AMENDMENT 176

TO THE

INTERNATIONAL STANDARDS

AND RECOMMENDED PRACTICES

PERSONNEL LICENSING

ANNEX 1

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

The amendment to Annex 1 contained in this document was adopted by the Council of ICAO on **6 March 2020**. Such parts of this amendment as have not been disapproved by more than half of the total number of Contracting States on or before **20 July 2020** will become effective on that date and will become applicable on **5 November 2020** as specified in the Resolution of Adoption. (State letter AN 12/1.1.24-20/19 refers.)

MARCH 2020

INTERNATIONAL CIVIL AVIATION ORGANIZATION

AMENDMENT 176 TO THE INTERNATIONAL STANDARDS

AND RECOMMENDED PRACTICES

ANNEX 1 — *PERSONNEL LICENSING*

RESOLUTION OF ADOPTION

The Council

Acting in accordance with the Convention on International Civil Aviation, and particularly with theprovisions of Articles 37, 54 and 90 thereof,

1. Hereby adopts on 6 March 2020 Amendment 176 to the International Standards and Recommended Practices contained in the document entitled *International Standards and Recommended Practices, Personnel Licensing* which for convenience is designated Annex 1 to the Convention;

2. Prescribes 20 July 2020 as the date upon which the said amendment shall become effective, except for any part thereof in respect of which a majority of the Contracting States have registered their disapprovalwith the Council before that date;

3. Resolves that the said amendment or such parts thereof as have become effective shall become applicable on 5 November 2020;

4. Requests the Secretary General:

a) to notify each Contracting State immediately of the above action and immediately after 20 July 2020 of those parts of the amendment which have become effective;

b) to request each Contracting State:

1) to notify the Organization (in accordance with the obligation imposed by Article 38 of the Convention) of the differences that will exist on 5 November 2020 between its national regulations or practices and the provisions of the Standards in the Annex as hereby amended, such notification to be made before 5 October 2020 and thereafter to notify the Organization of any further differences that arise;

2) to notify the Organization before 5 October 2020 of the date or dates by which it will have complied with the provisions of the Standards in the Annex as hereby amended;

c) to invite each Contracting State to notify additionally any differences between its own practices and those established by the Recommended Practices, following the procedure specified in subparagraph b) above with respect to differences from Standards.

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NOTES ON THE PRESENTATION OF THE AMENDMENT TO ANNEX 1

The text of the amendment is arranged to show deleted text with a line through it and new texthighlighted with grey shading, as shown below:

~~Text to be deleted is shown with a line through it.~~	text to be deleted
New text to be inserted is highlighted with grey shading.	new text to be inserted
~~Text to be deleted is shown with a line through it~~ followedby the replacement text which is highlighted with grey shading.	new text to replace existing text

TEXT OF AMENDMENT 176

TO THE

INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES

PERSONNEL LICENSING

ANNEX 1
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

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CHAPTER 1. DEFINITIONS AND GENERAL RULES CONCERNING LICENCES

1.1.Definitions

Editorial note.— Definitions with an asterisk (*) originate from Amendment 5 to the PANS-TRG.

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***Competency.** A ~~combination of skills, knowledge and attitudes required to perform a task to the prescribed standard~~ dimension of human performance that is used to reliably predict successful performance on the job. A competency is manifested and observed through behaviours that mobilize the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions.

~~***Competency element.*** An action that constitutes a task that has a triggering event and a terminating event~~that clearly defines its limits, and an observable outcome.

~~***Competency unit.*** A discrete function consisting of a number of competency elements.~~

Competency-based training and assessment. Training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

Competency standard. A level of performance that is defined as acceptable when assessing whether or notcompetency has been achieved.

Conditions. Anything that may qualify a specific environment in which performance will be demonstrated.

. . .

Error management. The process of detecting errors and responding to them~~errors~~ with countermeasures thatreduce or eliminate the consequences of errors and mitigate the probability of further errors or undesiredstates.

Note.— See ~~Attachment C to~~ Chapter ~~16~~ of Part II, Section I of the Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868) and Circular 314* — Threat and Error Management (TEM) in Air Traffic Control *for a description of undesired states.*

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ICAO competency framework. A competency framework, developed by ICAO, is a selected group of competencies for a given aviation discipline. Each competency has an associated description and observable behaviours.

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Monitoring. A cognitive process to compare an actual to an expected state.

Note.– Monitoring is embedded in the competencies for a given role within an aviation discipline, whichserve as countermeasures in the threat and error management model. It requires knowledge, skills and attitudes to create a mental model and to take appropriate action when deviations are recognized.

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****Observable behaviour (OB)***. A single role-related behaviour that can be observed and may or may not bemeasurable.

****Performance criteria***. ~~Simple, evaluative statements on the required outcome of the competency element and a description of the criteria used to judge whether the required level of performance has been achieved~~ Statements used to assess whether the required levels of performance have been achieved for a competency. A performance criterion consists of an observable behaviour, condition(s) and a competency standard.

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Pilot flying (PF). The pilot whose primary task is to control and manage the flight path. The secondary tasksof the PF are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crewmembers.

Pilot monitoring (PM). The pilot whose primary task is to monitor the flight path and its management by thePF. The secondary tasks of the PM are to perform non–flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crewmembers.

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Threat management. The process of detecting threats and responding to ~~threats~~ them with countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired states.

Note.— See ~~Attachment C to~~ Chapter ~~16~~ of Part II, Section I of the Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868) and Circular 314 —* Threat and Error Management (TEM) in Air Traffic Control *for a description of undesired states.*

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1.2 General rules concerning licences

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1.2.2.3 *Rendering a licence valid pursuant to a formal agreement between Contracting States under common licensing regulations*

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1.2.2.3.2.1 Until 31 December 2022, States that meet the requirements in 1.2.2.3.1 and have issued

licences prior to 9 November 2017 may use other effective means, carried on board the aircraft or accessible,to indicate that the licences issued by the State are rendered valid in accordance with the agreement in 1.2.2.3.1

Note.— Guidance on the format for the endorsement is contained in Attachment ~~C~~ B. The guidance also includes how to make use of an attachment to the licence, as part of the endorsement, for information that may change over time, i.e. the ICAO registration number of the agreement and the list of all States that are party to the agreement.

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1.2.8 Approved training and approved training organization

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1.2.8.4 Until 2 November 2022, competency-based approved training for aircraft maintenance personnel shall be conducted within an approved training organization.

Note.— ~~A comprehensive training scheme for the aircraft maintenance (technician/engineer/mechanic) licence, including the various levels of competency, is contained in the~~ Procedures for Air Navigation ~~Services — Training (Doc 9868, PANS-TRG).~~ The Manual on Training of Aircraft Maintenance Personnel *(Doc 10098) contains guidance material on the design and development of an aircraft maintenance personnel training programme.*

1.2.8.4 As of 3 November 2022, competency-based approved training for aircraft and RPASmaintenance personnel shall be conducted within an approved training organization.

Note 1.— A comprehensive training scheme for the aircraft maintenance (technician/engineer/mechanic) licence, including the various levels of competency, is contained in the Procedures for Air Navigation Services — Training *(Doc 9868, PANS-TRG).*

Note 2.— The Manual on Training of Aircraft Maintenance Personnel *(Doc 10098) contains guidancematerial on the design and development of an aircraft maintenance personnel training programme.*

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1.2.8.6 Competency-based approved training for flight operations officer/flight dispatcher personnelshall be conducted within an approved training organization.

Note.— Procedures supporting the development of competency-based training and assessment for aeroplane flight crew, air traffic controllers, aircraft maintenance personnel, remote flight crew and flight operations officers/flight dispatchers, including ICAO competency frameworks, are contained in the Procedures for Air Navigation Services — Training *(Doc 9868, PANS-TRG).*

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CHAPTER 2. LICENCES AND RATINGS FOR PILOTS*

2.1 General rules concerning pilot licences and ratings

2.1.1 General licensing specifications

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2.1.1.4 *Transitional measures related to the powered-lift category*

Until 5 March ~~2022~~ 2025, the Licensing Authority may endorse a type rating for aircraft of the powered-lift category on an aeroplane or helicopter pilot licence. The endorsement of the rating on the licence shall indicate that the aircraft is part of the powered-lift category. The training for the type rating in the powered- lift category shall be completed during a course of approved training, shall take into account the previous experience of the applicant in an aeroplane or a helicopter as appropriate and incorporate all relevant aspectsof operating an aircraft of the powered-lift category.

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* As of 3 November 2022, Chapter 2 will be titled *Chapter 2. Licences and Ratings for Pilots and Remote Pilots.*6

Editorial note.— Amend the Notes under 2.3.1.2 l); 2.3.1.3 a); 2.3.3.2 a);2.3.4.2.1 a); 2.3.5.2 a); 2.3.6.2 a); 2.4.1.2 r); 2.4.1.3 a); 2.4.3.2.1 a); 2.4.4.2 a); 2.4.5.2 a); 2.4.6.2 a); 2.5.1.3.1 a); 2.6.1.2.1 v); 2.6.1.3.1.2 a); 2.7.1.2.1 a); 2.9.1.4 a); 2.10.1.4 a); 2.13.1.2 bb); 3.2.1.4 a); 3.3.1.4.1 a); 4.5.2.3; and 4.6.1.4 d) to read:

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868), Part II, Section I in Chapter 6, and in the* Human Factors Training Manual *(Doc 9683).*

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2.4 Commercial pilot licence

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2.4.3 Specific requirements for the issue of the aeroplane category rating

2.4.3.1 Experience

2.4.3.1.1 The applicant shall have completed not less than 200 hours of flight time, or 150 hours if completed during a course of approved training, as a pilot of aeroplanes. The Licensing Authority shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be. Credit for such experience shallbe limited to a maximum of ~~10~~ 20 hours.

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2.5 Multi-crew pilot licence (MPL) appropriate to the aeroplane category

Note.— The holder of a multi-crew pilot licence is authorized by 2.5.2.1 to act as co-pilot of an aeroplane required to be operated with a co-pilot. Such holder will be eligible to obtain an airline transport pilot licence appropriate to the aeroplane category, after fulfilling the requirements for that licence, to be restricted to multi-crew operations unless the requirements of 2.5.2.1 a), 2.5.2.2 and 2.5.2.3, as appropriate,are met (2.6.2.2 refers).

2.5.1 General requirements for the issue of the licence

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2.5.1.2 Competencies

The applicant shall satisfactorily demonstrate the competencies identified in an adapted competency modelto perform as a co-pilot of a turbine-powered air transport aeroplane certificated for operation with a minimum crew of at least two pilots. The adapted competency model shall be approved by the Licensing Authority, using as a basis the ICAO aeroplane pilot competency framework contained in the *Procedures forAir Navigation Services — Training* (PANS-TRG, Doc 9868).

Note 1. — Knowledge, skills and attitudes underpin these competencies as described in the Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868). The knowledge and skills described in 2.5.1.2.1 and 2.5.1.2.2 provide minimum requirements for the issuance of the multi-crew pilot licence.*

Note 2.— The competencies of the approved adapted competency model provide individual and team countermeasures for the application of threat and error management. Guidance on threat and error management is contained in the Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868).*

2.5.1.2.1 Knowledge

2.5.1.2.1.1The applicant shall at least have met the requirements specified in 2.6.1.2 for the airline transport pilot licence appropriate to the aeroplane category in an approved training course as well as the additional requirements underpinning the approved adapted competency model.

2.5.1.2.1.2 Training in the underpinning knowledge requirements shall be fully integrated with the training of the underpinning skill requirements

2.5.1.~~3~~2.2 *Skills*

~~2.5.1.3.1~~ The applicant shall have demonstrated the underpinning skills required for ~~fulfilling all the competency units specified in Appendix 3~~ the competencies of the approved adapted competency model as pilot flying and pilot ~~not flying~~ monitoring, to the level required to perform as a co-pilot of turbine-powered aeroplanes certificated for operation with a minimum crew of at least two pilots under VFR and IFR~~, and to:~~.

~~a) recognize and manage threats and errors;~~

~~*Note.— Guidance material on the application of threat and error management is* on Services Training *(PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the* Human Factors Training Manual *(Doc 9683).*~~

~~b) smoothly and accurately, manually control the aeroplane within its limitations at all times, such thatthe successful outcome of a procedure or manoeuvre is assured;~~

~~c) operate the aeroplane in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;~~

~~d) perform, in an accurate manner, normal, abnormal and emergency procedures in all phases of flight;and~~

~~e) communicate effectively with other flight crew members and demonstrate the ability to effectively perform procedures for crew incapacitation, crew coordination, including allocation of pilot tasks, crew cooperation, adherence to standard operating procedures (SOPs) and use of checklists.~~

~~2.5.1.3.2 Progress in acquiring the skills specified in 2.5.1.3.1 shall be continuously assessed.~~

2.5.1.2.3 **Recommendation.—** *The competency standards to be achieved and the associatedperformance criteria for the multi-crew pilot licence applicant should be publicly available.*

2.5.1.~~4~~3 *Medical fitness*

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2.5.3 Experience

2.5.3.1 The applicant shall have completed ~~in~~ an approved training course not less than 240 hours which includes actual and simulated flight as pilot flying and pilot ~~not flying of actual and simulated flight~~ monitoring.

2.5.3.3 In addition to meeting the provisions of 2.5.3.2, the applicant shall have gained, in a turbinepowered aeroplane certificated for operation with a minimum crew of at least two pilots, or in a flight simulation training device approved for that purpose by the Licensing Authority in accordance with Appendix 3, paragraph ~~4~~ 3, the experience necessary to achieve the ~~advanced level of competency defined in Appendix 3~~ final competency standard of the approved adapted competency model.

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2.5.4 Flight instruction

2.5.4.2 The applicant shall have received dual flight instruction in order to achieve the final competency standard in all the ~~competency units specified in Appendix 3~~ competencies of the approved adapted competency model, ~~to the level required~~ for the issue of the multi-crew pilot licence~~, to include the competency units required to pilot under instrument flight rules~~.

Note.— The competencies of the approved adapted competency model provide individual and team countermeasures for the application of threat and error management. Guidance on threat and error management is contained in the Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868).*

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2.6 Airline transport pilot licence

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2.6.3 Specific requirements for the issue of the aeroplane category rating

2.6.3.1 Experience

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2.6.3.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the Licensing Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.6.3.1.1 can be reduced accordingly.

Note.— The extent to which flight time experience may be reduced by the Licensing Authority can be dependent on the applicant having demonstrated the final competency standard of an approved competency-based type rating training programme in the aeroplane category.

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2.6.4 Specific requirements for the issue of the helicopter category rating

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2.6.4.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the Licensing Authority shall determine whether such experience is acceptable and, if so, the extent to which the flighttime requirements of 2.6.4.1.1 can be reduced accordingly.

Note.— The extent to which flight time experience may be reduced by the Licensing Authority can be dependent on the applicant having demonstrated the final competency standard of an approved competency-based type rating training programme in the helicopter category.

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2.6.5 Specific requirements for the issue of the powered-lift category rating

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2.6.5.1.3 **Recommendation.—** *When the applicant has flight time as a pilot of aircraft in other categories, the Licensing Authority should determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.6.5.1.1 could be reduced accordingly.*

Note.— The extent to which flight time experience may be reduced by the Licensing Authority can be dependent on the applicant having demonstrated the final competency standard of an approved competency-based type rating training programme in the powered-lift category.

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2.7 Instrument rating

2.7.1 Requirements for the issue of the rating
for aeroplane, airship, helicopter and powered-lift categories

2.7.1.1 *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to theholder of an instrument rating, in at least the following subjects:

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Aircraft general knowledge for the aircraft category being sought

b) use, limitation and serviceability of avionics, electronic devices and instruments necessary for the control and navigation of aircraft under IFR and in instrument meteorological conditions; use and limitations of ~~autopilot~~ automation;

. . .

Navigation for the aircraft category being sought

j) practical air navigation using ~~radio~~ navigation ~~aids~~ systems;

k) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landingphases of flight; identification of ~~radio~~ navigation ~~aids~~ sources;

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CHAPTER 4. LICENCES AND RATINGS FOR PERSONNEL OTHER THAN FLIGHT CREW MEMBERS

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4.2 Aircraft maintenance (technician/engineer/mechanic)

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4.2.1 Requirements for the issue of the licence

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4.2.1.4 *Training*

Recommendation.— *The applicant should have completed a course of training appropriate to the privileges to be granted.*

Note.— ~~The~~ Training Manual *~~(Doc 7192), Part D-1, contains guidance material on a trainingcourse for applicants for an aircraft maintenance licence~~ The* Manual on Training of Aircraft Maintenance Personnel *(Doc 10098) contains guidance material on the design and development of a training programme for aircraft maintenance personnel.*

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4.4 Air traffic controller licence

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4.4.1 Requirements for the issue of the licence

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4.4.1.3 *Experience*

4.4.1.3.1 The applicant shall have completed an approved training course and demonstrated the required competence, having accomplished not less than three months of satisfactory service engaged in the actual control of air traffic under the supervision of an ~~appropriately rated air traffic controller~~ air traffic control (ATC) on-the-job training instructor (OJTI). The experience requirements specified for air traffic controller ratings in 4.5 may be credited as part of the experience specified in this paragraph.

4.4.1.3.2 An air traffic controller acting as an air traffic control on-the-job training instructor shall hold anappropriate rating and be qualified as an air traffic control on-the-job training instructor.

Note.— The Procedures for Air Navigation Services — Training *(Doc 9868) contains guidance on the qualification of air traffic control on-the-job training instructors and on competency-based training and assessment for air traffic controllers. The* Manual on Air Traffic Controller Competency-based Training and Assessment *and the* Manual on Air Traffic Control On-the-Job Training Instructor Competency-based Training and Assessment *(Doc 10056, Volumes I and II) provide additional guidance to support stakeholders in the successful implementation of competency-based training and assessment for air traffic controllers.*

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4.5 Air traffic controller ratings

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4.5.2 Requirements for air traffic controller ratings

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4.5.2.2 Experience

4.5.2.2.1 The applicant shall have:

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b) ~~provided, satisfactorily~~ demonstrated the required competence while providing, under the supervision of an ~~appropriately rated air traffic controller~~ air traffic control (ATC) on-the-job training instructor (OJTI), one or more of the following:

1) *aerodrome control rating:* an aerodrome control service, for a period of not less than 90 hoursor one month, whichever is greater, at the unit for which the rating is sought;

2) *approach control procedural, approach control surveillance, area control procedural or area control surveillance rating:* the control service for which the rating is sought, for a period of not less than 180 hours or three months, whichever is greater, at the unit for which the rating is sought; and

3) *approach precision radar control rating:* not less than 200 precision approaches of which not more than 100 shall have been carried out on a radar simulator approved for that purpose by the Licensing Authority. Not less than 50 of those precision approaches shall have been carried out at the unit and on the equipment for which the rating is sought; and

c) ~~if the privileges of the approach control surveillance rating include surveillance radar approach duties, the experience shall include not less than 25 plan position indicator approaches on the surveillance equipment of the type in use at the unit for which the rating is sought and under the supervision of an appropriately rated air traffic controller air traffic control (ATC) on-the-jobtraining instructor (OJTI).~~

4.5.2.2.2 ~~The experience specified in 4.5.2.2.1 b) shall have been completed within the 6-month period immediately preceding application.~~ The application for a rating shall be made within six. months from the completion of experience specified in 4.5.2.2.1.b) . .

4.6 Flight operations officer/flight dispatcher licence

4.6.1 Requirements for the issue of the licence

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4.6.1.2 Knowledge

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Air law

a) rules and regulations relevant for operational control and to the holder of a flight operations officer licence; appropriate air traffic services practices and procedures;

Aircraft general knowledge

. . .

d) minimum equipment list and configuration deviation list;

. . .

Flight performance calculation, planning procedures and loading

. . .

g) take off performance including field length, climb and obstacle criteria and limitation;

h) cruise performance including minimum altitudes, decompression/engine out/gear down scenarioplanning;

i) landing performance including approach climb and field length criteria and limitations;

Editorial note.— Renumber subsequent bullets accordingly.

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Human performance

~~i~~ l) human performance relevant to ~~dispatch~~ operational control duties, including principles of threat and error management;

. . .

Operational procedures

~~m~~ p) use of aeronautical documentation and standard operating procedures;

. . .

4.4.1.3 Experience

4.6.1.3.1 The applicant shall have gained the following experience:

. . .

2) a meteorologist in an organization ~~dispatching~~ providing operational control to aircraft in air transportation; or

. . .

4.4.1.4 Skill

The applicant shall have demonstrated the ability to:

a) identify and to retrieve aeronautical data and other information relevant for the analysis of operational situations and risks;

b) identify and evaluate the risk factors and the possible consequences for flight operations;

c) identify and evaluate actions considering risk, the effect on flight safety and regularity of the operation;

d) determine an appropriate course of action based on the responsibilities and policies described in the operation manuals;

e) apply appropriate standard and non-standard procedures from the operations manual for the initiation, planning, continuation, diversion or termination of flights in the interest of safety of the aircraft and regularity and efficiency of the operation;

~~a~~f) make an accurate and operationally acceptable weather analysis ~~from a series of daily weather maps and weather reports~~; provide an operationally valid briefing on weather conditions ~~prevailing in the general neighbourhood~~ of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;

g) identify and apply operational limitations and minimums in relation to the weather, aircraft statusand appropriate navigation procedures;

Editorial note.— Renumber subsequent bullets accordingly.

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APPENDIX 2. APPROVED TRAINING ORGANIZATION

(Chapter 1, 1.2.8.2 refers)

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3. Training programmes

3.1. A Licensing Authority may approve a training programme for a private pilot licence, commercial pilot licence, an instrument rating or an aircraft maintenance (technician/engineer/mechanic) licence that allows an alternative means of compliance with the experience requirements established by Annex 1, provided that the approved training organization demonstrates to the satisfaction of the Licensing Authority that the training provides a level of competency at least equivalent to that provided by the minimum experience requirements for personnel not receiving such approved training.

Note 1.— A comprehensive training scheme for the aircraft maintenance ~~(technician/engineer/mechanic) licence, including the various levels of competency, is~~ Procedures supporting the development of competency-based training and assessment for aeroplane pilots and aircraft maintenance personnel, including ICAO competency frameworks, are contained in the Procedures for Air Navigation Services — Training *(Doc 9868, PANS-TRG).*

Note 2.— The Manual on Training of Aircraft Maintenance Personnel *(Doc 10098) contains guidance material on the design and development of an aircraft maintenance personnel training programme.*

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APPENDIX 3. REQUIREMENTS FOR THE ISSUE OF THEMULTI-CREW PILOT LICENCE — AEROPLANE

(Chapter 2, Section 2.5, refers)

1. Training

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1.2 During the training, the applicant shall have acquired the knowledge, skills and attitudes ~~requiredas the~~ underpinning ~~attributes~~ the competencies required for performing as a co-pilot of a turbine-powered air transport aeroplane certificated for operation with a minimum crew of at least two pilots, under VFR and IFR, day and night flying.

2. Assessment level

The applicant for the multi-crew pilot licence in the aeroplane category shall have ~~satisfactorily demonstrated performance in all the nine competency units specified in 3, at the advanced level of competency as defined in Attachment B~~ achieved the final competency standard of the approved adapted competency model.

Note.— The training scheme for the multi-crew pilot licence in the aeroplane category, ~~including the various levels of competency~~ the ICAO aeroplane pilot competency framework and the methodology toadapt this framework for the multi-crew pilot licence are contained in the Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868).*

3. ~~Competency units~~

~~The nine competency units that an applicant has to demonstrate in accordance with Chapter 2, 2.5.1.3, are asfollows:~~

~~1) apply threat and error management (TEM) principles;~~

~~2) perform aeroplane ground operations;~~

~~3) perform take-off;~~

~~4) perform climb;~~

~~5) perform cruise;~~

~~6) perform descent;~~

~~7) perform approach;~~

~~8) perform landing; and~~

~~9) perform after-landing and aeroplane post-flight operations.~~

~~*Note 1.— Competency units are broken down into their constituent elements, for which specific performance criteria have been defined. Competency elements and performance criteria are contained inthe* Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868).*~~

Note 2.— The application of threat and error management principles is a specific competency unit that~~is to be integrated with each of the other competency units for training and testing purposes.~~

4 3. Simulated flight

Note.— The Manual of Criteria for the Qualification of Flight Simulation Training Devices *(Doc 9625),* Volume I — Aeroplanes*, provides guidance on the qualification of flight simulation training devices used intraining programmes. ~~The manual defines seven examples of flight simulation training devices based on the specific training being conducted, including four examples for the four phases of multi-crew pilot licence training defined in Attachment B of Annex 1. The numbering system used~~ Types I to VII described in Doc 9625 ~~is different from the numbering used in 4.2~~ are used below.*

~~4~~ 3.1 The flight simulation training devices used to gain the experience specified in Chapter 2, 2.5.3.3,shall have been approved by the Licensing Authority.

~~4~~ 3.2 Flight simulation training devices suitable for each multi-crew pilot licence training phase shallbe categorized as follows:

Note 1.— The training scheme for the multi-crew pilot licence describes four phases for the training (core flying skills, basic, intermediate and advanced) and is contained in the Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868).*

Note 2.— The European Aviation Safety Agency (EASA) device levels and the United States Federal Aviation Administration (FAA) device levels specified below are considered based on the closest qualified device that provides the required level of fidelity to support the training phase. It is not the intent here to establish any equivalency between the various ICAO, FAA and EASA devices. Furthermore, in each phase a mix of devices that meet the minimum fidelity level may be used.

Note 3.— In each of the four phases, other devices which meet the fidelity requirements may also beused to meet the training requirement.

a) ~~Type I~~ Core flying skills phase. E-training and part tasking devices approved by the LicensingAuthority that have the following characteristics:

- involve accessories beyond those normally associated with desktop computers, such as functional replicas of a throttle quadrant, a sidestick controller, or an FMS keypad; ~~and~~
- involve psychomotor activity with appropriate application of force and timing of responses.; and

- otherwise meet, at a minimum, the following qualification:
    - Type I or Type III of Doc 9625

Note 1.— Type II of Doc 9625 may be used for certain basic instrument flight

trainingtasks.

Note 2.— The EASA flight and navigation procedures trainer I (FNPT I) and the FAA flight training device FTD Level 4 meet the minimum qualifications of a Type I, II and III device.

b) ~~Type II~~ Basic phase. A flight simulation training device that represents a generic turbine-powered aeroplane~~.~~ and has the following characteristics:

- is equipped with a daylight visual system; and

- otherwise meets, at a minimum, the following qualification:
    - Type IV or Type V of Doc 9625

Note.— The EASA flight and navigation procedures trainer II-multi-crew cooperation (FNPT II-MCC) and the FAA flight training device FTD Level 5 meet the minimum qualifications of a Type IV device.

~~*Note.— This requirement can be met by a flight simulation training device equipped with a daylight visual system and otherwise meeting, at a minimum, the specifications equivalent to FAA FTD Level 5, or JAA FNPT II, MCC.*~~

c) ~~Type III~~ Intermediate phase. A flight simulation training device that represents a multi-engined turbine-powered aeroplane certificated for a crew of two pilots ~~with enhanced daylight visual system and equipped with an autopilot.~~ and has the following characteristics:

- is equipped with an enhanced daylight visual system;

- is equipped with an autopilot; and

- otherwise meets, at a minimum, the following qualification:
    - Type VI of Doc 9625

Note 1.— The EASA full flight simulator FFS Level B and the FAA full flight simulator FFS Level B meet the minimum qualifications of a Type VI device.

Note 2.— During the intermediate phase, some or all training tasks could be conducted in a device used in the advanced phase, if suitable for the training task. Guidance to assess the suitability of the device for a training task is contained in Doc 9625, Part I, Appendix C.

~~*Note.— This requirement can be met by a flight simulation training device equipped with a daylight visual system and otherwise meeting, at a minimum, the specifications equivalent to a LevelB simulator as defined in JAR STD 1A, as amended; and in FAA AC 120-40B, as amended, including Alternate Means of Compliance (AMOC), as permitted in AC 120-40B. (Some previously evaluated Level A full flight simulators that have been approved for training and checking required manoeuvres may be used.)*~~

d) ~~Type IV~~ Advanced phase. ~~Fully equivalent to a Level D flight simulator or to a Level C flightsimulator with an enhanced daylight visual system.~~ A flight simulation training device that represents a multi-engined turbine-powered aeroplane certificated for a crew of two pilots and has the following characteristics:

- is equipped with an enhanced daylight visual system;
- is equipped with an autopilot; and
- otherwise meets, at a minimum, the following qualification:
  - Type VII of Doc 9625

Note 1.— The EASA full flight simulator FFS Level C or D and the FAA full flightsimulator FFS Level C or D meet the minimum qualifications of a Type VII device.

Note 2.— ~~This requirement can be met by a flight simulation training device meeting, at a minimum, the specifications equivalent to a Level C and Level D simulator as defined in JAR STD 1A, as amended; and in FAA AC 120-40B, as amended, including Alternate Means of Compliance (AMOC), as permitted in AC 120-40B~~ During the advanced phase, some training tasks could be conducted in a device used in the intermediate phase, if this device represents the aeroplane used in the advanced phase and is suitable for the training task. Guidance to assess the suitability of the device for a training task is contained in Doc 9625, Part I, Appendix C.

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Editorial note.— Delete Attachment B in toto.

~~**ATTACHMENT B**~~

~~**MULTI-CREW PILOT LICENCE — AEROPLANELEVELS OF COMPETENCY**~~

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ATTACHMENT ~~C~~ B

ENDORSEMENT FOR AUTOMATICALLY VALIDATED LICENCES

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— END —