

## **Titel: FLIGHT PERFORMANCE AND PLANNING (2)**

*Dokument-Nr.:* DC\_PEL\_ATPL\_032  
*Version:* 1.0  
*Status:* Freigegeben  
*Klassifizierung:* Uneingeschränkt  
*Prozess:* -  
*Seiten:* 5  
*Verteilung:* Original: JAA  
*Verteiler:* Internet  
*Anlagen:* -

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## FLIGHT PERFORMANCE AND PLANNING (2) PERFORMANCE

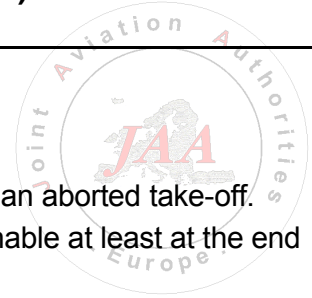
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- 1 Any acceleration in climb, with a constant power setting,
- A improves the climb gradient if the airspeed is below VX.
  - B decreases the rate of climb and the angle of climb.
  - C decreases rate of climb and increases angle of climb.
  - D improves the rate of climb if the airspeed is below VY.
- 2 (For this question use annex A)  
Using the Landing Diagram, for single engine aeroplane, determine the landing distance (from a screen height of 50 ft) required, in the following conditions:  
Given:
- |                     |                  |
|---------------------|------------------|
| Pressure altitude:  | 4000 ft          |
| O.A.T.:             | 5°C              |
| Aeroplane mass:     | 3530 lbs         |
| Headwind component: | 15 kt            |
| Flaps:              | Approach setting |
| Runway:             | tarred and dry   |
| Landing gear:       | down             |
- A 1400 ft
  - B 880 ft
  - C 1550 ft
  - D 1020 ft
- 3 Which of the following combinations adversely affects take-off and initial climb performance ?
- A High temperature and high relative humidity
  - B Low temperature and high relative humidity
  - C High temperature and low relative humidity
  - D Low temperature and low relative humidity
- 4 If the airworthiness documents do not specify a correction for landing on a wet runway; the landing distance must be increased by:
- A 20 %
  - B 10 %
  - C 5 %
  - D 15 %
- 5 The absolute ceiling
- A can be reached only with minimum steady flight speed
  - B is the altitude at which the rate of climb theoretically is zero.
  - C is the altitude at which the aeroplane reaches a maximum rate of climb of 100 ft/min.
  - D is the altitude at which the best climb gradient attainable is 5%
- 6 The optimum altitude
- A increases as mass decreases and is the altitude at which the specific range reaches its maximum.
  - B decreases as mass decreases.
  - C is the altitude at which the specific range reaches its minimum.
  - D is the altitude up to which cabin pressure of 8 000 ft can be maintained.

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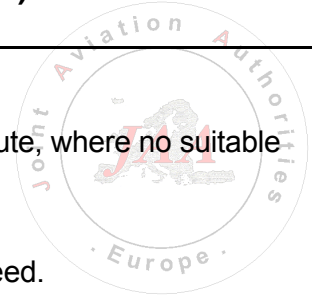
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- 7 Which of the following statements is correct ?
- A A clearway is an area beyond the runway which can be used for an aborted take-off.
  - B If a clearway or a stopway is used, the lift-off point must be attainable at least at the end of the permanent runway surface.
  - C A stopway means an area beyond the take-off runway, able to support the aeroplane during an aborted take-off.
  - D An underrun is an area beyond the runway end which can be used for an aborted take-off.
- 8 Which statement about reduced thrust is correct?
- A Reduced thrust is used in order to save fuel.
  - B In case of reduced thrust V1 should be decreased.
  - C Reduced thrust can be used when the actual take-off mass is less than the field length limited take-off mass.
  - D Reduced thrust is primarily a noise abatement procedure.
- 9 How is VMCA influenced by increasing pressure altitude?
- A VMCA decreases with increasing pressure altitude.
  - B VMCA is not affected by pressure altitude.
  - C VMCA increases with increasing pressure altitude.
  - D VMCA decreases with pressure altitude higher than 4000 ft.
- 10 Which statement, in relation to the climb limited take-off mass of a jet aeroplane, is correct?
- A 50% of a head wind is taken into account when determining the climb limited take-off mass.
  - B On high elevation airports equipped with long runways the aeroplane will always be climb limited.
  - C The climb limited take-off mass decreases with increasing OAT.
  - D The climb limited take-off mass is determined at the speed for best rate of climb.
- 11 Regarding the obstacle limited take-off mass, which of the following statements is correct?
- A The maximum bank angle which can be used is 10°.
  - B The obstacle limited mass can never be lower than the climb limited take-off mass.
  - C Wind speed plays no role when calculating this particular mass.
  - D A take-off in the direction of an obstacle is also permitted in tail wind condition.
- 12 What happens when an aeroplane climbs at a constant Mach number?
- A The "1.3G" altitude is exceeded, so Mach buffet will start immediately.
  - B IAS stays constant so there will be no problems.
  - C The TAS continues to increase, which may lead to structural problems.
  - D The lift coefficient increases.
- 13 Long range cruise is selected as
- A the higher speed to achieve 99% of maximum specific range in zero wind.
  - B the speed for best economy.
  - C the climbing cruise with one or two engines inoperative.
  - D specific range with tailwind.
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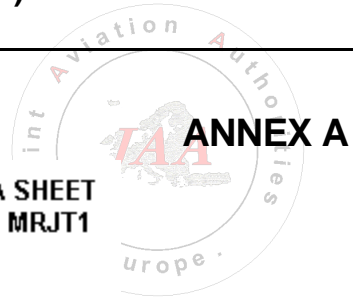
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- 14 ETOPS flight is a twin engine jet aeroplane flight conducted over a route, where no suitable airport is within an area of
- A 30 minutes flying time at the normal cruising speed.
  - B 75 minutes flying time at the approved one engine out cruise speed.
  - C 60 minutes flying time in still air at the approved one engine out cruise speed.
  - D 60 minutes flying time in still air at the normal cruising speed.
- 15 An aeroplane carries out a descent from FL 410 to FL 270 at cruise Mach number, and from FL 270 to FL 100 at the IAS reached at FL 270.  
How does the angle of descent change in the first and in the second part of the descent?  
Assume idle thrust and clean configuration and ignore compressibility effects.
- A Increases in the first part; decreases in the second.
  - B Increases in the first part; is constant in the second.
  - C Decreases in the first part; increases in the second.
  - D Is constant in the first part; decreases in the second.
- 16 Which of the following is true according to JAA regulations for turbo propeller powered aeroplanes not performing a steep approach?
- A Maximum Landing Distance at destination is  $0,95 \times \text{LDA}$  (Landing Distance Available).
  - B Maximum Landing Distance at the destination aerodrome and at any alternate aerodrome is  $0,7 \times \text{LDA}$  (Landing Distance Available).
  - C Maximum use of clearway is  $1,5 \times \text{runway}$ .
  - D Maximum Take-off Run is  $0,5 \times \text{runway}$ .

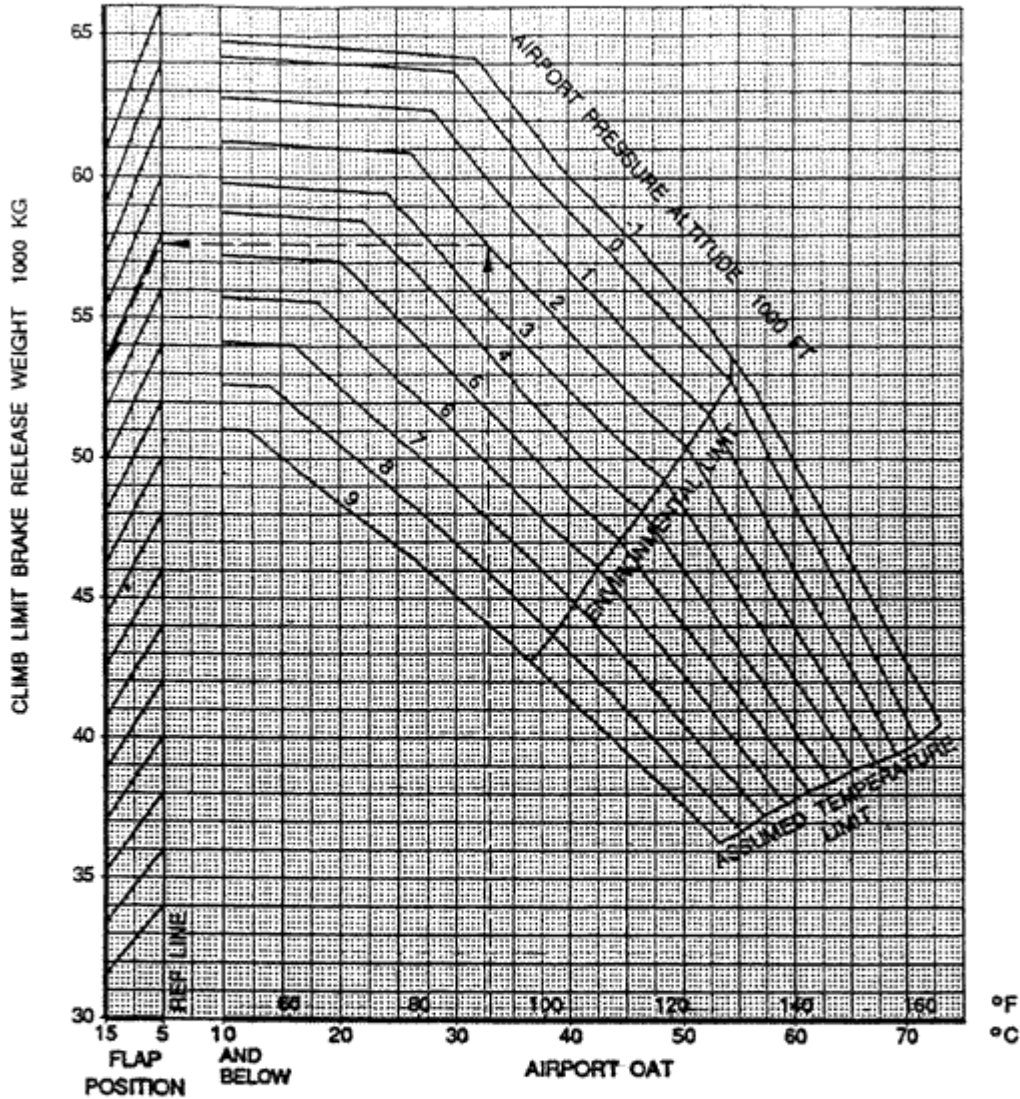
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CIVIL AVIATION AUTHORITY  
PERFORMANCE - AEROPLANES

DATA SHEET  
MRJT1

Figure 4.5 Take Off Performance Climb Limit



BASED ON A/C AUTO WITH APU ON OR OFF. FOR PACKS OFF, INCREASE ALLOWABLE WEIGHT BY 900 KG.  
FOR OPERATION WITH ENGINE ANTI-ICE ON SUBTRACT 190 KG WHEN AIRPORT PRESSURE ALTITUDE IS AT OR BELOW 8000 FEET OR 530 KG WHEN AIRPORT PRESSURE ALTITUDE IS ABOVE 8000 FEET.

**PMC OFF CORRECTION**

ALTITUDE FT	TEMPERATURE °C (°F)	WT DECREMENT KG
BELOW 5000	ALL	0
5000 & ABOVE	ABOVE 21 (70) 21 (70) & BELOW	0 1860