Exam simulation

ATPL - Airline Transport Pilot license - Human Performance and Limitations

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STUDENT NAME:	DATE AND TIME:

01. The critical Mach Number of an aeroplane is the free stream Mach Number, which produces the first evidence of:

a) Shock wave.

b) Buffet.

c) Supersonic flow.

d) Local sonic flow.

02. The Maximum Zero Fuel Mass is a structural limiting mass. It is made up of the aeroplane Dry Operational mass plus

a) Traffic load, non-revenue load and crew standard mass.

b) Unuseable fuel and crew standard mass.

c) Traffic load

d) Traffic load and potable water.

03. Ignoring pulse length and fly-back, a radar facility designed to have a maximum unambiguous range of 50 km will have a PRF (pulses per second) of:

a) 167

b) 6000

c) 330

d) At the approach end about 150 m to one side of the runway and 300 m from touchdown

04. The Maximum Certificated Taxi (or Ramp) Mass is that mass to which an aeroplane may be loaded prior to engine start. It is:

a) A value which varies with airfield temperature and altitude. Corrections are listed in the Flight Manual.

b) A value which varies only with airfield altitude. Standard corrections are listed in the Flight Manual.

c) A fixed value which is listed in the Flight Manual.

d) A value which is only affected by the outside air temperature. Corrections are calculated from data given in the Flight Manual.

05. What approximate rate of descent is required in order to maintain a 3° glidepath at a groundspeed of 90 kt?

a) 450 FT/MIN
b) 700 FT/MIN
c) 600 FT/MIN
d) Stop the loop rotation

06. Healthy people are usually capable of compensating for a lack of oxygen up to:

a) 10000 - 12000 feet
b) 25000 feet
c) 20000 feet
d) 15000 feet

07. The conditions under which you obtain the highest engine power are:

a) Warm And Humid Air At Low Pressure.
b) Cold and humid air at high pressure.
c) Cold and dry air at high pressure.
d) Warm And Dry Air At High Pressure.

08. The maximum number of unrelated items that can be stored in working memory is:

a) About 7 items
b) Unlimited
c) About 30 items
d) Very limited - only 3 items

09. According to the ILS coverage area as defined by ICAO Annex 10, in which of the following situations will the pilot be guaranteed a reliable signal from the localiser?

a) 19NM from touchdown inbound and 13° displaced from the localiser centreline.
b) 27NM from touchdown inbound and 8° displaced from the localiser centreline.
c) 10NM from touchdown inbound and 38° displaced from the localiser centreline.
d) 20NM from touchdown inbound and 8° displaced from the localiser centreline.

10. Which statement about reduced thrust is correct?

a) Reduced thrust is primarily a noise abatement procedure

b) Reduced thrust can be used when the actual take-off mass is less than the field length limited take-off mass

c) In case of reduced thrust V1 should be decreased

d) Reduced thrust is used in order to save fuel

11. Given:TAS = 230 kt, HDG (T) = 250°,W/V = 205/10kt. Calculate the drift and GS?

a) 2L - 224 kt

b) 1L - 225 kt

c) 2R - 223 kt

d) 1R - 221 kt

12. Two places on the parallel of 47°S lie 757,8 km apart. Calculate the difference in longitude.

a) 10°00'

b) 9°19'

c) 4°51'

d) 4°39'

13. Given:Magnetic track = 075°, HDG = 066°(M),VAR = 11°E, TAS = 275 ktAircraft flies 48 NM in 10 MIN. Calculate the true W/V °?

a) 340°/45 kt

b) 180°/45 kt

c) 210°/15 kt

d) 320°/50 kt

14. GPS system satellites transmit their signals on two carrier waves 1575 MHz and 1227 MHz and supply two possible codes accessible according to user (civil or military).Commercial aviation is now able to use:

a) Only the 1575 MHz carrier wave and two codes

b) Only the 1227 MHz carrier wave and one code

c) The two carrier waves and one public code

d) SHF

15. When excessively leaning the mixture for a better fuel economy, but still on the rich side of the peak EGT, the following engine parameter(s) may exceed their normal operating ranges:

a) Oil Temperature.

b) Engine RPM.

c) Manifold pressure.

d) Cylinder head and exhaust gas temperature.

16. When engaged in the lateral navigation mode (LNAV) the autopilot uses:

a) The FMS active (TO) waypoint coordinates.

b) The FMS computation of the aircraft position and the FMS active (TO) waypoint bearing.

c) The FMS roll or heading command.

d) The FMS path angle command.

17. The cabin rate of descent:

a) Is Always The Same As The Airplane's Rate Of Descent.

b) Results in a cabin pressure increase.

c) Is not possible at constant airplane altitudes.

d) Results In A Cabin Pressure Decrease.

18. Must a 'general call' be acknowledged'?

a) Yes, from all stations in the sequence they have been addressed

b) Yes, but only from the station first called

c) Yes, from all stations in a random sequence

d) No

19. What is meant by good microphone technique ?

a) Use a normal conversation tone, speak clearly and distinctly.

b) Make large use of hesitation sounds as 'er'.

c) Keep the microphone far away since it improves the readability.

d) Speak very loudly into the microphone.

20. Given: true course (TC) 017 W/V 340/30TAS 420 kt Find: wind correction angle (WCA) and ground speed (GS)

a) WCA +2° GS 396 kt
b) WCA -2° GS 426 kt
c) WCA -2° GS 396 kt
d) WCA +2° GS 416 kt

21. When shall the phrase 'Take-off' be used by a pilot:

a) To inform TOWER when ready for departure
b) Never, it is used only by the control tower
c) Only when the aircraft has already moved onto the active runway
d) To acknowledge take-off clearance only

22. Which of the following statements is correct?

a) The performance limited take-off mass is independent of the wind component
b) The accelerate stop distance required is independent of the runway condition
c) The climb limited take-off mass is independent of the wind component
d) The take-off distance with one engine out is independent of the wind component

23. General provisions - handling an ATC-flight plan in case of a delayIn the event of a delay of a controlled flight, the submitted flight plan should be amended or cancelled and a new flight plan submitted when the delay is in excess of:

a) 30 minutes of the estimated time of departure.
b) 30 minutes of the estimated time off blocks.
c) 60 minutes of the estimated time of departure.
d) 60 minutes of the estimated time off blocks.

24. In the ICAO Standard Atmosphere the decrease in temperature with height below 11 km is

a) 1°C per 100m
b) 0.65°C per 100m
c) 0.6°C per 100m
d) 0.5°C per 100m

25. Initially, who is responsible for ensuring that cargo for air transportation as dangerous goods is not prohibited?

a) The shipper when completing the shipper's declaration for dangerous goods.

b) It is not specified.

c) The operator.

d) The commander, always using the list of prohibited items.

26. For an aeroplane with a tyre pressure of 10 bars, there is a risk of dynamic hydroplaning as soon as the:

a) Speed is greater than 108 kt.

b) Runway temperature is greater than 40

c) Speed is greater than 96 kt.

d) Water depth is equal to the half of the depth of the tyre grooves.

27. Which of the following is obligating for members of ICAO?

a) ICAO shall approve the pricing of tickets on international airline connections

b) ICAO must be informed about differences from the standards in any of the Annexes to the convention

c) ICAO must be informed about new flight crew licenses and any suspended validity of such licenses

d) ICAO must be informed about changes in the national regulations

28. On a polar stereographic chart where the Earth convergence between 2 points located on the parallel 60°N is 20°, the great circle maximum cross-track difference with the straight line joining the 2 points is:

a) 9.2 NM

b) 30 NM

c) 40 NM

d) 4.0 NM

29. An aircraft is flying a 3° glidepath and experiences a reduction in groundspeed from 150 kt at the outer marker to 120 kt over the threshold. The effect of this change in groundspeed on the aircraft's rate of descent will be a decrease of approximately:

a) 50 FT/MIN

b) 250 FT/MIN

c) 100 FT/MIN

d) 150 FT/MIN

30. An aeroplane is operated at FL 330. 22 passenger are on board. The first aid oxygen to be on board at departure shall provide breathing supply for at least:

a) 1 passenger for the remainder of the flight after cabin depressurisation when the cabin altitude exceeds 14000 ft.

b) No first aid required.

c) 2 passengers for the remainder of the flight after cabin depressurisation when the cabin altitude exceeds 10000 ft.

d) 1 passenger for the remainder of the flight after cabin depressurisation when the cabin altitude exceeds 8000 ft.

31. QNH is the Q-code to indicate:

a) The atmospheric pressure at aerodrome elevation (or at runway threshold)

b) The atmospheric pressure measured at the aerodrome reference point (ARP)

c) The altimeter sub-scale setting to obtain elevation when on the ground

d) The atmospheric pressure referred to the highest obstacle located on the surface of an aerodrome

32. The ILS frequency and identifier for RWY 26R are:

a) 108.7 IMSW

b) 108.3 IMNW

c) 108.7 IMNW

d) 108.3 IMSW[see Annex]

33. Flight planning chart for an aircraft states, that the time to reach the cruising level at a given gross mass is 36 min and the distance travelled is 157 NM (zero-wind). What will be the distance travelled with an average tailwind component of 60 KT?

a) 128 NM

b) 193 NM

c) 228 NM

d) 157 NM

34. According to JAR-FCL, establishment of separate type rating for aeroplanes will be assessed on the basis of three criteria. One of these three criteria is that the aeroplane has:

a) Handling characteristics that require additional flying or simulator training

b) A certificate of airworthiness issued by the manufacturer.

c) A certificate of airworthiness issued by a non-member state.

d) Handling characteristics that require the use of more than one crew member

35. An aeroplane has a stall speed of 100 KT at a load factor n = 1. In a turn with a load factor of n = 2, the stall speed is:

a) 141 KT

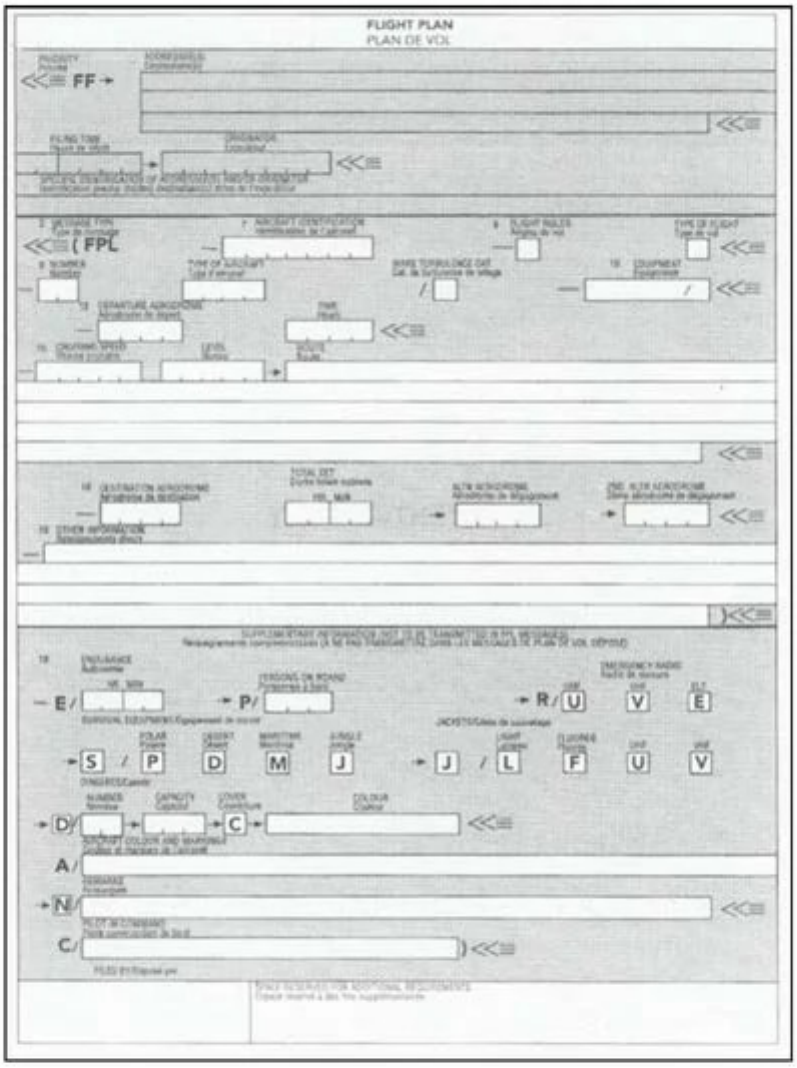
b) 200 KT

c) 70 KT

d) 282 KT

36. When completing Item 9 of the ATC flight plan, if there is no appropriate aircraft designator, the following should be entered:

	FLIGHT PLANNING ICAO MODEL FLIGHT PLAN FORM	



a) The most descriptive abbreviation
b) 'XXXX' followed by an entry in Item 18
c) 'NONE'
d) 'ZZZZ' followed by an entry in Item 18

37. The point at which a tangent out of the origin touches the power required curve

a) Is the point where Drag coefficient is a minimum.

b) Is the point where the Lift to Drag ratio is a minimum.

c) Is the point where the Lift to Drag ratio is a maximum.

d) Is the maximum drag speed.

38. For the purpose of completing the Mass and Balance documentation, the Traffic Load is considered to be equal to the Take-off Mass

a) Plus the Operating Mass.

b) Plus the Trip Fuel Mass.

c) Less the Operating Mass.

d) Less the Trip Fuel Mass.

39. The correct statement about rain protection for cockpit windshields is that:

a) Rain repellent should never be sprayed onto the windshield unless the rainfall is very heavy

b) The alcohol de-icing system for cockpit windows is also suitable for rain protection

c) The electric de-icing system for cockpit windows is also suitable for rain protection

d) Wipers Are Sufficient Under Heavy Rain Conditions To Provide Adequate View Through The Cockpit Windows.

40. In a steep turn, the northerly turning error on a magnetic compass on the northern hemisphere is:

a) None on a 270° heading in a left turn.

b) None on a 090° heading in a right turn.

c) Equal to 180° on a 090° heading in a right turn.

d) Equal to 180° on a 270° heading in a right turn.

41. The lift coefficient (CL) of an aeroplane in steady horizontal flight is 0.4. An increase in angle of attack of 1 degree will increase CL by 0.09. A vertical up gust instantly changes the angle of attack by 5 degrees. The load factor will be:

a) 1.09

b) 2.0

c) 2.13

d) 3.18

42. What is the chart distance between longitudes 179°E and 175°W on a direct Mercator chart with a scale of 1: 5 000 000 at the equator?

a) 106 mm

b) 167 mm

c) 133 mm

d) 72 mm

43. Which of the following statements about the spin is correct?

a) An aeroplane is prone to spin when the stall starts at the wing root

b) In the spin, airspeed continuously increases

c) During spin recovery the ailerons should be kept in the neutral position

d) Every aeroplane should be designed such that it can never enter a spin

44. When completing an ATC flight plan, an elapsed time (Item 1 6) of 1 hour 55 minutes should be entered as:

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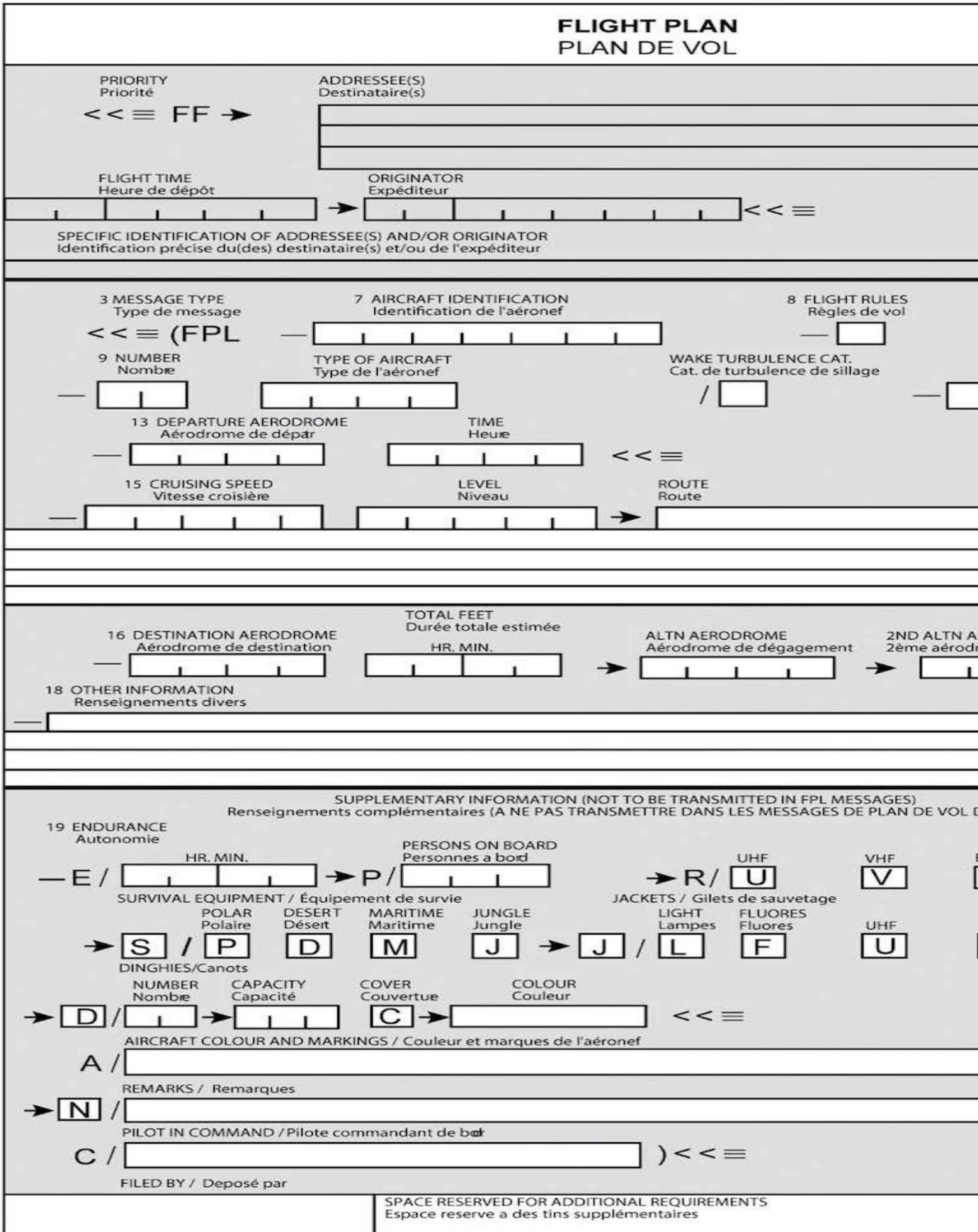
FLIGHT PLAN
PLAN DE VOL
PRIORITY
Priorité
<< ≡ FF →
ADDRESSEE(S)
Destinataire(s)
FLIGHT TIME
Heure de dépôt
ORIGINATOR
Expéditeur
<< ≡
SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR
Identification précise du(des) destinataire(s) et/ou de l'expéditeur
3 MESSAGE TYPE
Type de message
<< ≡ (FPL
7 AIRCRAFT IDENTIFICATION
Identification de l'aéronef
8 FLIGHT RULES
Règles de vol
9 NUMBER
Nombre
TYPE OF AIRCRAFT
Type de l'aéronef
WAKE TURBULENCE CAT.
Cat. de turbulence de sillage
13 DEPARTURE AERODROME
Aérodrome de départ
TIME
Heure
<< ≡
15 CRUISING SPEED
Vitesse croisière
LEVEL
Niveau
ROUTE
Route
16 DESTINATION AERODROME
Aérodrome de destination
TOTAL FEET
Durée totale estimée
HR. MIN.
ALTN AERODROME
Aérodrome de dégagement
2ND ALTN A
2ème aérodr
18 OTHER INFORMATION
Renseignements divers
SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)
Renseignements complémentaires (A NE PAS TRANSMETTRE DANS LES MESSAGES DE PLAN DE VOL D
19 ENDURANCE
Autonomie
—E/
HR. MIN.
→P/
PERSONS ON BOARD
Personnes a bord
→R/
UHF
U
VHF
V
SURVIVAL EQUIPMENT / Équipement de survie
JACKETS / Gilets de sauvetage
POLAR
Polaire
DESERT
Désert
MARITIME
Maritime
JUNGLE
Jungle
LIGHT
Lampes
FLUORES
Fluores
UHF
→S / P D M J → J / L F U
DINGHIES/Canots
NUMBER
Nombre
CAPACITY
Capacité
COVER
Couvertue
COLOUR
Couleur
→D / → C →
<< ≡
AIRCRAFT COLOUR AND MARKINGS / Couleur et marques de l'aéronef
A /
REMARKS / Remarques
→N /
PILOT IN COMMAND / Pilote commandant de bord
C /) << ≡
FILED BY / Deposé par
SPACE RESERVED FOR ADDITIONAL REQUIREMENTS
Espace reserve a des tins supplémentaires

a) 0155
b) 0115
c) 115M
d) 1H55

45. The time is 4:15 P.M. What is the correct way of transmitting this time if there is any possibility of confusion about the hour?

a) Sixteen fifteen
b) Four fifteen P.M.
c) Four fifteen in the afternoon
d) One six one five

46. The Basic Empty Mass is 4800 kg, the Dry Operating Mass is 5050 kg and the Zero Fuel Mass is 6210 kg.If the take-off mass is 8010 kg the useful load is:

a) 3210 kg
b) 2960 kg
c) 1160 kg
d) 1800 kg

47. Distance Measuring Equipment (DME) operates in the:

a) VHF band and uses the principle of phase comparison

b) UHF band and uses one frequency

c) UHF band and uses two frequencies

d) SHF band and uses frequency modulation techniques

48. What is the radiotelephony call sign for the aeronautical station indicating approach control radar arrivals?

a) ...ARRIVAL

b) ...DIRECTOR

c) ...RADAR

d) ...APPROACH

49. How should an ATS unit instruct Fastair 345 to contact Stephenville RADAR on frequency 132.0083 (8.33 KHz frequency spacing)?

a) Fastair 345 contact Stephenville RADAR channel 132.0083

b) Fastair 345 contact Stephenville RADAR channel 132.010

c) Fastair 345 contact Stephenville RADAR on 132.0083

d) Fastair 345 contact Stephenville RADAR 132.010

50. For an aeroplane with one fixed value of VA the following applies. VA is:

a) The speed at which unrestricted application of elevator control can be used, without exceeding the maximum manoeuvring limit load factor

b) The maximum speed in smooth air

c) Just another symbol for the rough air speed

d) The speed at which the aeroplane stalls at the manoeuvring limit load factor at MTOW.

51. A radio beacon has an operational range of 10 NM. By what factor should the transmitter power be increased in order to achieve an operational range of 20 NM?

a) Eight

b) Six

c) Two

d) Four

52. Which of the following will decrease V1?

a) Increased take-off mass
b) Inoperative anti-skid
c) Increased outside air temperature
d) Inoperative flight management system

53. Behaviour is the outward result of .....and is .....:

a) Attitude adaptable
b) Personality inadaptable
c) Attitude and personality inadaptable
d) Attitude and personality adaptable

54. On most transport aircraft, the low pressure pumps of the fuel system are:

a) Diaphragm Pumps.
b) Centrifugal pumps.
c) Piston pumps.
d) Gear Type Pumps.

55. The landing field length required for turbojet aeroplanes at the destination (wet condition) is the demonstrated landing distance plus:

a) 67%
b) 92%
c) 43%
d) 70%

56. What is the name for the sensation of rotation occurring during flight and which is caused by multiple stimulation of several semicircular canals at the same time?

a) 'Seat-of-the-Pants' illusions
b) Sudden incapacitation
c) Graveyard spin
d) 'Pilot's' Vertigo

57. When it becomes apparent that an aircraft is in difficulty, the decision to initiate the alert phases is the responsibility of the:

a) Operational air traffic control centres

b) Search and rescue co-ordination centres

c) Air traffic co-ordination services

d) Flight information or control organisations

58. During summer an anticyclone covers the British Isles giving mainly clear skies. At 0600 UTC a south coast airfield in Southern England reports a surface wind of 350/06. The coastline at the airfield perimeter is aligned in an east/west direction. During the next twelve hours the surface wind is likely to

a) Back to NW and strengthen by mid-afternoon

b) Increase from the north by mid-morning becoming calm towards evening

c) Become southerly to south-westerly and increase in velocity by afternoon

d) Veer to easterly before becoming calm by the afternoon

59. Immediately following the MAYDAY prefix, an aircraft in distress should transmit:

a) The aircraft call sign twice.

b) Its last known position.

c) The call sign of the station addressed, when it is known and the circumstances permit.

d) The nature of the emergency.

60. The main reason for mounting the detector unit of a remote reading compass in the wingtip of an aeroplane or a helicopter tail-boom is:

a) To maximize the units exposure to the Earth's magnetic field.

b) To ensure that the unit is in the most accessible position on the aircraft for ease of maintenance.

c) By having detector units on both wingtips, to cancel out deviation effects caused by the aircraft structure.

d) To minimize the amount of deviation caused by aircraft magnetism and electrical circuits.

61. In accordance to CS 25 which of the following listed speeds are used for determination of V2min:

a) VMCG, V2

b) VSR, VMCA

c) V1, VR

d) VLOF, VMC

62. Aircraft XY-ABC is making a test transmission with Stephenville TOWER on frequency 118.7. What is the correct phrasing for this transmission:

a) Stephenville TOWER XY-ABC radio check 118.7

b) Stephenville TOWER XY-ABC frequency check

c) Stephenville TOWER XY-ABC signal check

d) Stephenville TOWER XY-ABC pre-flight check

63. An engine fire in a large transport aeroplane is indicated by a(n):

a) Visual Warning Only.

b) Aural alert only.

c) Visual warning and an aural alert.

d) Bell.

64. Altitude-hypoxia, when breathing ambient air, should not usually occur (indifferent phase)

a) Between 3 000 m and 5 000 m

b) Up to 5 000 m

c) Between 5 000 m and 7 000 m

d) Below 3 000 m

65. Which of these statements about rudder limiting are correct or incorrect? 1) A rudder ratio changer system reduces the rudder deflection for a given rudder pedal deflection as the IAS decreases. 2) A variable stop system limits both rudder and rudder pedal deflection as the IAS increases.

a) 1) Is Correct, 2) Is Correct.

b) 1) Is Correct, 2) Is Incorrect.

c) 1) is incorrect, 2) is correct.

d) 1) Is Incorrect, 2) Is Incorrect.

66. During the extension of the flaps at a constant angle of attack the aeroplane starts to (all other factors of importance being constant)

a) Bank.

b) Climb.

c) Yaw.

d) Sink suddenly.

67. If individual masses are used, the mass of an aircraft must be determined prior to initial entry into service and thereafter

a) Only if major modifications have taken place.

b) At regular annual intervals.

c) At intervals of 9 years.

d) At intervals of 4 years if no modifications have taken place.

68. Regarding the oxygen system of a CS 25 aeroplane:

a) The Same Source Of Supply Is Used By The Crew And Passengers.

b) With the setting on "NORMAL", the crew breathes a mixture of oxygen and cabin air.

c) The passenger source of supply never uses chemically generated oxygen.

d) The Seals Must Be Carefully Greased To Avoid Sparks.

69. A list of dangerous goods, which may not be transported by air, can be found in:

a) Annex 18 to the Chicago Convention.

b) The shippers declaration for dangerous goods.

c) Annex 6 to the Chicago Convention.

d) The technical instructions for the safe transport of dangerous goods by air.

70. Before Transmitting the pilot should:

a) Make sure that the aircraft is levelled off.

b) Make sure that the emergency frequency is tuned in at the same time.

c) Listen out on the frequency to ensure no interference with another station already transmitting will occur.

d) Always write the message and read it during the transmission.

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Response Scheme

Compare your answers with the following diagram and mark your score!

01: **D**	02: **C**	03: **D**	04: **C**
05: **A**	06: **A**	07: **C**	08: **A**
09: **B**	10: **B**	11: **C**	12: **A**
13: **A**	14: **A**	15: **D**	16: **C**
17: **B**	18: **D**	19: **A**	20: **C**
21: **D**	22: **C**	23: **B**	24: **B**
25: **D**	26: **A**	27: **B**	28: **B**
29: **A**	30: **D**	31: **C**	32: **C**
33: **B**	34: **A**	35: **A**	36: **D**
37: **C**	38: **C**	39: **A**	40: **C**
41: **C**	42: **C**	43: **C**	44: **A**
45: **D**	46: **B**	47: **C**	48: **A**
49: **D**	50: **D**	51: **D**	52: **B**
53: **D**	54: **B**	55: **B**	56: **D**
57: **A**	58: **C**	59: **C**	60: **D**
61: **B**	62: **A**	63: **C**	64: **D**
65: **C**	66: **B**	67: **D**	68: **B**
69: **D**	70: **C**		

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Response form

Use this form to mark your answers

01:	02:	03:	04:
05:	06:	07:	08:
09:	10:	11:	12:
13:	14:	15:	16:
17:	18:	19:	20:
21:	22:	23:	24:
25:	26:	27:	28:
29:	30:	31:	32:
33:	34:	35:	36:
37:	38:	39:	40:
41:	42:	43:	44:
45:	46:	47:	48:
49:	50:	51:	52:
53:	54:	55:	56:
57:	58:	59:	60:
61:	62:	63:	64:
65:	66:	67:	68:
69:	70:		