

II

(Non-legislative acts)

REGULATIONS

COMMISSION REGULATION (EU) 2016/539

of 6 April 2016

amending Regulation (EU) No 1178/2011 as regards pilot training, testing and periodic checking for performance-based navigation

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC ⁽¹⁾, and in particular Article 7(6) thereof,

Whereas:

- (1) Commission Regulation (EU) No 1178/2011 ⁽²⁾ establishes conditions for pilots involved in the operation of certain aircraft, as well as flight simulation training devices, persons and organisations involved in the training, testing and checking of those pilots.
- (2) It is necessary to include in that Regulation additional requirements for pilot training, testing and periodic checking for pilots who fly in accordance with performance-based navigation ('PBN') procedures and therefore need PBN privileges endorsed to their instrument rating ('IR'). The PBN endorsement should not create additional administrative burden for the competent authority.
- (3) Pilots, holders of an IR, who have obtained on the basis of the applicable requirements of national law or otherwise theoretical knowledge and practical skills in PBN operations, prior to the date of application of this Regulation, should be deemed to have fulfilled the additional requirements, where they can demonstrate to the satisfaction of the competent authority that the knowledge and skills thus obtained are equivalent to those obtained through the courses and trainings required under this Regulation. The competent authorities should base their decisions on the equivalence of such knowledge and skills on objective information and criteria.
- (4) Not all pilots, especially in the general aviation, fly in accordance with PBN procedures as, for example, their aircraft or the local aerodrome may lack the appropriate certified equipment for that purpose. Therefore, at present those pilots may not need additional training and checking related to PBN. Considering the rate of deployment of PBN equipment and procedures throughout the Union, this Regulation should provide for a reasonable period of time, after which the additional requirements for pilot training, testing and periodic checking for PBN will become applicable for those pilots.

⁽¹⁾ OJ L 79, 13.3.2008, p. 1.

⁽²⁾ Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 311, 25.11.2011, p. 1).

- (5) The period during which Member States may decide not to apply the provisions of Regulation (EU) No 1178/2011 in their territory to pilots holding a licence and associated medical certificate issued by a third country involved in the non-commercial operation of certain aircraft should be extended, because of the ongoing negotiations of the Union with certain third countries aimed at facilitating the conversion of such licences and medical certificates. It should be clarified that, where a Member State takes or has taken such a decision, it should publish that decision in an appropriate manner which allows all parties concerned to take note of it and ensures that the requirements of transparency and legal certainty are fulfilled.
- (6) Additional requirements concerning the privileges of flight test pilots should also be included in Regulation (EU) No 1178/2011, in order to allow those pilots to operate an aircraft for certain flights without complying with the requirement to hold the respective class or type rating.
- (7) Regulation (EU) No 1178/2011 stipulates that the training course for multi-pilot licences ('MPL') shall only be delivered by an approved training organisation that is part of an air transport operator. In addition, that Regulation stipulates that, unless the holder of an MPL has completed the conversion course of the same operator, he cannot exercise the privileges of the MPL. There are cases where, due to the fault of the operator, some MPL holders cannot complete that operator's conversion course and are consequently not able to work neither for that operator nor for another operator. The restriction on exercising MPL privileges elsewhere puts those MPL holders at a disadvantage without it being justified by safety reasons. Pilots who change operator are required to complete the new operator's conversion course despite the fact that they have taken a conversion course on the previous operator. Moreover, any operator's conversion course must take full account of the level of experience of the pilots joining that operator. It is therefore necessary to remove that restriction. MPL requirements are thus also aligned with the ICAO standards.
- (8) Regulation (EU) No 1178/2011 should therefore be amended accordingly.
- (9) The measures provided for in this Regulation are based on the opinion ⁽¹⁾ issued by the European Aviation Safety Agency in accordance with Article 17(2)(b) and Article 19(1) of Regulation (EC) No 216/2008.
- (10) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 65 of Regulation (EC) No 216/2008,

HAS ADOPTED THIS REGULATION:

Article 1

Commission Regulation (EU) No 1178/2011 is amended as follows:

- (1) the following Article 4a is inserted:

'Article 4a

Performance-based navigation instrument rating privileges

1. Pilots may only fly in accordance with performance-based navigation ("PBN") procedures after they have been granted PBN privileges as an endorsement to their instrument rating ("IR").
2. A pilot shall be granted PBN privileges where he or she fulfils all of the following requirements:
 - (a) the pilot has successfully completed a course of theoretical knowledge including PBN, in accordance with FCL.615 of Annex I (Part-FCL);
 - (b) the pilot has successfully completed flying training including PBN, in accordance with FCL.615 of Annex I (Part-FCL);
 - (c) the pilot has successfully completed either a skill test in accordance with Appendix 7 to Annex I (Part-FCL) or a skill test or a proficiency check in accordance with Appendix 9 of Annex I (Part-FCL).

⁽¹⁾ European Aviation Safety Agency Opinion No 03/2015 of 31.3.2015 for a Commission Regulation on revision of operational approval criteria for Performance Based Navigation (PBN).

3. The requirements of paragraph 2(a) and (b) shall be deemed to have been fulfilled where the competent authority considers that the competence acquired, either through training or from familiarity with PBN operations, is equivalent to the competence acquired through the courses referred to in paragraph 2(a) and (b) and the pilot demonstrates such competence to the satisfaction of the examiner at the proficiency check or skill test referred to in paragraph 2(c).

4. A record of the successful demonstration of competency in PBN shall, upon completion of the skill test or the proficiency check referred to in paragraph 2(c), be entered in the pilot's logbook or equivalent record and signed by the examiner who conducted the test or check.

5. IR pilots without PBN privileges may only fly on routes and approaches that do not require PBN privileges and no PBN items shall be required for the renewal of their IR, until 25 August 2020; after that date, PBN privileges shall be required for every IR.;

(2) in Article 10a, the following paragraph 5 is added:

'5. Pilot training organisations shall ensure that the IR training course they offer include training for PBN privileges compliant with the requirements of Annex I (Part-FCL) by 25 August 2020 at the latest.;

(3) paragraph 4 of Article 12 is replaced by the following:

'4. By way of derogation from paragraph 1, Member States may decide not to apply the provisions of this Regulation until 8 April 2017 to pilots holding a licence and associated medical certificate issued by a third country involved in the non-commercial operation of aircraft as specified in Article 4(1)(b) or (c) of Regulation (EC) No 216/2008. Member States shall make those decisions publicly available.;

(4) Annexes I and VII are amended in accordance with the Annex to this Regulation.

Article 2

This Regulation shall enter into force on the day of its publication in the *Official Journal of the European Union*.

It shall apply from 8 April 2016.

However, points 1, 2 and 4 of Article 1 shall apply from 25 August 2018, with the exception of point 1(g) of the Annex, which shall apply from 8 April 2016.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 6 April 2016.

For the Commission
The President
Jean-Claude JUNCKER

ANNEX

Annexes I and VII to Regulation (EU) No 1178/2011 are amended as follows:

(1) Annex I is amended as follows:

(a) the following definitions are inserted in FCL.010:

“Angular operation” means an instrument approach operation in which the maximum tolerable error/deviation from the planned track is expressed in terms of deflection of the needles on the Course Deviation Indicator (CDI) or equivalent display in the cockpit.

“Linear operation” means an instrument approach operation in which the maximum tolerable error/deviation from the planned track is expressed in units of length, for instance nautical miles, for cross-track lateral deviation.

“LNAV” means Lateral Navigation.

“LPV” means Localiser Performance with Vertical Guidance.

“Performance-Based Navigation (PBN)” means area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

“RNP APCH” means a PBN specification used for instrument approach operations.

“RNP APCH operation down to LNAV minima” means a 2D instrument approach operation for which the lateral guidance is based on GNSS positioning.

“RNP APCH operation down to LNAV/VNAV minima” means a 3D instrument approach operation for which the lateral guidance is based on GNSS positioning and the vertical guidance is provided either by the Baro VNAV function or by the GNSS positioning including SBAS.

“RNP APCH operation down to LPV minima” means a 3D instrument approach operation for which both lateral and vertical guidance are based on GNSS positioning including SBAS.

“RNP AR APCH” means a navigation specification used for instrument approach operations requiring a specific approval.

“Three-dimensional (3D) instrument approach operation” means an instrument approach operation using both lateral and vertical navigation guidance.

“Two-dimensional (2D) instrument approach operation” means an instrument approach operation using lateral navigation guidance only.

“VNAV” means Vertical Navigation.;

(b) FCL.600.IR is replaced by the following:

‘Except as provided in FCL.825, operations under IFR on an aeroplane, helicopter, airship or powered-lift aircraft shall only be conducted by holders of:

(a) a PPL, CPL, MPL and ATPL, and

(b) except when undergoing skill tests, proficiency checks or when receiving dual instruction, an IR with privileges appropriate to the applicable airspace requirements and to the category of aircraft.;

(c) point (a) of FCL.605.IR is replaced by the following:

‘(a) The privileges of a holder of an IR are to fly aircraft under IFR, including PBN operations, with a minimum decision height of no less than 200 feet (60 m);

(d) point (a) of FCL.700 is replaced by the following:

‘(a) Holders of a pilot licence shall not act in any capacity as pilots of an aircraft unless they have a valid and appropriate class or type rating, except in any of the following cases:

- (i) for LAPL, SPL and BPL;
- (ii) when undergoing skill tests, or proficiency checks for renewal of class or type ratings;
- (iii) when receiving flight instruction;
- (iv) when they hold a flight test rating issued in accordance with FCL.820.;

(e) point (c) of FCL.700 is deleted;

(f) in point (c) of FCL.820, point (3) is replaced by the following:

‘(3) conduct flights without a type or class rating as defined in Subpart H, except that the flight test rating shall not be used for commercial air transport operations.’;

(g) point 2 of Appendix 5 is replaced by the following:

‘2. Approval for an MPL training course shall only be given to an ATO that is part of a commercial air transport operator certificated in accordance with Part-ORO or having a specific arrangement with such an operator.’;

(h) Appendix 7 is amended as follows:

(i) point 1 is replaced by the following:

‘1. An applicant for an IR shall have received instruction on the same class or type of aircraft to be used in the test which shall be appropriately equipped for the training and testing purposes.’;

(ii) point 11 is replaced by the following:

‘11. The following limits shall apply, corrected to make allowance for turbulent conditions and the handling qualities and performance of the aircraft used:

Height

Generally	± 100 feet
Starting a go-around at decision height/altitude	+ 50 feet/- 0 feet
Minimum descent height/MAP/altitude	+ 50 feet/- 0 feet

Tracking

On radio aids	± 5°
For angular deviations	Half scale deflection, azimuth and glide path (e.g. LPV, ILS, MLS, GLS)
2D (LNAV) and 3D (LNAV/VNAV) “linear” lateral deviations	cross-track error/deviation shall normally be limited to ± ½ the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of 1 time the RNP value are allowable.
3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV)	not more than – 75 feet below the vertical profile at any time, and not more than + 75 feet above the vertical profile at or below 1 000 feet above aerodrome level.

Heading

all engines operating	± 5°
with simulated engine failure	± 10°

Speed

all engines operating	± 5 knots
with simulated engine failure	+ 10 knots/- 5 knots,

CONTENT OF THE TEST

Aeroplanes

SECTION 1 — PRE-FLIGHT OPERATIONS AND DEPARTURE	
Use of checklist, airmanship, anti-icing/de-icing procedures, etc., apply in all sections	
a	Use of flight manual (or equivalent) especially a/c performance calculation, mass and balance
b	Use of Air Traffic Services document, weather document
c	Preparation of ATC flight plan, IFR flight plan/log
d	Identification of the required nav aids for departure, arrival and approach procedures
e	Pre-flight inspection
f	Weather Minima
g	Taxiing
h	PBN departure (if applicable): — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the departure chart.
i	Pre-take-off briefing, Take-off
j (°)	Transition to instrument flight
k (°)	Instrument departure procedures, including PBN departures, and altimeter setting
l (°)	ATC liaison — compliance, R/T procedures
SECTION 2 — GENERAL HANDLING (°)	
a	Control of the aeroplane by reference solely to instruments, including: level flight at various speeds, trim
b	Climbing and descending turns with sustained Rate 1 turn
c	Recoveries from unusual attitudes, including sustained 45° bank turns and steep descending turns

d (*)	Recovery from approach to stall in level flight, climbing/descending turns and in landing configuration — only applicable to aeroplanes
e	Limited panel: stabilised climb or descent, level turns at Rate 1 onto given headings, recovery from unusual attitudes — only applicable to aeroplanes
SECTION 3 — EN-ROUTE IFR PROCEDURES (*)	
a	Tracking, including interception, e.g. NDB, VOR, or track between waypoints
b	Use of navigation system and radio aids
c	Level flight, control of heading, altitude and airspeed, power setting, trim technique
d	Altimeter settings
e	Timing and revision of ETAs (en-route hold, if required)
f	Monitoring of flight progress, flight log, fuel usage, systems' management
g	Ice protection procedures, simulated if necessary
h	ATC liaison — compliance, R/T procedures
SECTION 3a — ARRIVAL PROCEDURES	
a	Setting and checking of navigational aids, if applicable
b	Arrival procedures, altimeter checks
c	Altitude and speed constraints, if applicable
d	PBN arrival (if applicable): — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the arrival chart.
SECTION 4 (*) — 3D OPERATIONS (**)	
a	Setting and checking of navigational aids Check Vertical Path angle For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks, including identification of facilities
c (*)	Holding procedure

d	Compliance with published approach procedure
e	Approach timing
f	Altitude, speed heading control (stabilised approach)
g (*)	Go-around action
h (*)	Missed approach procedure/landing
i	ATC liaison — compliance, R/T procedures

SECTION 5 (°) — 2D OPERATIONS (**)

a	Setting and checking of navigational aids For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks, including identification of facilities
c (*)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude/Distance to MAPT, speed, heading control (stabilised approach), Stop Down Fixes (SDF(s)), if applicable
g (*)	Go-around action
h (*)	Missed approach procedure/landing
i	ATC liaison — compliance, R/T procedures

SECTION 6 — FLIGHT WITH ONE ENGINE INOPERATIVE (multi-engine aeroplanes only) (°)

a	Simulated engine failure after take-off or on go-around
b	Approach, go-around and procedural missed approach with one engine inoperative
c	Approach and landing with one engine inoperative
d	ATC liaison — compliance, R/T procedures

(°) Must be performed by sole reference to instruments.

(*) May be performed in an FFS, FTD 2/3 or FNPT II.

(†) May be performed in either Section 5 or Section 6.

(**) To establish or maintain PBN privileges one approach in either Section 4 or Section 5 shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.

Helicopters

SECTION 1 — DEPARTURE	
Use of checklist, airmanship, anti-icing/de-icing procedures, etc., apply in all sections	
a	Use of flight manual (or equivalent) especially aircraft performance calculation; mass and balance
b	Use of Air Traffic Services document, weather document
c	Preparation of ATC flight plan, IFR flight plan/log
d	Identification of the required nav aids for departure, arrival and approach procedures
e	Pre-flight inspection
f	Weather minima
g	Taxiing/Air taxi in compliance with ATC or instructions of instructor
h	PBN departure (if applicable): — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the departure chart.
i	Pre-take-off briefing, procedures and checks
j	Transition to instrument flight
k	Instrument departure procedures, including PBN procedures
SECTION 2 — GENERAL HANDLING	
a	Control of the helicopter by reference solely to instruments, including:
b	Climbing and descending turns with sustained Rate 1 turn
c	Recoveries from unusual attitudes, including sustained 30° bank turns and steep descending turns
SECTION 3 — EN-ROUTE IFR PROCEDURES	
a	Tracking, including interception, e.g. NDB, VOR, RNAV
b	Use of radio aids
c	Level flight, control of heading, altitude and airspeed, power setting
d	Altimeter settings
e	Timing and revision of ETAs

f	Monitoring of flight progress, flight log, fuel usage, systems management
g	Ice protection procedures, simulated if necessary and if applicable
h	ATC liaison — compliance, R/T procedures
SECTION 3a — ARRIVAL PROCEDURES	
a	Setting and checking of navigational aids, if applicable
b	Arrival procedures, altimeter checks
c	Altitude and speed constraints, if applicable
d	PBN arrival (if applicable) — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the arrival chart.
SECTION 4 — 3D OPERATIONS (*)	
a	Setting and checking of navigational aids Check Vertical Path angle For RNP APCH: (a) Check that the correct procedure has been loaded in the navigation system; and (b) Cross-check between the navigation system display and the approach chart.
b	Approach and landing briefing, including descent/approach/landing checks
c (*)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude, speed, heading control (stabilised approach)
g (*)	Go-around action
h (*)	Missed approach procedure/landing
i	ATC liaison — compliance, R/T procedures
SECTION 5 — 2D OPERATIONS (*)	
a	Setting and checking of navigational aids For RNP APCH: — Check that the correct procedure has been loaded in the navigation system; and — Cross-check between the navigation system display and the approach chart.

b	Approach and landing briefing, including descent/approach/landing checks and identification of facilities
c (*)	Holding procedure
d	Compliance with published approach procedure
e	Approach timing
f	Altitude, speed, heading control (stabilised approach)
g (*)	Go-around action
h (*)	Missed approach procedure (*)/landing
i	ATC liaison — compliance, R/T procedures
SECTION 6 — ABNORMAL AND EMERGENCY PROCEDURES	
This section may be combined with sections 1 through 5. The test shall have regard to control of the helicopter, identification of the failed engine, immediate actions (touch drills), follow-up actions and checks and flying accuracy, in the following situations:	
a	Simulated engine failure after take-off and on/during approach (**) (at a safe altitude unless carried out in an FFS or FNPT II/III, FTD 2,3)
b	Failure of stability augmentation devices/hydraulic system (if applicable)
c	Limited panel
d	Autorotation and recovery to a pre-set altitude
e	3D operations manually without flight director (***) 3D operations manually with flight director (***)
(†) To establish or maintain PBN privileges one approach in either Section 4 or Section 5 shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD (*) To be performed in Section 4 or Section 5. (**) Multi-engine helicopter only. (***) Only one item to be tested.	

(i) Appendix 8 is amended as follows:

(i) the footnote to the table in Section A is replaced by the following:

‘(*) Provided that within the preceding 12 months the applicant has flown at least three IFR departures and approaches exercising PBN privileges, including one RNP APCH approach on an SP class or type of aeroplane in SP operations, or, for multi-engine, other than HP complex aeroplanes, the applicant has passed section 6 of the skill test for SP, other than HP complex aeroplanes flown solely by reference to instruments in SP operations.’

(ii) the footnote to the table in Section B is replaced by the following:

‘(*) Provided that within the preceding 12 months at least three IFR departures and approaches exercising PBN privileges, including one RNP APCH approach (could be a Point in Space (PinS) approach), have been performed on a SP type of helicopter in SP operations.’

(j) Appendix 9 is amended as follows:

(i) point 4 in Section B is replaced by the following:

‘4. The following limits shall apply corrected to make allowance for turbulent conditions and the handling qualities and performance of the aeroplane used:

Height

Generally	± 100 feet
Starting a go-around at decision height	+ 50 feet/- 0 feet
Minimum descent height/altitude	+ 50 feet/- 0 feet

Tracking

on radio aids	± 5°
For “angular” deviations	half scale deflection, azimuth and glide path (e.g. LPV, ILS, MLS, GLS).
2D (LNAV) and 3D (LNAV/VNAV) “linear” deviations	Cross track error/deviation shall normally be limited to ± ½ the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of 1 time the RNP value are allowable.
3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV)	not more than – 75 feet below the vertical profile at any time, and not more than + 75 feet above the vertical profile at or below 1 000 feet above aerodrome level.

Heading

all engines operating	± 5°
with simulated engine failure	± 10°

Speed

all engines operating	± 5 knots
with simulated engine failure	+ 10 knots/- 5 knots’

(ii) the following point (h) is inserted in point 5 of Section B:

‘(h) To establish or maintain PBN privileges one approach shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.’

(iii) rows 3B.4 and 3B.5 of the table in point 5 of Section B are replaced by the following:

‘3B.4*	3D operations to DH/A of 200 feet (60 m) or to higher minima if required by the approach procedure (autopilot may be used to the final approach segment vertical path intercept)		P—>	—>		M	
3B.5*	2D operations to MDH/A		P—>	—>		M’	

(iv) the following point (j) is inserted in point 6 of Section B:

(j) To establish or maintain PBN privileges one approach shall be an RNP APCH. Where an RNP APCH is not practicable, it shall be performed in an appropriately equipped FSTD.;

(v) row 3.9.3 of the table in point 6 of Section B is replaced by the following:

'3.9.3* 3D operations to DH/A of 200 feet (60 m) or to higher minima if required by the approach procedure							
<p>Note: According to the AFM, RNP APCH procedures may require the use of autopilot or Flight director. The procedure to be flown manually shall be chosen taking into account such limitations (for example, choose an ILS for 3.9.3.1 in case of such AFM limitation).'</p>							

(vi) rows 3.9.3.4 and 3.9.4 of the table in point 6 of Section B are replaced by the following:

'3.9.3.4* manually, with one engine simulated inoperative; engine failure has to be simulated during final approach before passing 1 000 feet above aerodrome level until touchdown or through the complete missed approach procedure In aeroplanes which are not certificated as transport category aeroplanes (JAR/FAR 25) or as commuter category aeroplanes (SFAR 23), the approach with simulated engine failure and the ensuing go-around shall be initiated in conjunction with the non-precision approach as described in 3.9.4. The go-around shall be initiated when reaching the published obstacle clearance height (OCH/A), however not later than reaching a minimum descent height/altitude (MDH/A) of 500 feet above runway threshold elevation. In aeroplanes having the same performance as a transport category aeroplane regarding take-off mass and density altitude, the instructor may simulate the engine failure in accordance with 3.9.3.4.			P—>	—>		M	
3.9.4* 2D operations down to the MDH/A			P*—>	—>		M'	

(vii) row 4.1 of the table in point 6 of Section B is replaced by the following:

'4.1 Go-around with all engines operating* during a 3D operation on reaching decision height			P*—>	—>'			
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(viii) row 5.1 of the table in point 6 of Section B is replaced by the following:

'5.1 Normal landings* with visual reference established when reaching DA/H following an instrument approach operation			P'				
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(ix) in row 6.2 of the table in point 6 of Section B the word 'ILS' is replaced by the following: 'CAT II/III',

(x) point 4(a) of Section C is replaced by the following:

'(a) IFR flight limits.

Height

Generally	± 100 feet
Starting a go-around at decision height/altitude	+ 50 feet/- 0 feet
Minimum descent height/altitude	+ 50 feet/- 0 feet

Tracking

On radio aids	± 5°
3D "angular" deviations	half scale deflection, azimuth and glide path (e.g. LPV, ILS, MLS, GLS).
2D (LNAV) and 3D (LNAV/VNAV) "linear" deviation:	cross track error/deviation shall normally be limited to ± ½ the RNP value associated with the procedure. Brief deviations from this standard up to a maximum of 1 times the RNP value are allowable.
3D linear vertical deviations (e.g. RNP APCH (LNAV/VNAV) using BaroVNAV):	not more than - 75 feet below the vertical profile at any time, and not more than + 75 feet above the vertical profile at or below 1 000 feet above aerodrome level.

Heading

Normal operations	± 5°
Abnormal operations/emergencies	± 10°

Speed

Generally	± 10 knots
With simulated engine failure	+ 10 knots/- 5 knots',

(xi) rows 5.4, 5.4.1 and 5.4.2 of the table in point 12 of Section C are replaced by the following:

5.4	3D operations to DH/A of 200 feet (60 m) or to higher minima if required by the approach procedure	P*	—>*	—>*			
5.4.1	Manually, without flight director Note: According to the AFM, RNP APCH procedures may require the use of autopilot or Flight director. The procedure to be flown manually shall be chosen taken into account such limitations (example choose an ILS for 5.4.1 in case of such AFM limitation).	P*	—>*	—>*		M*	
5.4.2	Manually, with Flight Director	P*	—>*	—>*		M*	

(xii) rows 5.4.4 and 5.5 of the table in point 12 of Section C are replaced by the following:

5.4.4	Manually, with one engine simulated inoperative; engine failure has to be simulated during final approach before passing 1 000 feet above aerodrome level until touchdown or until completion of the missed approach procedure	P*	—>*	—>*		M*	
5.5	2D operations down to the minimum descent altitude MDA/H	P*	—>*	—>*		M**	

(2) in Annex VII, point (a) of ORA.ATO.135 is replaced by the following:

'(a) The ATO shall use an adequate fleet of training aircraft or FSTDs appropriately equipped for the training courses provided.'