

OP-11 Authors

how to avoid frequently made mistakes



Uniform answers

Catalog:031-Flight Performance & Planning-OP-11-Order-02-1 (English)

4 The sum of Basic Empty Mass, useful load and variable equipment is defined as...

- take-off Mass
- Zero Fuel Mass
- dry Operating Mass
- operating Mass


31.2.1.1 Mass terms

Answers style not uniform!

Catalog:031-Flight Performance & Planning-OP-11-Order-02-1 (English)

4 The sum of Basic Empty Mass, useful load and variable equipment is defined as...

- Take Off Mass
- Zero Fuel Mass
- Dry Operating Mass
- Operating Mass



No repetitions

The traffic load is...

1. the Take-off Mass minus the Operating Mass.
2. the Take-off Mass minus the Zero Fuel Mass.
3. the Operating Mass minus the Dry Operating Mass.
4. the Zero Fuel Mass minus the Dry Operating Mass.
5. the Take-off mass minus the Dry Operating Mass.
6. the Zero Fuel Mass minus the Operating Mass.

The traffic load is the...

1. Take-off Mass minus the Operating Mass.
2. Take-off Mass minus the Zero Fuel Mass.
3. Operating Mass minus the Dry Operating Mass.
4. Zero Fuel Mass minus the Dry Operating Mass.
5. Take-off mass minus the Dry Operating Mass.
6. Zero Fuel Mass minus the Operating Mass.



Fill in – clear wording

Don't use fill in questions

Catalog:031-Flight Performance & Planning-OP-11-Order-02-1 (English)

14 The centre of gravity of an aeroplane is a location along the (i), through which the total (ii) is assumed to act in a vertical downward direction...
What words are missing from the above statement at the positions (i) and (ii).

(i) vertical axis; (ii) lift

(i) longitudinal axis; (ii) balance arm

(i) vertical axis; (ii) moment

(i) longitudinal axis; (ii) weight

31.3.1 Definition of centre of gravity MC 15-031-02-1-0001E ATPLA, ATPLH (VFR), ATPLH +... 25 Questions 1 P 60 s



Clear wording

21 Given: $F = m \cdot (\Delta v) + A \cdot \Delta P$

The first part of this formula ($m \cdot (\Delta v)$) shows <1> and the last part of this formula ($A \cdot \Delta P$) shows <2>.

- 1: the thrust caused by the acceleration of the air mass flow
2: the thrust caused by the pressure difference at the exhaust

- 1: the thrust of the core section
2: the thrust of the fan section of a turbofan

- 1: the thrust of the propeller
2: the thrust of the exhaust of a turbofan

- 1: the thrust of the hot section
2: the thrust of the cold section of a turbofan

Fill in – clear wording

21 Given: $F = m \cdot (\Delta v) + A \cdot \Delta P$

Which answer states the correct explanation of the two parts of the right side of the formula?

- $m \cdot (\Delta v)$: the thrust caused by the acceleration of the air mass flow
 $A \cdot \Delta P$: the thrust caused by the pressure difference at the exhaust

- $m \cdot (\Delta v)$: the thrust of the core section
 $A \cdot \Delta P$: the thrust of the fan section of a turbofan

- $m \cdot (\Delta v)$: the thrust of the propeller
 $A \cdot \Delta P$: the thrust of the exhaust of a turboprop

- $m \cdot (\Delta v)$: the thrust of the hot section
 $A \cdot \Delta P$: the thrust of the cold section of a turbofan

Avoid such fill in questions



Homogeneous answers

2 An aircraft has a hydraulic system with a normal working pressure of 3000 psi.
When during a pre-flight inspection the hydraulic system pressure is 0 psi, the accumulator gas pressure is...

about 1000 psi

0 psi

3000 psi

5000 psi

2 An aircraft has a hydraulic system with a normal working pressure of 3000 psi.
When during a pre-flight inspection the hydraulic system pressure is 0 psi, the accumulator gas pressure is...

about 1000 psi

about 0 psi

about 3000 psi

about 5000 psi



Homogeneous answers

Catalog:070-Operational Procedures-OP-11-02-1-NR (English)

2

What is the time-based wake turbulence separation minimum between an arriving LIGHT aircraft behind an arriving MEDIUM aircraft?

2 minutes

3 minutes

1 minute

no wake turbulence separation minimum



Homogeneous answers

5

Enroute to your destination aerodrome you receive a weather report indicating that at the expected time of arrival, the weather conditions at the destination aerodrome are below the applicable aerodrome operating minima.

Which statement is correct?

You may continue towards the planned destination aerodrome when...

- at the expected time of arrival, the weather conditions at both planned destination alternate aerodrome, are at or above the applicable aerodrome operating minima
- at the expected time of arrival, the weather conditions at least at one destination alternate aerodrome, are at or above the applicable planning minima
- at the expected time of arrival, the weather conditions at least at one destination alternate aerodrome, are at or above the applicable aerodrome operating minima
- during a period one hour before and ending one hour after the estimated time of arrival, the weather conditions at least at one destination alternate aerodrome, are at or above the applicable aerodrome operating minima

Avoid such long text



Homogeneous answers

Catalog:070-Operational Procedures-OP-11-02-1-NR (English)

2

What is the time-based wake turbulence separation minimum between an arriving LIGHT aircraft behind an arriving MEDIUM aircraft?

2 minutes

3 minutes

1 minute

no wake turbulence separation minimum



Homogeneous answers

13 **When are you allowed to fly below a specified minimum flight altitude?**

never

when being radar vectored

when necessary for take-off or landing

when changing from IFR to VFR



Homogeneous answers

Catalog:071-Operational Procedures-OP-11-Order-01 (English)

2

Which aeroplane shall be equipped with windshield wipers?

MCTOM (Maximum Certificated Take-Off Mass)

MAPSC (Maximum Approved Passenger Seating Configuration)

not homogenous answers !!! very easy

aeroplane with a MCTOM > 5700 kg

aeroplane with a MCTOM > 2000 kg

aeroplane operated for the purpose of commercial air transportation

there is no mandatory requirement for windshield wipers or equivalent means

Homogeneous answers

Catalog:071-Operational Procedures-OP-11-Order-01 (English)

75

State when a fuel jettisoning system is required to be installed on an aeroplane.

A fuel jettisoning system...

- is required on all aeroplane** **not homogenous answers!**
- is optional** **right answer is easy to recognize!**
- must be installed when an aeroplane doesn't meet the climb requirements according the Certification Specifications for Large Aeroplanes (CS 25)**
- must be installed to enable an aeroplane to meet the requirements for an overweight landing within 15 minutes after take-off.**



Avoid unnecessary word

Catalog:021-Aircraft General Knowledge-OP-11-Order-2-1 (English)

8

Where is fuel stored?

1. in the wing leading edge
2. between the wing main spars
3. in the wing trailing edge
4. in the wing tip

  2 only

1 and 3

2 and 4

1, 2, 3 and 4



Repetitions / authors name

8032

Mark the correct statement concerning the climb performance.

Increasing...

Increasing mass decreases the flight speed for best rate of climb.

~~Increasing~~ headwind increases the maximum climb gradient.

~~Increasing~~ headwind decreases the maximum rate of climb.

~~Increasing~~ mass increases the flight speed for best angle of climb.

Authors: Ly, Gu



Simplify English

Catalog:070-Operational Procedures-OP-11-02-1-NR (English)

How is term "wake turbulence" defined?

Wake turbulence is the effect of the rotating air masses generated behind the wing tips of large jet aircraft.

Wake turbulence is the moving at high speed.

Wake turbulence is the maneuvers.

Wake turbulence is the aircraft.

No repetitions

Catalog:070-Operational Procedures-OP-11-02-1 (English)

1 "Wake turbulence" is the effect of the...

rotating air masses generated behind the wing tips of large jet aircraft

laminar air stream behind the wing of large jet aircraft moving at high speed

rotating air masses generated behind the wing during stall maneuvers

air stream generated behind the engines of large jet aircraft



Please insert picture names in the question text, not in remark field

15

What is the mechanical advantage of the pulley system shown in the picture?

(EASA-66-M02-001)

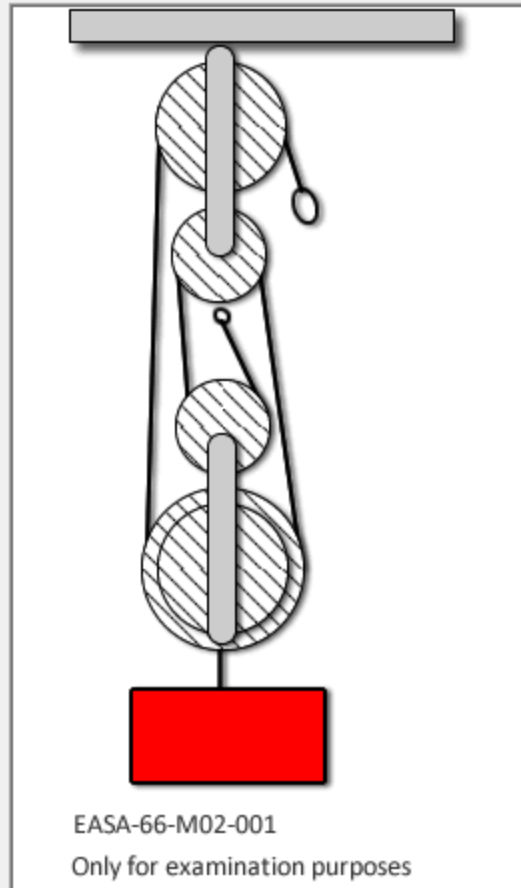
(Or filename)

5

4

3

2



Pictures in answers

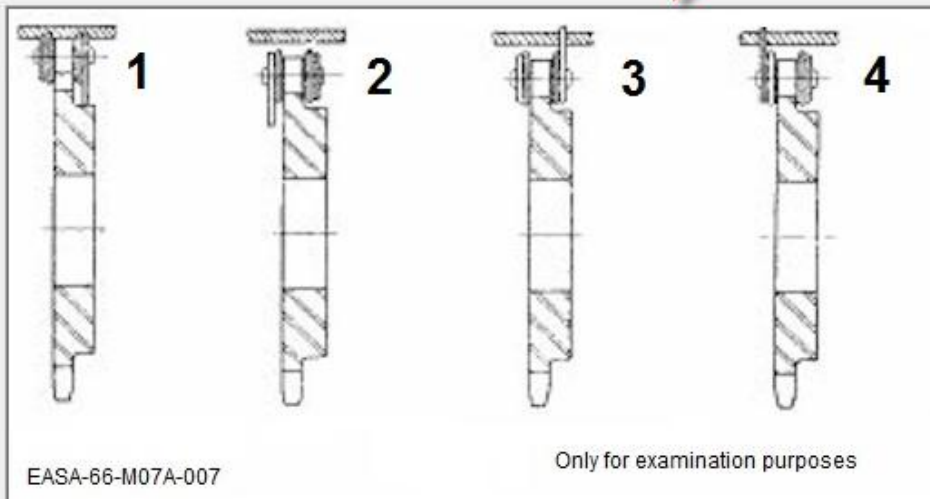
41

Which of the illustrations below shows a correctly installed chain assembly?

(EASA-66-M07A-007)

- 1
- 2
- 3
- 4

use only 1 picture (file) - not for each answer one picture file



Abbreviations should be explained if not to define by students

Order-02-1	ok	not ok		ok	not ok		ok	not ok
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19 What parameter(s) is/are used to set the power of an engine with a constant speed propeller?

- 1. MAP
- 2. RPM
- 3. CHT

- A) 1 and 2
- B) 1
- C) 2 and 3
- D) 1, 2 and 3

Abbreviations!

Catalog:021-Aircraft General Knowledge-OP-11-Order-2-1 (English)

4

What makes a FBW (Fly By Wire) system irreversible?

write always the abbreviation first, followed by the explanation in brackets.

- there is no feedback towards the control column
- the input cannot be overridden
- once installed, the mechanical control cables are permanently removed
- the FBW system keeps the aircraft within its flight envelope



Abbreviations should be explained if not to define by students

Catalog:071-Operational Procedures-OP-11-Order-01 (English)

36 **What is the planning requirement for ETOPS (Extended range twin operations) flights?**

ETOPS - extended range operation twin engined aeroplanes

An adequate ETOPS en-route alternate must be available within the approved diversion time.

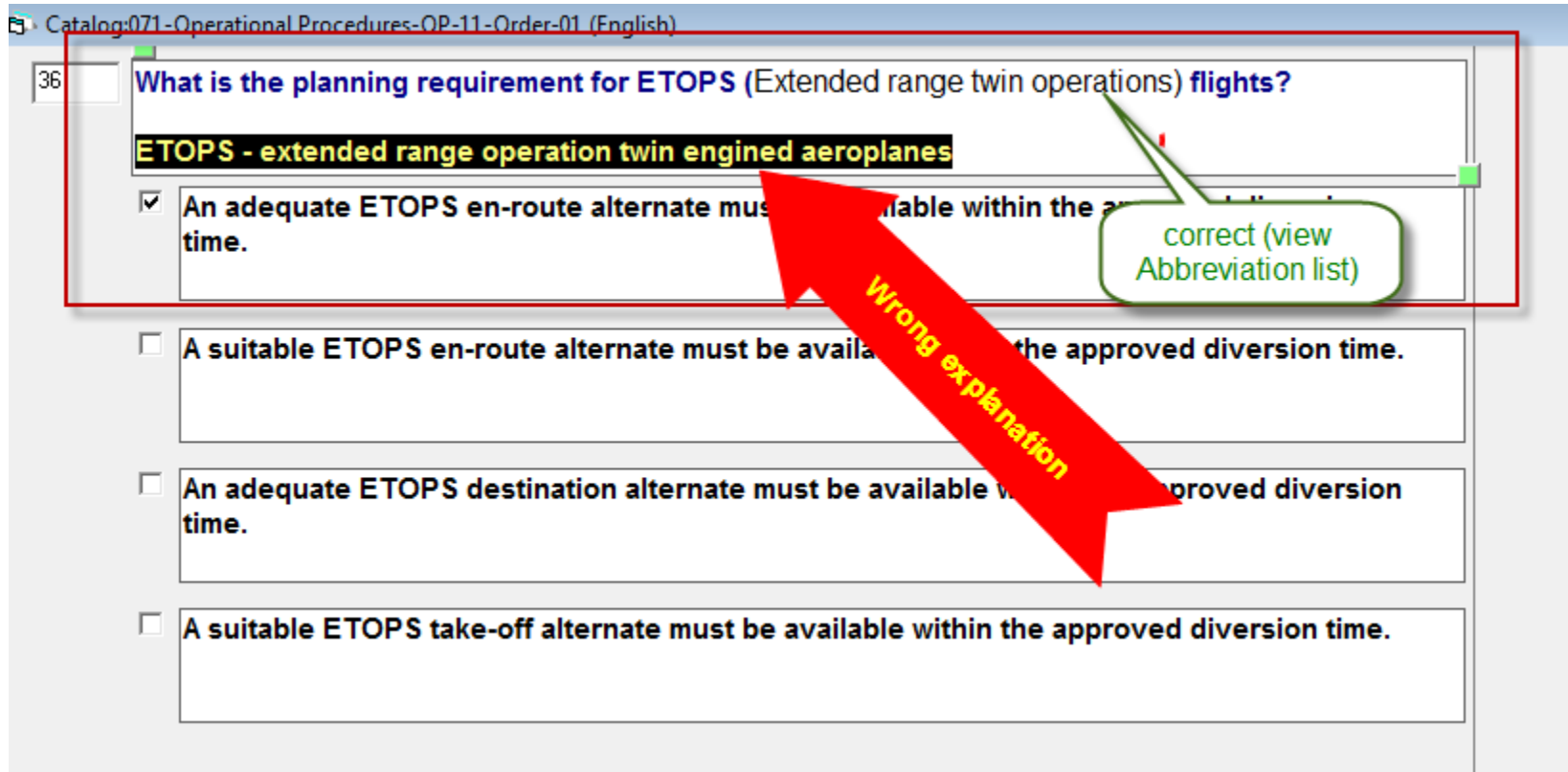
A suitable ETOPS en-route alternate must be available within the approved diversion time.

An adequate ETOPS destination alternate must be available within the approved diversion time.

A suitable ETOPS take-off alternate must be available within the approved diversion time.

correct (view Abbreviation list)

Wrong explanation



Clear question (no doubts about)

18 In general, when leaning the mixture of a piston engine...

- A) the EGT rises
- B) more air is added
- C) the fuel flow increases
- D) the CHT decreases

Check if applicable to diesel engines if not insert petrol before piston engine



Clear question (no doubts about)

Catalog:071-Operational Procedures-OP-11-Order-01 (English)

3 What is the minimum instrumentation / equipment that shall be installed for single pilot day VFR (Visual Flight Rules) operations with a small aeroplane?

- one alternate source of static pressure
- Radio Altimeter
- Attitude Indicator
- Chart holder

avoid unclear elements in questions

answers not homogenous, too eays!

Catalog:071-Operational Procedures-OP-11-Order-01 (English)

1 When shall an aeroplane be equipped with navigation/position lights?

For flights by...

- ~~for flights by~~ day and by night
- ~~for flights by~~ day
- ~~for flights by~~ night
- ~~for flights~~ in VMC (Visual Meteorological Conditions)

avoid unclear elements in question text!!

abbreviations have to be explained (considering the agreed abbreviation list!)

Clear question (no doubts about)

Catalog:071-Operational Procedures-OP-11-Order-01 (English)

15 A CVR (Cockpit Voice Recorder) shall be capable of retaining information recorded during its operation.

What is the timespan that must be recorded?

- 2 hours / 30 minutes
- 25 hours
- 10 hours
- 10 hours / 60 minutes

what is meaning of the slash "/"?

Catalog:071-Operational Procedures-OP-11-Order-01 (English)

1 When shall an aeroplane be equipped with navigation/position lights?

unklar "and/or"?

- for flights by day and by night
- for flights by day
- for flights by night
- for flights in VMC

References to official docs

Catalog:071-Operational Procedures-OP-11-Order-01 (English)

51 What is the minimum height at which noise abatement departure procedures (NADP 1/2) may be initiated?

ICAO Doc 8168: NADP 1 / NADP 2 Documents missing!

- 150 m (500 ft) above aerodrome elevation
- 120 m (400 ft) above aerodrome elevation
- 240 m (800 ft) above aerodrome elevation
- when obstacle clearance of 90 m (300 ft) is achieved

Must students know the content of the referenced documents?

No industrial product names

87 Wake turbulence separation minima shall be based on a grouping of aircraft types into categories according to the maximum certificated take-off mass (MCTOM).

What is the wake turbulence category of a Cessna CJ1+ "Citation" with a MCTOM of 4.850 kg?

- A) HEAVY
- B) MEDIUM
- C) LIGHT
- D) SUPER

14 A critical area is ...

- A) situated in front of the runway where the wake turbulence of large craft are allowed
- B) an area around the runway where no craft are permitted to drive, in order to keep a safe distance to the landing aircraft
- C) an area around the LLZ and around the GP antenna, in which the presence of aircraft or other craft causes disturbances of the ILS signal
- D) for an approaching B747 aircraft much larger for an approaching B747 aircraft than for a small aircraft, because of the more precise execution of the approach of a the larger bigger aircraft

Order-2-1	ok	not ok		ok	not ok		ok	not ok
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86 Wake turbulence separation minima shall be based on a grouping of aircraft types into categories according to the maximum certificated take-off mass (MCTOM).

What is the wake turbulence category of a B737-300 with a MCTOM of 57,6 t?

- A) HEAVY
- B) MEDIUM
- C) LIGHT
- D) SUPER

..a wide body...



PLEASE Use the checklists

OP-11



3. General Checklist Multiple-choice

OP-11	General Checklist Multiple-choice
Item	Check
Learning Objective(s)	<input type="checkbox"/> Identification of the assigned learning objective(s)
Relevance to Syllabus:	<input type="checkbox"/> Consistency between proposed question and Module/Subject <input type="checkbox"/> Consistency between Category, License <input type="checkbox"/> Part 66: Conformity with examination level
Conformity with question standard	<input type="checkbox"/> Wording of the question in compliance with the setting up methodology <input type="checkbox"/> Format of the question in compliance with the setting up methodology <input type="checkbox"/> Abbreviations in compliance with the setting up methodology <input type="checkbox"/> The use of unit in compliance with international and national rules and style conventions ⁴
Clarity and correctness of the language	The specification ASD-STE-100 (Aerospace and Defence, Industries Association of Europe) European Community Trade Mark No. 004901195) may be used. http://www.asd-europe.org http://www.asd-stan.org/sales/asdocs.asp

OP-11



Wording Checklist Multiple-choice

OP-11	Wording Checklist Multiple-choice
Item	Check
Content	<input type="checkbox"/> Is the question really relevant? <input type="checkbox"/> Is the knowledge level adequate? <input type="checkbox"/> Is the content indisputable? <input type="checkbox"/> Is the information sufficient? <input type="checkbox"/> Is the wording clear and unequivocal? <input type="checkbox"/> Are all abbreviations, technical terms and foreign words known by the target group?
Question	<input type="checkbox"/> Can one find the correct answer without reading the alternative answers? <input type="checkbox"/> Are negations highlighted? <input type="checkbox"/> Isn't the Question a catch question?
Answers	<input type="checkbox"/> Is the true answer clearly recognizable? <input type="checkbox"/> Are the false answers plausible and justified? <input type="checkbox"/> Are the choice answers homogeneous with regard to text length and grammar? <input type="checkbox"/> Are double negations avoided? <input type="checkbox"/> Are absolute statements avoided ("always", "all", "never")? <input type="checkbox"/> Are word repetitions avoided from the problem description?
If necessary Embedded diagrams	<input type="checkbox"/> <u>are</u> all graphics available in the correct version? <input type="checkbox"/> <u>are</u> all graphics in readable conditions?
If necessary Annexes	<input type="checkbox"/> <u>are</u> all annexes available in the correct version? <input type="checkbox"/> <u>are</u> all annexes in readable conditions?

