Republic of Bulgaria, the Republic of Croatia, the Republic of Macedonia, the Republic of Iceland, the Republic of Montenegro, the Kingdom of Norway, Romania, the Republic of Serbia and the United Nations Interim Administration Mission in Kosovo on the establishment of a European Common Aviation Area ratified with the Act of Ratification of Multilateral Agreement ("Official Gazette of the Republic of Macedonia No. 27/07, 98/09 and "Official Gazette of the Republic of North Macedonia No. 259/19) the Director General of the Civil Aviation Agency enacted

REGULATION

ON THE MANNER, PROCEDURES AND OTHER REQUIREMENTS FOR CIVIL AIRCRAFT SAFE TAKE-OFF AND LANDING

1. General provisions

Article 1

This Regulation prescribes the manner, procedures and other requirements for civil aircraft safe take-off and landing.

Article 2

The terms and abbreviations used in this Regulation shall have the following meanings:

- mountainous terrain means an area above 1850 meters above sea level;
- non-standard instrument flight procedure means a flight procedure which, for any safety reason, deviates from the requirements/standards established in the documents referred to in Articles 3 and 4 of this Regulation;
- AIP means Aeronautical Information Publication;
- SID means standard instrument departure procedure;
- STAR means standard instrument arrival procedure;
- IAF means initial approach fix;

- IF means intermediate fix;
- FAF means final approach fix;
- MAPt means missed approach point;
- IAP means instrument approach procedure;
- GNSS means global navigation satellite system;
- RNAV means area navigation;
- RNP means required navigation performance, and
- significant change to an existing instrument flight procedure means a change in the characteristics of an existing radio navigation aid that guarantees the safety of the instrument flight procedure for operational use, the introduction of a new technology, as well as a change in the flight path by more than $\pm 10^\circ$, or if the altitude of a specific point (IAF, IF, FAF, MAPt, OCA/H) changes by more than $\pm 150\text{ft}$.

2. Process of development, documentation, validation, approval and publication of instrument flight procedures

Article 3

- (1) Instrument flight procedures for civil aircraft shall be developed in accordance with Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011 (Annexes from I to XII), amended by EU Regulations 2020/469, 2020/1177, 2021/665, 2021/1338, 2022/938, 2023/203, 2023/1771, 2024/403, 2024/1111 and 2025/343 accepted and directly applied and published on the Civil Aviation Agency`s website and Procedures for Air Navigation Services-Aircraft Operations - PANS-OPS) (hereinafter: ICAO Doc. 8168 OPS/611) that is accepted and directly applied.
- (2) The requirements for airspace usage and the operating procedures for Performance-Based Navigation (PBN) are laid down in the Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018 laying down airspace usage requirements and operating procedures concerning performance-based navigation amended by EU Regulation 2025/520 (hereinafter: EU Regulation 2018/1048), accepted and directly applied and published on the Civil Aviation Agency`s website.
- (3) For the application of EU Regulation 2017/373 and its amendments referred to in paragraph (1) of this Article, the Acceptable Means of Compliance (AMC) and Guidance Material (GM) prescribed by Decision 2017/001/R and Decision 2015/014/R of the

Executive Director of EASA shall be used, including their amendments relating to those EU Regulations, which are published on the EASA website and are accepted and directly applied.

Article 4

In the development of standard instrument flight procedures for civil aircraft, in addition to ICAO Doc 8168 OPS/611 and EU Regulation 2018/1048 referred to in Article 3 of this Regulation, the following documents, which are accepted and directly applied, shall also be used:

- a) ICAO Doc 9371, Template Manual for Holding, Reversal and Racetrack Procedures;
- b) ICAO Doc 9274, Collision Risk Model (CRM) User's Manual;
- c) ICAO Doc 9368, Instrument Flight Procedures Construction Manual;
- d) ICAO Doc 9674, World Geodetic System — 1984 (WGS-84) Manual;
- e) ICAO Doc 9906, Quality Assurance Manual for Flight Procedure Design, Volumes 1, 2, 3, 5, 6 (hereinafter referred to as: ICAO Doc 9906);
- f) ICAO Doc 9365, All Weather Operations Manual;
- g) ICAO Doc 9613, Performance-Based Navigation (PBN) Manual, Volumes 1 and 2;
- h) ICAO Doc 9573, RNAV Operations;
- i) ICAO Doc 8697, Aeronautical Chart Manual;
- j) ICAO Doc 9905, Required Navigation Performance Authorization Required (RNP AR) Procedure Design Manual;
- k) ICAO Annex 2, Rules of the Air;
- l) ICAO Annex 4, Aeronautical Charts;
- m) ICAO Annex 5, Units of Measurement to be Used in Air and Ground Operations;
- n) ICAO Annex 6, Operation of Aircraft;
- o) ICAO Annex 10, Aeronautical Telecommunications, Volume I (Radio Navigation Aids);
- p) ICAO Annex 11, Air Traffic Services;
- q) ICAO Annex 14, Volume I, Aerodromes;
- r) ICAO Annex 14, Volume II, Heliports;
- s) ICAO Annex 15, Aeronautical Information Services; and
- t) ICAO Annex 19, Safety Management.

Article 5

- (1) The flight procedure design service provider shall develop standard instrument flight procedures for civil aircraft at airports intended for civil air traffic, based on the documents referred to in Articles 3 and 4 of this Regulation.
- (2) If a specific standard instrument flight procedure cannot be applied, the flight procedure design service provider shall, at the request of the ATM/ANS service provider, airport users, or the airport operator, develop a non-standard instrument flight procedure for civil aircraft with the appropriate application of the documents referred to in Articles 3 and 4 of this Regulation.

Article 6

- (1) The process of design, documentation, and validation of flight procedures shall consist of data collection, design of instrument flight procedures, validation, documentation, and approval thereof by the Agency.
- (2) The process of designing instrument flight procedures shall begin with the collection and evaluation of input parameters, and shall end with ground and airborne data checks or flight simulator checks (if necessary), validation, verification, approval by the Agency, as well as preparation of the documentation for the publication of the instrument procedures.
- (3) During the design of instrument procedures, the flight procedure design service provider shall ensure a quality assurance system in order to guarantee that each instrument procedure is safe for use. The quality assurance system shall include continuous review, check, coordination, verification, and validation of key indicators and shall be in compliance with ICAO Doc. 8168 OPS/611 and ICAO Doc. 9906.

Article 7

- (1) If there is a need to develop a new instrument flight procedure, a significant change to an existing instrument flight procedure, or a non-standard instrument flight procedure, the aircraft operator, the airport operator, or the ATM/ANS service provider shall submit a request to the flight procedure design service provider.
- (2) If a request is submitted pursuant to paragraph (1) of this Article, the flight procedure design service provider shall conduct a safety assessment.
- (3) A new instrument flight procedure or a significant change to an existing instrument flight procedure may be developed by the flight procedure design service provider only if the safety assessment referred to in paragraph (2) of this Article demonstrates that it will not adversely affect the acceptable level of safety.

- (4) The safety assessment referred to in paragraph (2) of this Article shall take into account relevant safety-significant factors, including, but not limited to:
1. types of aircraft and their characteristics and performance, including navigation capabilities and navigation performance;
 2. air traffic density and patterns;
 3. airspace complexity, ATS routes, as well as airspace structure and division;
 4. airport characteristics;
 5. type and capabilities of ground-based navigation systems; and
 6. significant local or regional data (e.g., obstacles, infrastructure, operational factors, etc.).
- (5) The safety assessment for each new instrument flight procedure or significant change to an existing instrument flight procedure shall be documented and retained for the entire period during which the instrument procedure is in use.

Article 8

During the preparation and laying down of an instrument flight procedure, the flight procedure designer shall take into account the data and information established in accordance with the Regulation on provision of ATM/ANS services.

Article 9

- (1) In cases where a civil aircraft instrument flight procedure or a part thereof enters mountainous terrain, the Minimum Obstacle Clearance (MOC) shall be determined in accordance with the values established in ICAO Doc. 8168 OPS/611, provided that the elevation does not exceed 1850 meters.
- (2) In case where a civil aircraft instrument flight procedure or a part thereof enters mountainous terrain, and the elevation is above 1850 meters, the Minimum Obstacle Clearance (MOC) shall be increased as follows:
1. STAR by:
 - 50% when the elevation is between 1851 and 2350 meters, and
 - 100% when the elevation is above 2351 meters;
 2. SID and IAP by:
 - 25% when the elevation is between 1851 and 2350 meters, and
 - 50% when the elevation is above 2351 meters;

3. En-Route by:
 - 50% when the elevation is between 900 and 1500 meters, and
 - 100% when the elevation is above 1500 meters;
4. All other instrument flight procedures (Minimum Sector Altitudes (MSA), visual maneuvering/circling area, reversal procedure, holding procedure, ATC Surveillance minimum altitude, Area Minimum Altitude (AMA), and others) by 100% when the elevation is above 1851 meters.

Article 10

- (1) In case of low temperatures that may affect the values provided by the altimeter instruments, the pilot-in-command shall make a correction to the OCA/H (Obstacle Clearance Altitude/Height), and specifically to the data regarding:
 - obstacle clearance altitude/height for the initial and intermediate segments of the instrument flight procedures;
 - decision altitude/height (DA/H) or minimum descent altitude/height (MDA/H); and
 - subsequent missed approach altitudes/heights.
- (2) In case of vectoring an instrument flight off-airway, the air traffic controller shall make a correction for the low temperature effect in accordance with ICAO Doc. 8168 OPS/611, Part 3, in order to maintain the prescribed obstacle clearance altitude until the aircraft reaches a point from which the pilot-in-command resumes own navigation.

Article 11

- (1) During the design of instrument flight procedures, the principles of the following techniques shall be taken into account:
 1. Continuous Climb Operations (CCO) and
 2. Continuous Descent Operations (CDO).
- (2) During the design of instrument flight procedures, the flight procedure design service provider shall, where possible, coordinate the procedures with the requirements of the ATM/ANS service provider, airport users, or the airport operator and apply the following principles:
 - defining departure and arrival routes over uninhabited or sparsely populated areas, as well as avoiding sensitive zones (such as chemical, gas, or other plants) where possible; and

- for each new instrument flight procedure, conducting an aircraft noise impact analysis in accordance with the standards and recommended practices contained in ICAO Annex 16 — Environmental Protection, using an appropriate computer software or other methods.
- (3) The establishment of noise abatement operational procedures, if deemed necessary, shall be initiated and determined by the airport operator, based on complaints from the local community and/or an aviation study conducted for that purpose.
 - (4) The operational procedures established pursuant to paragraph (3) of this Article shall be published through the Aeronautical Information Services.

Article 12

- (1) In order to ensure quality assurance in the process of instrument flight procedure design, validation of the procedures shall be performed prior to their publication, which shall include a ground check and, if necessary, an airborne validation or a flight simulator validation. Airborne validation is mandatory for each new instrument flight procedure or for a significant change to an existing instrument flight procedure.
- (2) The purpose of each ground or airborne check is to verify all obstacles and navigation data, as well as to assess the flyability of the procedure (flyability of the instrument flight procedure).
- (3) For the purpose of verifying the navigation database, instrument flight procedures based on GNSS may be coded and published as temporary, and the instrument flight procedure chart shall contain the warning: "This procedure is available for testing purposes only".
- (4) If an instrument procedure flyability check is performed, compliance checklists provided in the Attachment, which forms an integral part of this Regulation, shall be maintained for it.
- (5) If the ground check covers all obstacles, navigation data, and other relevant data that would otherwise be verified during an airborne check, it may be determined through a consultation process between the ATM/ANS service provider and the Agency that a flyability check is not required, and the applicant referred to in Article 7, paragraph (1) of this Regulation shall be notified accordingly.

Article 13

- (1) Following the design and validation of an instrument flight procedure in accordance with Articles 5, 6, 7, 8, 9, 10, 11, and 12 of this Regulation, the flight procedure design service provider shall submit a request to the Agency accompanied by documentation for the instrument flight procedure for the purpose of its approval, except in the case of minor, simple, and routine changes to the instrument flight procedure when an approval is not

required, but only a timely notification of the publication of the change needs to be sent in accordance with the approved change management procedure (e.g., publication of new SIDs resulting from the shortening of already published SIDs, inclusion of segments already published in other STARs into existing STAR routes with altitudes equal to or higher than those published, change of the chart identification for instrument approach procedures from RNAV to RNP, removal of segments from existing SID/STAR routes, design and documentation of flight procedures including maintenance and periodic review activities, updating of obstacles, frequencies, coordinates, tracks, distances, notes, navigation warnings, alignment with the aeronautical data catalogue, etc.).

- (2) For the purpose of conducting the analysis required for the approval of an instrument flight procedure, the flight procedure design service provider shall, at the request of the Agency, provide access to and/or submit:
- a review of obstacle data, as well as the date of the last update and a complete overview of obstacle data (if available);
 - data on aerodrome and navigation aids;
 - a diagram of each segment and holding area, displaying the dominant obstacles;
 - procedure and minimum altitude for each segment;
 - a track indicator;
 - a chart describing the procedure;
 - trajectory breaks described textually or by abbreviations, where applicable;
 - supporting position data, such as coordinates, tracks, distances;
 - a description of the method and options taken into consideration;
 - sufficient details of significant calculations and creation data that will enable the proposal to be accepted;
 - evidence of the independent verification conducted for the aeronautical navigation procedure;
 - evidence of a compliance check conducted for the aeronautical navigation procedure and the chart against reference documents; and
 - other relevant information taken into consideration in support of the request for approval/acceptance (compliance checklist for the flyability validation of the instrument flight procedure).
- (3) The flight procedure design service provider shall submit the documentation referred to in paragraph (2) of this Article to the Agency in electronic format with a checksum generated by one of the following algorithms: MD5, SHA-256, or SHA-512.

- (4) For the purpose of conducting an instrument procedure flyability check (RNAV/RNP), the procedure must be previously temporarily approved so that it can be coded prior to the flyability check.
- (5) For the permanent decommissioning of an existing instrument flight procedure, a request for approval shall be submitted to the Agency, accompanied by a justification of the reasons for the request.
- (6) For the temporary suspension of an instrument flight procedure, the interested party shall not seek approval, but shall only notify the Agency in a manner customary in aviation.
- (7) The provisions of the Law on General Administrative Procedure shall apply subsidiarily to the procedures for the approval/decommissioning of an instrument flight procedure, unless otherwise established by this Regulation.
- (8) By way of derogation to paragraph (7) of this Article, in the procedures provided for by this Regulation, the parties may submit evidence of compliance with the prescribed requirements in the English language as well.
- (9) By way of derogation to paragraph (7) of this Article, administrative procedures for the approval of a new instrument flight procedure, a significant change to an existing instrument flight procedure, or a non-standard instrument flight procedure shall be completed within the shortest possible timeframe, and no later than within two months from the date of submission of the complete documentation for the respective request, of which the Agency shall notify the applicant.
- (10) All documentation for the approval of instrument flight procedures referred to in this Article shall be permanently retained by the flight procedure design service provider and the Agency.

Article 14

The approved standard instrument flight procedures for civil aircraft shall be published in the AIP by the ATM/ANS service provider.

3. Manner, Procedures, and Requirements for Safe Take-off and Landing during VFR Flights

Article 15

- (1) The manner, procedures, and requirements for safe take-off and landing during VFR flights shall be established by the aerodrome operator and shall, as a minimum, include:
 - aerodrome zone;
 - runway alignment;
 - aerodrome elevation;

- at least two entry/exit points within the aerodrome traffic zone;
 - display of the aerodrome traffic pattern for powered and glider aviation;
 - pilot training zones;
 - parachute drop zones;
 - relevant obstacles that could affect safety during take-off and landing, during the construction of the traffic pattern, and within the pilot training zones; and
 - topographical features of significance for VFR flights at the aerodrome.
- (2) The headings and tracks referred to in paragraph (1) of this Article shall be expressed in relation to magnetic north, determined by measurement or by using the World Magnetic Model High Resolution (WMMHR) for the relevant period.
- (3) The manner, procedures, and requirements for safe take-off and landing during VFR flights referred to in paragraph (1) of this Article may be published by the aerodrome operator in accordance with Appendix 2, Part 2 of the Regulation on Aerodromes and Obstacles.

Article 16

- (1) For the manner, procedures, and requirements for safe take-off and landing during VFR flights referred to in Article 15 of this Regulation, the aerodrome operator shall obtain an opinion from the ATM/ANS service provider.
- (2) The aerodrome operator shall submit the manner, procedures, and requirements for safe take-off and landing during VFR flights, along with the opinion referred to in paragraph (1) of this Article, to the Agency for approval.
- (3) For any change to the manner, procedures, and requirements for safe take-off and landing during VFR flights referred to in Article 15 of this Regulation, the aerodrome operator shall proceed in accordance with paragraphs (1) and (2) of this Article.
- (4) The provisions of Article 13, paragraphs (7), (8), and (9) of this Regulation shall apply accordingly to the approval procedure for the manner, procedures, and requirements for safe take-off and landing during VFR flights.

Article 17

- (1) The manner, procedures, and requirements for safe take-off and landing during VFR flights shall be published in the Aerodrome Manual prepared by the aerodrome operator. The aerodrome operator may also publish the manner, procedures, and requirements for safe take-off and landing during VFR flights in accordance with the guidance material on VFR charts developed by the Agency.

(2) The manner, procedures, and requirements for safe take-off and landing during VFR flights may also be published on the website of the aerodrome operator, in which case the aerodrome operator shall be responsible for data integrity.

4. Transitional and Final Provisions

Article 18

- (1) The provision of point 2, paragraph (2) Article 11 of this Regulation shall apply as of 1 January 2028.
- (2) The provisions of Articles 15, 16, and 17 of this Regulation shall apply as of 1 July 2026.

Article 19

On the day of entry into force of this Regulation, the Regulation on procedures and minimum requirements for safe take-off and landing of civil aircraft ("Official Gazette of the Republic of Macedonia" No. 294/21) shall cease to be valid.

Article 20

This Regulation shall enter into force on the eight day following its publication in the "Official Gazette of the Republic of North Macedonia".

No. 10-938/3

24 December 2025

Skopje

Director General

Civil Aviation Agency

Dragi Stojanoski, mp.

INSTRUMENT PROCEDURE FLYABILITY CHECK STANDARD INSTRUMENT DEPARTURE (SID) and STANDARD INSTRUMENT ARRIVAL (STAR)			
LOCATION			ICAO IDENTIFICATION
NAME OF PROCEDURE			
TYPE AIRCRAFT		PILOT	
METHOD (CHECK ONE)			
<input type="checkbox"/> LIVE	<input type="checkbox"/> SIMULATOR	<input type="checkbox"/> TABLE TOP REVIEW ONLY	
REASON for FLYABILITY CHECK <input type="checkbox"/> new procedure <input type="checkbox"/> safety assessment due to an accident/incident <input type="checkbox"/> revised procedure <input type="checkbox"/> safety assessment due to reports/feedback <input type="checkbox"/> other, specify: _____			
PANS-OPS SPECIALIST COMMENTS/CONCERNS			
SAT	UNSAT		REMARKS
		AIRCRAFT MANEUVERING	
		ALTITUDE RESTRICTIONS	
		NAVAID RECEPTION	
		COCKPIT WORKLOAD	
		OBSTACLE CLEARANCE	
		EASY TO UNDERSTAND	
FLYABILITY CHECK PILOT COMMENTS:			
I CONSIDER THE ABOVE SPECIFIED INSTRUMENT PROCEDURE AS FLYABLE IAW THIS CHECKLIST			
SIGNATURE			DATE
PRINTED/TYPED NAME AND RANK			DUTY PHONE
			UNIT

INSTRUMENT PROCEDURE FLYABILITY CHECK INSTRUMENT APPROACH PROCEDURE (IAP)							
LOCATION				DATE CHECK FLOWN			
NAME OF PROCEDURE				TYPE AIRCRAFT			
METHOD (CHECK ONE)							
<input type="checkbox"/> LIVE		<input type="checkbox"/> SIMULATOR			<input type="checkbox"/> TABLE TOP REVIEW ONLY		
SEGMENTS NOT FLOWN OR CHECKED SHALL BE ANNOTATED «NF» IN THE REMARKS COLUMN. ITEMS THAT ARE NOT APPLICABLE SHOULD BE MARKED «NA». EACH MUST BE MARKED OR ANNOTATED.							
REASON for FLYABILITY CHECK							
<input type="checkbox"/> new procedure		<input type="checkbox"/> safety assessment due to an accident/incident					
<input type="checkbox"/> revised procedure		<input type="checkbox"/> safety assessment due to reports/feedback					
<input type="checkbox"/> other, specify: _____							
1. INITIAL APPROACH FIX (IAF) HOLDING PATTERN. PANS-OPS SPECIALIST AND PILOT COMMENTS/CONCERNS (CONTINUE ON SEPARATE SHEET OF PAPER):							
INITIAL APPROACH FIX (IAF) HOLDING PATTERN	SAT	UNSAT	REMARKS	INITIAL APPROACH FIX (IAF) HOLDING PATTERN	SAT	UNSAT	REMARKS
A. ENTRY				D. MANEUVERING			
B. LEG LENGTH				E. SPEED RESTRICTIONS			
C. NAVAID RECEPTION				F. ATC COMMUNICATIONS			
2. IAF TO FINAL APPROACH FIX (FAF). PANS-OPS SPECIALIST AND PILOT COMMENTS/CONCERNS (CONTINUE ON SEPARATE SHEET OF PAPER):							
IAF TO FINAL APPROACH FIX (FAF)	SAT	UNSAT	REMARKS	IAF TO FINAL APPROACH FIX (FAF)	SAT	UNSAT	REMARKS
A. CHARTED COURSE/ARCS/ RADIALS, ETC.							
B. ALTITUDES							
C. ALTITUDES AIRCRAFT MANEUVERING ALTITUDES							
3. FAF TO MISSED APPROACH POINT (MAP). PANS-OPS SPECIALIST AND PILOT COMMENTS/CONCERNS (CONTINUE ON SEPARATE SHEET OF PAPER):							
FAF TO MISSED APPROACH POINT (MAP)	SAT	UNSAT	REMARKS				
A. OBSTACLE CLEARANCE							
B. FINAL APPROACH COUSE ALIGNMENT							
C. AIRCRAFT MANEUVERING							
D. VISUAL DESCENT POINT (VDP)							
E. MAP LOCATION							
F. COCKPIT WORKLOAD							
G. DESCENT GRADIENT							
H. NAVAID RECEPTION							
I. NAVAID RECEPTION							
J. LANDING MINIMUMS							
K. ATC COMMUNICATIONS							

4. MISSED APPROACH: PANS-OPS SPECIALIST AND PILOT COMMENTS/CONCERNS (CONTINUE ON SEPARATE SHEET OF PAPER):

MISSED APPROACH	SAT	UNSAT	REMARKS	MISSED APPROACH	SAT	UNSAT	REMARKS
A. UNDERSTANDABLE				E. COCKPIT WORKLOAD			
B. AIRCRAFT MANEUVERING				F. ATC COMMUNICATIONS			
C. OBSTACLE CLEARANCE				G. CLIMB GRADIENT			
D. NAVAID RECEPTION							

5. CIRCLING AREAS. PANS-OPS SPECIALIST AND PILOT COMMENTS/CONCERNS (CONTINUE ON SEPARATE SHEET OF PAPER):

CIRCLING AREAS	SAT	UNSAT	REMARKS
A. AIRCRAFT MANEUVERING			
B. OBSTACLE CLEARANCE			
C. ABSENCE OF OPTICAL ILLUSIONS			
D. ATC COMMUNICATIONS			

6. ADDITIONAL COMMENTS:

CONSIDER THE ABOVE SPECIFIED INSTRUMENT PROCEDURE AS FLYABLE AND SATISFACTORY.

SIGNATURE		DATE
PRINTED/TYPED NAME AND RANK	DUTY PHONE	UNIT