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(Excerpt)

90 – Navigation (Austria)

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1 The rotational axis of the Earth runs through the... (1,00 P.)

- ☑ geographic North Pole and on the geographic South Pole.
- ☐ magnetic north pole and on the geographic South Pole.
- ☐ geographic North Pole and on the magnetic south pole.
- ☐ magnetic north pole and on the magnetic south pole.

2 Which statement is correct with regard to the polar axis of the Earth? (1,00 P.)

- ☑ The polar axis of the Earth crosses the geographic South Pole and the geographic North Pole and is perpendicular to the plane of the equator
- ☐ The polar axis of the Earth crosses the magnetic south pole and the magnetic north pole and is at an angle of 66.5° to the plane of the equator
- ☐ The polar axis of the Earth crosses the magnetic south pole and the magnetic north pole and is perpendicular to the plane of the equator
- ☐ The polar axis of the Earth crosses the geographic South Pole and the geographic North Pole and is at an angle of 23.5° to the plane of the equator

3 Which approximate, geometrical form describes the shape of the Earth best for navigation systems? (1,00 P.)

- ☑ Ellipsoid
- ☐ Perfect sphere
- ☐ Flat plate
- ☐ Sphere of ecliptical shape

4 Which statement about a rhumb line is correct? (1,00 P.)

- ☐ The center of a complete cycle of a rhumb line is always the Earth's center.
- ☐ A rhumb line is a great circle intersecting the the equator with 45° angle.
- ☑ A rhumb line cuts each meridian at the same angle.
- ☐ The shortest track between two points along the Earth's surface follows a rhumb line.

5 The shortest distance between two points on Earth is represented by a part of... (1,00 P.)

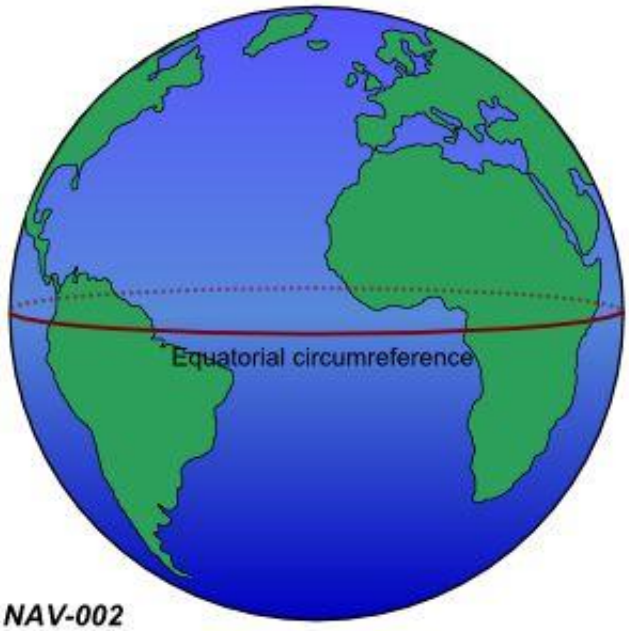
- ☐ a rhumb line.
- ☑ a great circle.
- ☐ a small circle.
- ☐ a parallel of latitude.

6 The circumference of the Earth at the equator is approximately...

See figure (NAV-002) (1,00 P.)

Siehe Anlage 1

- ☐ 12800 km.
- ☑ 21600 NM.
- ☐ 10800 km.
- ☐ 40000 NM.



NAV-002

7 What is the difference in latitude between A (12°53'30''N) and B (07°34'30''S)? (1,00 P.)

- ☐ 05°19'00''
- ☑ 20°28'00''
- ☐ 20,28°
- ☐ 05,19°

8 Where are the two polar circles? (1,00 P.)

- ☐ 20.5° south of the poles
- ☐ At a latitude of 20.5°S and 20.5°N
- ☑ 23.5° north and south of the poles
- ☐ 23.5° north and south of the equator

9 What is the distance between the parallels of latitude 48°N and 49°N along a meridian line? (1,00 P.)

- ☑ 60 NM
- ☐ 111 NM
- ☐ 1 NM
- ☐ 10 NM

10 What distance corresponds to one degree difference in latitude along any degree of longitude? (1,00 P.)

- ☐ 30 NM
- ☐ 1 NM
- ☑ 60 NM
- ☐ 60 km

11 Point A on the Earth's surface lies exactly on the parallel of latitude of 47°50'27''N.

Which point is exactly 240 NM north of A? (1,00 P.)

- ☐ 43°50'27''N
- ☐ 53°50'27''N
- ☐ 49°50'27''N
- ☑ 51°50'27'N'

12 What is the distance between the two parallels of longitude 150°E and 151°E along the equator? (1,00 P.)

- ☐ 60 km
- ☐ 111 NM
- ☐ 1 NM
- ☑ 60 NM

13 What is the great circle distance between two points A and B on the equator when the difference between the two associated meridians is exactly one degree of longitude? (1,00 P.)

- ☐ 120 NM
- ☑ 60 NM
- ☐ 400 NM
- ☐ 216 NM

14 Assume two arbitrary points A and B on the same parallel of latitude, but not on the equator. Point A is located on 010°E and point B on 020°E.

The rumb line distance between A and B is always... (1,00 P.)

- ☐ more than 600 NM.
- ☐ less than 300 NM.
- ☐ more than 300 NM.
- ☑ less than 600 NM.

15 What is the difference in time when the sun moves 20° of longitude? (1,00 P.)

- ☐ 0:20 h
- ☑ 1:20 h
- ☐ 1:00 h
- ☐ 0:40 h

16 What is the difference in time when the sun moves 10° of longitude? (1,00 P.)

- ☐ 0:04 h
- ☐ 0:30 h
- ☑ 0:40 h
- ☐ 1:00 h

17 The sun moves 10° of longitude. What is the difference in time? (1,00 P.)

- ☐ 0.4 h
- ☑ 0.66 h
- ☐ 1 h
- ☐ 0.33 h

18 On which position is the DVOR/DME Salzburg located?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ S48°00`, W012°53`.
- ☐ N48°00`, E014°00´.
- ☐ S48°00`, E013°07`.
- ☑ N48°00`, E012°53`.

19 With Central European Summer Time (CEST) given as UTC+2, what UTC time corresponds to 1600 CEST? (1,00 P.)

- ☐ 1700 UTC.
- ☑ 1400 UTC.
- ☐ 1500 UTC.
- ☐ 1600 UTC.

20 On which position is the NDB Salzburg (SBG) located?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ N47°57', E013°00'.
- ☑ N47°58', E012°54'.
- ☐ N48°14', E012°59'.
- ☐ N47°49', E012°59'.

21 On which position is the Aerodrome of Kirchdorf/Inn (EDNK) located?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☑ N48°14', E012°59'.
- ☐ N47°49', E012°59'.
- ☐ N47°47', E013°00'.
- ☐ N47°48', E012°53'.

22 UTC is... (1,00 P.)

- ☐ a local time in Central Europe.
- ☑ an obligatory time used in aviation.
- ☐ local mean time at a specific point on Earth.
- ☐ a zonal time.

23 On which position is Airport Linz (LOWL) located?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ N48°13', E014°06'.
- ☐ N48°10', E014°02'.
- ☑ N48°14', E014°11'.
- ☐ N48°12', E013°20'.

24 With Central European Time (CET) given as UTC+1, what UTC time corresponds to 1700 CET?
(1,00 P.)

- ☐ 1700 UTC.
- ☐ 1500 UTC.
- ☐ 1800 UTC.
- ☑ 1600 UTC.

25 On which position is the DVOR/DME Linz (LNZ) located?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ N48°10', E014°02'.
- ☐ N48°12', E013°20'.
- ☑ N48°13', E014°06'.
- ☐ N48°14', E014°11'.

26 On which position is the Airport of Ried-Kirchheim (LOLK) located?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ N48°10', E014°02'.
- ☑ N48°12', E013°20'.
- ☐ N48°14', E014°11'.
- ☐ N48°13', E014°06'.

27 What is located at N48°00', E013°16'?

See Annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ A city.
- ☐ A peak.
- ☐ A village.
- ☑ A compulsory reporting point.

28 What is located at N47°57', E013°13'?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ A compulsory reporting point.
- ☐ A city.
- ☑ A village.
- ☐ A peak.

29 Vienna (LOWW) is located at 016° 34'E, Salzburg (LOWS) at 013° 00'E. The latitude of both positions can be considered as equal.

What is the difference of sunrise and sunset times, expressed in UTC, between Wien and Salzburg? (2,00 P.)

- ☑ In Vienna the sunrise and sunset are about 14 minutes earlier than in Salzburg
- ☐ In Vienna the sunrise is 14 minutes earlier and sunset is 14 minutes later than in Salzburg
- ☐ In Vienna the sunrise is 4 minutes later and sunset is 4 minutes earlier than in Salzburg
- ☐ In Vienna the sunrise and sunset are about 4 minutes later than in Salzburg

30 What is located at N47°53', E013°38'?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ A compulsory reporting point.
- ☐ A city.
- ☑ A peak.
- ☐ A village.

31 The term 'civil twilight' is defined as... (1,00 P.)

- ☐ the period of time before sunrise or after sunset where the midpoint of the sun disk is 12 degrees or less below the true horizon.
- ☐ the period of time before sunrise or after sunset where the midpoint of the sun disk is 6 degrees or less below the apparent horizon.
- ☑ the period of time before sunrise or after sunset where the midpoint of the sun disk is 6 degrees or less below the true horizon.
- ☐ the period of time before sunrise or after sunset where the midpoint of the sun disk is 12 degrees or less below the apparent horizon.

32 Given:
WCA: -012°; TH: 125°; MC: 139°; DEV: 002°E

What are: TC, MH und CH?
(2,00 P.)

☐ TC: 113°.
MH: 127°.
CH: 129°.

☑ TC: 137°.
MH: 127°.
CH: 125°.

☐ TC: 137°.
MH: 139°.
CH: 125°.

☐ TC: 113°.
MH: 139°.
CH: 129°.

33 Given:
TC: 179°; WCA: -12°; VAR: 004° E; DEV: +002°

What are MH and MC?
(1,00 P.)

☑ MH: 163°.
MC: 175°.
☐ MH: 163°.
MC: 161°.
☐ MH: 167°.
MC: 161°.
☐ MH: 167°.
MC: 175°.

34 The angle between the true course and the true heading is called... (1,00 P.)

☐ inclination.
☐ variation.
☑ WCA.
☐ deviation.

35 The angle between the magnetic course and the true course is called... (1,00 P.)

☐ inclination.
☐ deviation.
☐ WCA.
☑ variation.

36 The term ‚magnetic course' (MC) is defined as... (1,00 P.)

- ☐ the direction from an arbitrary point on Earth to the magnetic north pole.
- ☐ the angle between true north and the course line.
- ☐ the direction from an arbitrary point on Earth to the geographic North Pole.
- ☑ the angle between magnetic north and the course line.

37 The term 'True Course' (TC) is defined as... (1,00 P.)

- ☐ the direction from an arbitrary point on Earth to the magnetic north pole.
- ☐ the direction from an arbitrary point on Earth to the geographic North Pole.
- ☑ the angle between true north and the course line.
- ☐ tthe angle between magnetic north and the course line.

38 Given:
TC: 183°; WCA: +011°; MH: 198°; CH: 200°

What are TH and VAR?
(2,00 P.)

- ☐ TH: 194°.
  VAR: 004° E
- ☐ TH: 172°.
  VAR: 004° W
- ☐ TH: 172°.
  VAR: 004° E
- ☑ TH: 194°.
  VAR: 004° W

39 Given:
TC: 183°; WCA: +011°; MH: 198°; CH: 200°

What are the TH and the DEV?
(2,00 P.)

- ☐ TH: 194°.
  DEV: +002°.
- ☐ TH: 172°.
  DEV: +002°.
- ☐ TH: 172°.
  DEV: -002°.
- ☑ TH: 194°.
  DEV: -002°.

40 Given:
TC: 183°; WCA: +011°; MH: 198°; CH: 200°

What are the VAR and the DEV?
(2,00 P.)

- ☐ VAR: 004° E.
  DEV: -002°.
- ☐ VAR: 004° W.
  DEV: +002°.
- ☐ VAR: 004° E.
  DEV: +002°.
- ☑ VAR: 004° W.
  DEV: -002°.

41 Where does the inclination reach its lowest value?
(1,00 P.)

- ☑ At the magnetic equator
- ☐ At the magnetic poles
- ☐ At the geographic poles
- ☐ At the geographic equator

42 The angle between compass north and magnetic north is called... (1,00 P.)

- ☐ inclination.
- ☐ variation.
- ☑ deviation.
- ☐ WCA.

43 Which direction corresponds to 'compass north' (CN)? (1,00 P.)

- ☐ The angle between the aircraft heading and magnetic north
- ☐ The direction from an arbitrary point on Earth to the geographical North Pole
- ☑ The direction to which the direct reading compass aligns due to earth's and aircraft's magnetic fields
- ☐ The most northerly part of the magnetic compass in the aircraft, where the reading takes place

44 The term 'isogonal' or 'isogonic line' is defined as a line on an aeronautical chart, connecting all points with the same value of... (1,00 P.)

- ☐ inclination.
- ☐ heading.
- ☑ variation.
- ☐ deviation.

45 The term 'agonic line' is defined as a line on Earth or an aeronautical chart, connecting all points with the... (1,00 P.)

- ☐ heading of 0°.
- ☑ variation of 0°.
- ☐ inclination of 0°.
- ☐ deviation of 0°.

46 Which are the official basic units for horizontal distances used in aeronautical navigation and their abbreviations? (1,00 P.)

- ☐ Land miles (SM), sea miles (NM)
- ☑ Nautical miles (NM), kilometers (km)
- ☐ feet (ft), inches (in)
- ☐ Yards (yd), meters (m)

47 1000 ft equal... (1,00 P.)

- ☐ 30 km.
- ☐ 30 m.
- ☐ 3000 m.
- ☑ 300 m.

48 5500 m equal... (1,00 P.)

- ☐ 7500 ft.
- ☐ 10000 ft.
- ☑ 18000 ft.
- ☐ 30000 ft.

49 Which of the items on the attached checklist are related to the direct reading compass?

See annex (NAV-004) (1,00 P.)

Siehe Anlage 3

- ☐ "Turning Instruments" only
- ☐ "Gyro" and "Circuit Breaker"
- ☐ "Turning Instruments" and "Circuit Breaker"
- ☑ "Gyro" and "Turning Instruments"

50 What could be a reason for changing the runway indicators at aerodromes (e.g. from runway 06 to runway 07)? (1,00 P.)

- ☐ The true direction of the runway alignment has changed
- ☐ The magnetic deviation of the runway location has changed
- ☐ The direction of the approach path has changed
- ☑ The magnetic variation of the runway location has changed

51 Electronic devices on board of an aeroplane have influence on the... (1,00 P.)

- ☐ airspeed indicator.
- ☐ artificial horizon.
- ☐ turn coordinator.
- ☑ direct reading compass.

52 Which are the properties of a Mercator chart? (1,00 P.)

- ☐ The scale is constant, great circles are depicted as straight lines, rhumb lines are depicted as curved lines
- ☐ The scale is constant, great circles are depicted as curved lines, rhumb lines are depicted as straight lines
- ☐ The scales increases with latitude, great circles are depicted as straight lines, rhumb lines are depicted as curved lines
- ☑ The scales increases with latitude, great circles are depicted as curved lines, rhumb lines are depicted as straight lines

53 How are rhumb lines and great circles depicted on a direct Mercator chart? (1,00 P.)

- ☐ Rhumb lines: curved lines
  Great circles: straight lines
- ☑ Rhumb lines: straight lines
  Great circles: curved lines
- ☐ Rhumb lines: curved lines
  Great circles: curved lines
- ☐ Rhumb lines: straight lines
  Great circles: straight lines

54 Which are the properties of a Lambert conformal chart? (1,00 P.)

- ☐ Rhumb lines are depicted as straight lines and the chart is conformal
- ☐ Great circles are depicted as straight lines and the chart is an equal-area projection
- ☐ The chart is conformal and an equal-area projection
- ☑ The chart is conformal and nearly true to scale

55 Which lines have to be used by the pilot to determine the aircraft's position? (1,00 P.)

- ☑ True bearings (QTE)
- ☐ Magnetic bearings (QDR)
- ☐ Magnetic headings (MH)
- ☐ Relative bearings (RB)

56 The distance between two airports is 220 NM.
On an aeronautical navigation chart the pilot measures 40.7 cm for this distance.

The chart scale is... (1,00 P.)

- ☐ 1 : 500000.
- ☐ 1 : 2000000.
- ☑ 1 : 1000000.
- ☐ 1 : 250000.

57 A distance of 7.5 cm on an aeronautical chart represents a distance of 60.745 NM in reality.

What is the chart scale? (1,00 P.)

- ☐ 1 : 500000
- ☐ 1 : 1 000000
- ☐ 1 : 150000
- ☑ 1 : 1500000

58 For a short flight from A to B the pilot extracts the following information from an aeronautical chart:
True course: 245°.
Magnetic variation: 7° W

The magnetic course (MC) equals... (1,00 P.)

- ☑ 252°.
- ☐ 245°.
- ☐ 007°.
- ☐ 238°.

59 An aircraft is flying with an indicated airspeed (IAS) of 150 kt at 8000 ft MSL.

According to the rule of thumb, the true airspeed (TAS) equals... (1,00 P.)

- ☑ 174 kt.
- ☐ 208 kt.
- ☐ 142 kt.
- ☐ 150 kt.

60 Given:
True course from A to B: 250°.
Ground distance: 210 NM.
TAS: 130 kt.
Headwind component: 15 kt.
Estimated time of departure (ETD): 0915 UTC.

The estimated time of arrival (ETA) is... (2,00 P.)

- ☐ 1005 UTC.
- ☑ 1105 UTC.
- ☐ 1052 UTC.
- ☐ 1115 UTC.

61 Given:
True course from A to B: 283°.
Ground distance: 75 NM.
TAS: 105 kt.
Headwind component: 12 kt.
Estimated time of departure (ETD): 1242 UTC.

The estimated time of arrival (ETA) is... (1,00 P.)

- ☐ 1356 UTC
- ☐ 1320 UTC

- ☐ 1430 UTC
- ☑ 1330 UTC

62 Given:
True course from A to B: 352°.
Ground distance: 100 NM.
GS: 107 kt.
Estimated time of departure (ETD): 0933 UTC.

The estimated time of arrival (ETA) is...

(1,00 P.)

- ☑ 1029 UTC.

- ☐ 1045 UTC.

- ☐ 1129 UTC.

- ☐ 1146 UTC.

63 An aircraft travels 100 km in 56 minutes.

The ground speed (GS) equals...

(1,00 P.)

- ☑ 107 km/h.
- ☐ 93 kt.
- ☐ 58 km/h.
- ☐ 198 kt.

64 An aircraft travels 110 NM within 01:25.

The ground speed (GS) equals...

(1,00 P.)

- ☐ 86 kt.
- ☑ 78 kt.
- ☐ 120 km/h.
- ☐ 160 km/h.

65 What is the required flight time for a distance of 236 NM with a ground speed of 134 kt? (1,00 P.)

- ☐ 1:34 h
- ☑ 1:46 h
- ☐ 0:34 h
- ☐ 0:46 h

66 What is located at a distance of 19 NM on radial 065 of the LNZ VOR/DME?

See annex (NAV-005) (1,00 P.)

Siehe Anlage 4

- ☐ A sight (castle).
- ☐ A railway line and a small river.
- ☐ The village Gallneukirchen.
- ☑ The village Pregarten.

67 An aircraft is flying with a true airspeed (TAS) of 120 kt and experiences 35 kt tailwind.

How much time is needed for a distance of 185 NM?

(1,00 P.)

- ☑ 1 h 12 min
- ☐ 2 h 11 min
- ☐ 0 h 50 min
- ☐ 1 h 32 min

68 On what parallel of latitude is the DVOR/DME Salzburg located?

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ 50°N.
- ☐ 13°N.
- ☐ 48°S.
- ☑ 48°N.

69 An aircraft is flying with a true airspeed (TAS) of 180 kt and a headwind component of 25 kt for 2 hours and 25 minutes.

The distance flown equals... (1,00 P.)

- ☐ 202 NM.
- ☐ 435 NM.
- ☑ 375 NM.
- ☐ 693 NM.

70 Which answer states the radio navigation aids of Graz airport?

See annex (NAV-018) (1,00 P.)

Siehe Anlage 5

- ☑ NDB GRZ 290 kHz.
  VOR/DME GRZ 116.200 MHz.
- ☐ Transmitter Dobl 1 660 kHz.
  VOR/DME GRZ 116.200 kHz.
- ☐ Kalsdorf NDB 116,200 kHz.
  Transmitter Dobl 1 660 kHz.
- ☐ NDB GRZ 290 MHz.
  VOR/DME GRZ 116.200 MHz.

71 The true course from Ried-Kirchheim (LOLK) to Scharnstein (LOLC) equals:

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☐ 308°.
- ☑ 128°.
- ☐ 140°.
- ☐ 180°.

72 Given:

Calibrated airspeed (CAS): 155 kt.
Flight level (FL) 80.
Outside air temperature (OAT): +15° C.

The true airspeed (TAS) equals... (1,00 P.)

- ☐ 134 kts.
- ☐ 170 kts.
- ☐ 155 kts.
- ☑ 180 kts.

73 An aircraft is flying at aFL 75
with an outside air temperature (OAT) of -9°C.
The QNH altitude is 6500 ft.

The true altitude equals... (1,00 P.)

- ☑ 6250 ft.
- ☐ 7000 ft.
- ☐ 6750 ft.
- ☐ 6500 ft.

74 The distance from Weiz Unterfladnitz (LOGW) to Punitz Güssing (LOGG) equals:

See annex (NAV-009) (1,00 P.)

Siehe Anlage 6

- ☐ 15 NM.
- ☐ 72 NM.
- ☑ 27 NM.
- ☐ 51 NM.

75 The true course from Fürstenfeld (LOGF) to Weiz Unterfladnitz (LOGW) equals:

See annex (NAV-009) (1,00 P.)

Siehe Anlage 6

- ☐ 275°.
- ☐ 111°.
- ☑ 291°.
- ☐ 299°.

76 An aircraft is flying at a pressure altitude of 7000 feet with an outside air temperature (OAT) of +11°C. The QNH altitude is 6500 ft.

The true altitude equals... (1,00 P.)

- ☐ 6250 ft.
- ☐ 7000 ft.
- ☐ 6500 ft.
- ☑ 6750 ft.

77 The true course from Wels (LOLW) to Kirchdorf Inn (EDNK) is:

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

- ☑ 274°.
- ☐ 268°.
- ☐ 288°.
- ☐ 247°.

78 An aircraft is flying at a pressure altitude of 7000 feet with an outside air temperature (OAT) of +21°C. The QNH altitude is 6500 ft.

The true altitude equals...
(1,00 P.)

- ☐ 6250 ft.
- ☐ 6750 ft.
- ☑ 7000 ft.
- ☐ 6500 ft.

79 You are planning a VFR flight from Salzburg (LOWS) to Linz (LOWL). The variation equals 3°E, the groundspeed reads 120 kts.

Determine the direct distance in NM (overhead-overhead).

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

☐ 101 km.

☑ 55 NM.

☐ 101 NM.

☐ 55 km.

80 You are planning a VFR flight from Salzburg (LOWS) to Linz (LOWL). The variation equals 3°E, the groundspeed reads 120 kts.

Determine the flight time for the direct track:

See annex (NAV-008) (1,00 P.)

Siehe Anlage 2

☐ 1 hour 58 minutes.
☐ 18 minutes 13 seconds.
☐ 2 hours 12 minutes.
☑ 27 minutes 15 seconds.

81 Given:
True course: 255°.
TAS: 100 kt.
Wind: 200°/10 kt.

The true heading equals... (1,00 P.)

☑ 250°.
☐ 275°.
☐ 245°.
☐ 265°.

82 A pilot is planning a VFR flight from Murska Sobota (LJMS) to Weiz/Unterfladnitz (LOGW) via the NDB Gleichenberg (GBG). The true airspeed (TAS) reads 100 kts, the mean variation (VAR) is 3°E. The calculation is based on overhead-overhead, disregard wind, climb and descent.

What is the total distance:

See annex (NAV-009) (1,00 P.)

Siehe Anlage 6

- ☐ 40 km.
- ☐ 74 km.
- ☐ 74 NM.
- ☑ 40 NM.

83 Given:
True course: 165°.
TAS: 90 kt.
Wind: 130°/20 kt.
Distance: 153 NM.

The true heading equals... (1,00 P.)

- ☐ 165°.
- ☑ 158°.
- ☐ 126°.
- ☐ 152°.

84 A pilot is planning a VFR flight from Murska Sobota (LJMS) to Weiz/Unterfladnitz (LOGW) via the NDB Gleichenberg (GBG). The true airspeed (TAS) reads 100 kts, the mean variation (VAR) is 3°E. The calculation is based on overhead-overhead, disregard wind, climb and descent.

What are the magnetic courses (MC)?

See annex (NAV-009) (1,00 P.)

Siehe Anlage 6

- ☑ MC LJMS > GBG: 313°.
  MC GBG > LOGW: 339°.
- ☐ MC LJMS > GBG: 316°.
  MC GBG > LOGW: 339°.
- ☐ MC LJMS > GBG: 313°.
  MC GBG > LOGW: 342°.
- ☐ MC LJMS > GBG: 316°.
  MC GBG > LOGW: 342°.

85 Given:
Ground speed (GS): 160 kt.
True course (TC): 177°.
Wind vector (W/WS): 140°/20 kt.

The true heading (TH) equals...

(1,00 P.)

☐ 169°.
☐ 184°.
☑ 173°.
☐ 180°.

86 A pilot is planning a VFR flight from Ferlach-Glainach (LOKG) to Feldkirchen/Ossiacher See (LOKF) via reporting point Whiskey One (W1). The groundspeed (GS) reads 100 kts, the mean variation (VAR) is 3°E. The calculation is based on overhead-overhead, disregard wind, climb and descent.

What is the total distance?

See annex (NAV-010) (1,00 P.)

Siehe Anlage 7

☐ 30 NM.

☐ 30 km.

☑ 16 NM.

☐ 16 km.

87 A pilot is planning a VFR flight from Ferlach-Glainach (LOKG) to Feldkirchen/Ossiacher See (LOKF) via reporting point Whiskey One (W1). The groundspeed (GS) reads 100 kts, the mean variation (VAR) is 3°E. The calculation is based on overhead-overhead, disregard wind, climb and descent.

What is the total flight time?

See annex (NAV-010) (1,00 P.)

Siehe Anlage 7

☐ 7 min.

☐ 16 min.

☑ 10 min.
☐ 5 min.

88 An aircraft is following a true course (TC) of 220° at a constant TAS of 220 kt. The wind vector is 270°/50 kt.

The ground speed (GS) equals...

(1,00 P.)

☐ 170 kt.

☐ 255 kt.

☐ 135 kt.

☑ 185 kt.

89 An aircraft is following a true course (TC) of 040° at a constant true airspeed (TAS) of 180 kt. The wind vector is 350°/30 kt.

The groundspeed (GS) equals...
(1,00 P.)

☐ 155 kt.

☑ 159 kt.

☐ 168 kt.

☐ 172 kt.

90 The pilot is planning a direct flight from Zeltweg (LOXZ) to Trieben (LOGI). The variation equals 2°E.

What is the magnetic course (MC)?

See annex (NAV-011)
(1,00 P.)

Siehe Anlage 8

☐ 148°.

☐ 332°.

☐ 152°.

☑ 328°.

91 An aircraft is following a true course (TC) of 040° at a constant true airspeed (TAS) of 180 kt. The wind vector is 350°/30 kt.

The wind correction angle (WCA) equals...

(1,00 P.)

☐ + 5°
☐ + 11°
☐ - 9°

☑ - 7°

92 The pilot is planning a direct flight from Zeltweg (LOXZ) to Trieben (LOGI). The variation equals 2°E.

What is the highest point along the track at a lateral distance of plus / minus 5 NM?

See annex (NAV-011)
(1,00 P.)

Siehe Anlage 8

☐ 7 864 ft.
☐ 7 667 ft.
☑ 7 926 ft.
☐ 7 693 ft.

93 The first leg of a VFR Flight heads from Wiener Neustadt (LOAN) to the Tulln VOR (TUN 111.4 Mhz). The true airspeed (TAS) reads 140 kts, the variation (VAR) is 2°E, the wind is 090°/30 kt.

What is the magnetic course (MC)?

See annex (NAV-012) (1,00 P.)

Siehe Anlage 9

☑ 336°.
☐ 160°.

☐ 340°.

☐ 156°.

94 Given:
True course: 270°.
TAS: 100 kt.
Wind: 090°/25 kt.
Distance: 100 NM.
The ground speed (GS) equals... (1,00 P.)

☐ 120 kt.

☐ 131 kt.

☑ 125 kt.

☐ 117 kt.

95 The first leg of a VFR Flight heads from Wiener Neustadt (LOAN) to the Tulln VOR (TUN 111.4 Mhz). The true airspeed (TAS) reads 140 kts, the variation (VAR) is 2°E, the wind is 090°/30 kt.

What is the total distance ?

See annex (NAV-012) (1,00 P.)

Siehe Anlage 9

☐ 55 NM.
☑ 30 NM.
☐ 30 km.
☐ 48 km.

96 Given:
True course: 270°.
TAS: 100 kt.
Wind: 090°/25 kt.
Distance: 100 NM.

The flight time equals... (1,00 P.)

☑ 48 Min.

☐ 37 Min.

☐ 62 Min.

☐ 84 Min.

97 An aircraft is following a true course (TC) of 040° at a constant true airspeed (TAS) of 180 kt. The wind vector is 350°/30 kt.

The wind correction angle (WCA) equals...

(1,00 P.)

- ☑ 7° left.
- ☐ 7° right.
- ☐ 3° left.
- ☐ 3° right.

98 You are planning a VFR flight from St.Georgen (LOLG) to Krems-Langenlois (LOAG). The variation (VAR) equals 2°E, the groundspeed reads 110 kt.

What is the total distance?

See annex (NAV-013) (1,00 P.)

Siehe Anlage 10

- ☐ 65 NM.
- ☑ 35 NM.
- ☐ 35 km.
- ☐ 61 km.

99 Given:
True course: 120°.
TAS: 120 kt.
Wind: 150°/12 kt.

The WCA equals... (1,00 P.)

- ☐ 6° to the right.
- ☑ 3° to the right.
- ☐ 6° to the left.
- ☐ 3° to the left.

100 A pilot is flying from Krems-Langenlois (LOAG) to St. Georgen am Ybbsfeld (LOLG). The aeroplane has a TAS of 100 kt and the wind is 250°/15 kt.

What is the flight time?

See annex (NAV-013) (1,00 P.)

Siehe Anlage 10

- ☐ Flight time: 32 min.
- ☐ Flight time: 19 min.
- ☐ Flight time: 29 min.
- ☑ Flight time: 24 min.

101 The distance from 'A' to 'B' measures 120 NM. At a distance of 55 NM from 'A' the pilot realizes a deviation of 7 NM to the right.

What approximate course change must be made to reach 'B' directly?

(1,00 P.)

- ☑ 14° left
- ☐ 8° left
- ☐ 6° left
- ☐ 15° left

102 An aeroplane has a heading of 090°. The distance which has to be flown is 90 NM. After 45 NM the aeroplane is 4.5 NM north of the planned flight path.

What is the corrected heading to reach the arrival aerodrome directly? (1,00 P.)

- ☐ 18° to the right
- ☑ 12° to the right
- ☐ 9° to the right
- ☐ 6° to the right

103 What is the meaning of the 1:60 rule?

(1,00 P.)

- ☐ 6 NM lateral offset at 1° drift after 10 NM
- ☐ 60 NM lateral offset at 1° drift after 1 NM
- ☐ 10 NM lateral offset at 1° drift after 60 NM
- ☑ 1 NM lateral offset at 1° drift after 60 NM

104 An aircraft is flying from 'A' to 'B' (distance 220 NM) at an average ground speed (GS) of 120 kt. It departs 'A' at 1200 UTC. After 70 NM along the course from 'A', the aircraft is 5 min ahead of the planned schedule.

Using the actual GS, what is the revised estimated time of arrival (ETA) at B?

(1,00 P.)

- ☐ 1340 UTC
- ☐ 1345 UTC
- ☑ 1335 UTC
- ☐ 1330 UTC

105 Assume calm wind and an aircraft descending from 9000 ft to 1500 ft. The rate of descent (ROD) equals 1200 ft/min.

The elapsed time will be... (1,00 P.)

- ☐ 8 min.
- ☐ 15 min.
- ☐ 12 min.

- ☑ 6 min.

106 Assume zero wind and an aircraft descending from 7500 ft to 1200 ft with an average true airspeed (TAS) during the descent of 105 kt. The rate of descent (ROD) equals 800 ft/min.

The elapsed time will be... (1,00 P.)

- ☑ 8 Min.
- ☐ 6 Min.
- ☐ 15 Min.
- ☐ 12 Min.

107 Which answer completes the flight plan (marked cells)?

See annex (NAV-014) (3,00 P.)

Siehe Anlage 11

- ☐ TH: 173°.
  MH: 184°.
  MC: 178°.
- ☐ TH: 185°.
  MH: 185°.
  MC: 180°.
- ☐ TH: 173°.
  MH: 174°.
  MC: 178°.
- ☑ TH: 185°.
  MH: 184°.
  MC: 178°.

108 What radio navigation aid can be received with the attached aerial?

See figure (NAV-017) (1,00 P.)

Siehe Anlage 12

- ☐ DME
- ☑ NDB
- ☐ VDF
- ☐ VOR

109 The approximate propagation speed of electromagnetic waves is... (1,00 P.)

- ☑ 300000 km/s.
- ☐ 300000 ft/s.
- ☐ 300000 NM/s.
- ☐ 300000 m/s.

110 Radio waves within the LF and MF range (e.g. NDB) travel as... (1,00 P.)

- ☐ space wave (quasi-optical).
- ☑ sky wave and as ground / surface wave.
- ☐ ground / surface wave.
- ☐ sky wave.

111 Radio waves within the VHF range (e.g. VOR) travel as... (1,00 P.)

- ☑ space wave (quasi-optical).

- ☐ sky wave and ground / surface wave.
- ☐ ground / surface wave.
- ☐ sky wave.

112 Quasi-optical waves travel... (1,00 P.)

- ☐ along the surface of the earth, but are absorbed by the sea.
- ☐ through the air and are influenced (e.g. reflected) by the ionosphere.
- ☑ through the air directly from the transmitter to the receiver.
- ☐ along the surface of the earth.

113 A VHF direction finder (VDF) can determine... (1,00 P.)

- ☐ slant ranges.
- ☐ true courses.
- ☐ approach speeds.
- ☑ magnetic bearings.

114 Which equipment is needed on board of an aircraft to use a VHF direction finder (VDF)? (1,00 P.)

- ☐ A VDF receiver
- ☐ A relative bearing indicator (RBI)
- ☐ At least two VHF aerials
- ☑ A VHF radio

115 Given:
QDM: 138°
VAR: 10° E

The QUJ equals... (1,00 P.)

- ☑ 148°.
- ☐ 168°.
- ☐ 318°.
- ☐ 328°.

116 Given:
QTE: 229°
VAR: 10° W

The QDM equals...
(1,00 P.)

- ☐ 049°.
- ☑ 059°.
- ☐ 039°.
- ☐ 239°.

117 Given:
QDR: 022°
VAR: 10° E

The QTE equals...
(1,00 P.)

- ☐ 212°.
- ☑ 032°.
- ☐ 202°.
- ☐ 052°.

118 Given:
QDM: 248°
VAR: 10° W

The QTE is...
(1,00 P.)

- ☐ 078°.
- ☐ 238°.
- ☐ 258°.
- ☑ 058°.

119 Given:
QDR: 067°
VAR: 5° E

The QDM equals...
(1,00 P.)

- ☐ 072°.
- ☐ 257°.
- ☐ 252°.
- ☑ 247°.

120 Given:
QDR: 152°
VAR: 5° W
DEV: 5° E

The QUJ equals... (1,00 P.)

- ☐ 332°.
- ☐ 147°.
- ☐ 317°.
- ☑ 327°.

121 Given:
QTE: 203°
VAR: 10° E

The QDR equals...
(1,00 P.)

- ☑ 193°.
- ☐ 023°.
- ☐ 213°.
- ☐ 013°.

122 Given:
QTE: 248°
VAR: 10° W

The QDR equals...

(1,00 P.)

- ☑ 258°.
- ☐ 078°.
- ☐ 068°.
- ☐ 238°.

123 Given:
QDM: 134°
VAR: 5° W

The QTE equals...

(1,00 P.)

- ☐ 314°.
- ☑ 309°.
- ☐ 129°.
- ☐ 299°.

124 The pilot receives a QDR of 225° from the VDF ground station.

Where is the aircraft located in relation to the ground station?

(1,00 P.)

- ☐ Northeast
- ☑ Southwest
- ☐ Northwest
- ☐ Southeast

125 The term QDR means... (1,00 P.)

- ☐ true bearing from the station to the aircraft.
- ☐ magnetic bearing from the aircraft to the station.
- ☐ true bearing from the aircraft to the station.
- ☑ magnetic bearing from the station to the aircraft.

126 The term QTE means... (1,00 P.)

- ☐ true bearing from the aircraft to the station.
- ☐ magnetic bearing from the aircraft to the station.
- ☑ true bearing from the station to the aircraft.
- ☐ magnetic bearing from the station to the aircraft.

127 A pilot receives a QDR of 135° from the VDF ground station.

Where is the aircraft located in relation to the ground station? (1,00 P.)

- ☐ Southwest.
- ☑ Southeast
- ☐ Northeast
- ☐ Northwest

128 A pilot receives a QDR of 315° from the VDF ground station.

Where is the aircraft located in relation to the ground station? (1,00 P.)

- ☐ Southwest
- ☑ Northwest
- ☐ Northeast
- ☐ Southeast

129 The VDF range depends on... (1,00 P.)

- ☑ the aircraft's altitude.
- ☐ the condition of the ionosphere.
- ☐ the aircraft's speed.
- ☐ the range of the ground / surface wave.

130 Which equipment is needed on board of an aircraft to receive signals from a non-directional beacon (NDB)? (1,00 P.)

- ☐ Secondary surveillance radar (SSR)
- ☑ Automatic direction finder (ADF)
- ☐ Horizontal situation indicator (HSI)
- ☐ Course deviation indicator (CDI)

131 Non-directional beacons (NDBs) transmit within which frequency band? (1,00 P.)

- ☐ Very high frequency (VHF)
- ☑ Low frequency (LF) and medium frequency (MF)
- ☐ Very low frequency (VLF) and low frequency (LF)
- ☐ High frequency (HF)

132 A pilot wants to approach an NDB on QDM 090°. The aircraft flies for about 5 minutes with a magnetic heading (MH) of 095° and the RBI indication of 355°. After 6 minutes the RBI indicates 358°.

Which statement is correct? (1,00 P.)

- ☐ The crosswind component decreased; the pilot has to increase the MH
- ☐ The crosswind component decreased; the pilot has to decrease the MH
- ☑ The crosswind component increased; the pilot has to increase the MH
- ☐ The crosswind component increased; the pilot has to decrease the MH

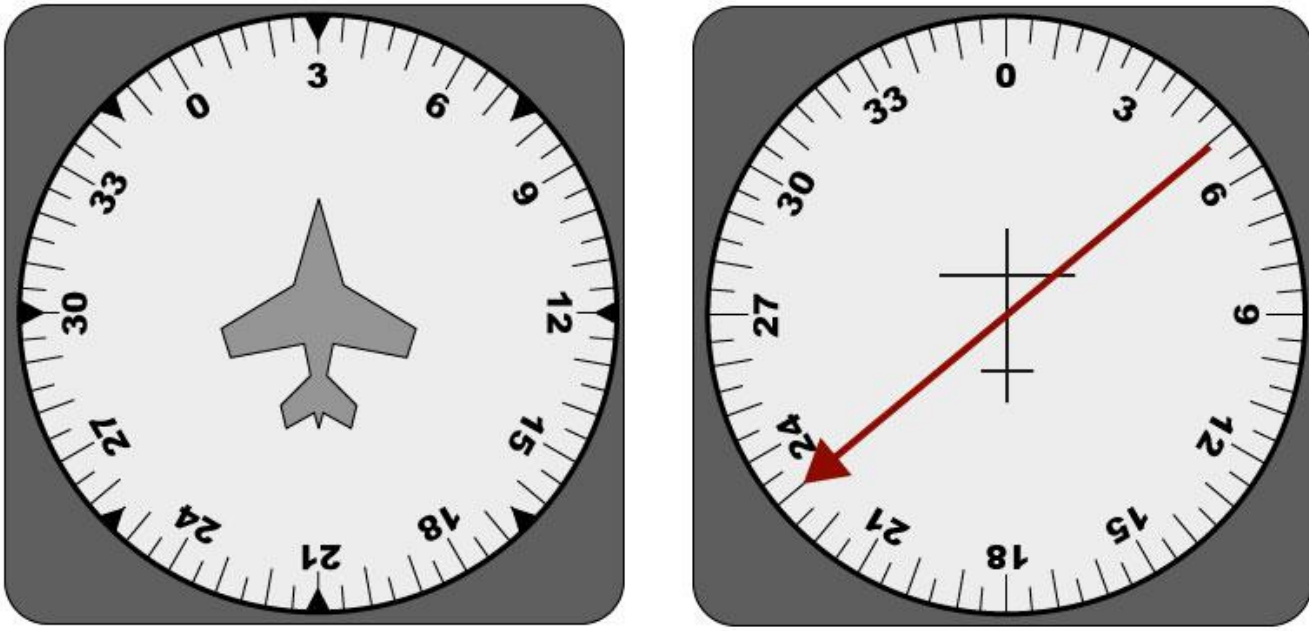
133 The pilot wants to proceed directly to the beacon. The wind is calm.

The pilot should follow a QDM of...

See figure (NAV-019) (1,00 P.)

Siehe Anlage 13

- ☐ 230°.
- ☐ 080°.
- ☑ 260°.
- ☐ 200°.



NAV-019

134 What is the difference between a locator beacon and a non-directional beacon (NDB)? (1,00 P.)

- ☐ Locator beacons transmit on request only
- ☐ Locator beacons transmit more precisely
- ☐ Locator beacons have a higher range than NDBs
- ☑ Locator beacons have a lower range than NDBs

135 The range of NDBs transmitting in the medium frequency range is greatest... (1,00 P.)

- ☐ in the daytime.
- ☐ on midday.
- ☐ before midday.
- ☑ at night.

136 The shoreline effect is greatest with radio wave propagation... (1,00 P.)

- ☐ at an acute angle to the coast; aircraft above 6000 ft.
- ☐ at a right angle to the coast; aircraft above 6000 ft.
- ☑ at an acute angle to the coast; aircraft below 6000 ft.
- ☐ at a right angle to the coast; aircraft below 6000 ft.

137 Fading in LF/MF frequency range occurs mainly... (1,00 P.)

- ☐ at midday.
- ☑ during the night.
- ☐ in the daytime.
- ☐ in the late afternoon.

138 The progress of an electromagnetic oscillation can be described by the... (1,00 P.)

- ☐ wave angle.
- ☐ frequency angle.
- ☑ phase angle.
- ☐ amplitude angle.

139 When transmitter and receiver are moving towards each other... (1,00 P.)

- ☑ the perceived frequency increases.
- ☐ the perceived frequency decreases.
- ☐ the frequency varies, but the wavelength remains constant.
- ☐ the perceived frequency equals the transmitted frequency.

140 When transmitter and receiver are moving away from each other... (1,00 P.)

- ☐ the frequency varies, but the wavelength remains constant.
- ☐ the perceived frequency increases.
- ☐ the perceived frequency equals the transmitted frequency.
- ☑ the perceived frequency decreases.

141 VOR radials are defined based on the principle of... (1,00 P.)

- ☐ amplitude comparison of two signals.
- ☐ frequency comparison of two signals.
- ☑ phase comparison of two signals.
- ☐ pulse comparison of two signals.

142 A VOR radial corresponds to the... (1,00 P.)

- ☐ QTE.
- ☑ QDR.
- ☐ QUJ.
- ☐ QDM.

143 Full deflection of the course deviation indicator (CDI) means that the aircraft is located at least... (1,00 P.)

- ☑ 10° beside the selected course.
- ☐ 10 NM beside the selected course.
- ☐ 2 NM beside the selected course.
- ☐ 2° beside the selected course.

144 Where is the aircraft located in relation to the VOR?

See annex (NAV-022) (1,00 P.)

Siehe Anlage 14

- ☑ Northeast
- ☐ Southeast
- ☐ Northwest
- ☐ Southwest

145 The aircraft is on radial...

See annex (NAV-024) (1,00 P.)

Siehe Anlage 15

- ☑ 234°.
- ☐ 246°.
- ☐ 066°.
- ☐ 060°.

146 The range of a VOR is affected by... (1,00 P.)

- ☐ multipath propagation of the ground wave.
- ☑ transmitter and receiver altitude.
- ☐ reflected sky waves.
- ☐ daylight interference.

147 The distance measuring equipment (DME) determines the distance based on the principle of... (1,00 P.)

- ☐ phase comparison.
- ☐ Doppler.
- ☑ time measurement.
- ☐ laser measurement.

148 The DME reading is a... (1,00 P.)

- ☐ ground distance.
- ☐ air range.
- ☑ slant range.
- ☐ radial distance.

149 The differenz between indicated DME slant range and horizontal distance from the DME station increases... (1,00 P.)

- ☐ when descending.
- ☐ when circling around the DME station.
- ☐ when departing the DME station.
- ☑ when approaching the DME station.

150 Using primary ground radar, the direction of the aeroplane in relation to the antenna is determined by... (1,00 P.)

- ☑ the orientation of the antenna.
- ☐ the pulse pair interval.
- ☐ time measurement.
- ☐ the frequency shift of the received pulse.

151 Which instantaneous information can be obtained from ground radar equipment? (1,00 P.)

- ☐ Direction and airspeed (TAS)
- ☐ Airspeed (TAS) and heading
- ☑ Distance and direction
- ☐ Airspeed (TAS) and distance

152 The on-board equipment of the secondary surveillance radar (SSR) is called... (1,00 P.)

- ☐ decoder.
- ☑ transponder.
- ☐ interrogator.
- ☐ course indicator.

153 What is the difference between primary and secondary radar? (1,00 P.)

- ☑ The pulses of a primary radar are reflected by the aircraft's surface, the pulses of a secondary radar system are answered by a transponder
- ☐ The primary radar is displayed on a computer screen, the secondary radar on a radar strip
- ☐ The pulses of a primary radar are variably amplitude-modulated, the pulses of a secondary radar are statically pulse-modulated
- ☐ The pulses of a primary radar are variably pulse-modulated, the pulses of a secondary radar are statically amplitude-modulated

154 The transponder code in case of hi-jacking is... (1,00 P.)

- ☐ 7600.
- ☐ 7000.
- ☑ 7500.
- ☐ 7700.

155 The transponder code in case of a radio communication failure is... (1,00 P.)

- ☐ 7700.
- ☐ 7000.
- ☑ 7600.
- ☐ 7500.

156 Which altitude is transmitted by the transponder in mode C? (1,00 P.)

- ☐ QNH altitude
- ☐ Radio altitude
- ☐ QFE altitude
- ☑ Pressure altitude

157 How many satellites are necessary for a precise and verified three-dimensional determination of the position? (1,00 P.)

- ☐ Three
- ☐ Two
- ☑ Four
- ☐ Five

158 When using a GPS for tracking to the next waypoint, a deviation indication is shown by a vertical bar and dots to the left and to the right of the bar.

What statement describes the correct interpretation of the display? (1,00 P.)

- ☐ The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection depends on the operating mode of the GPS.
- ☐ The deviation of the bar from the center indicates the track error as angular distance in degrees; the scale for full deflection is +-10°.
- ☑ The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection depends on the operating mode of the GPS.
- ☐ The deviation of the bar from the center indicates the track error as absolute distance in NM; the scale for full deflection is +-10 NM.

159 What is meant by the term "terrestrial navigation"? (1,00 P.)

- ☑ Orientation by ground features during visual flight
- ☐ Orientation by GPS during visual flight
- ☐ Orientation by ground celestial object during visual flight
- ☐ Orientation by instrument readings during visual flight

160 What ground features should preferrably be used for orientation during visual flight? (1,00 P.)

- ☐ Border lines
- ☐ Power lines
- ☐ Farm tracks and creeks
- ☑ Rivers, railroads, highways

161 During a visual flight overhead Austria, around noon you head directly towards the sun.

In which direction then is East? (1,00 P.)

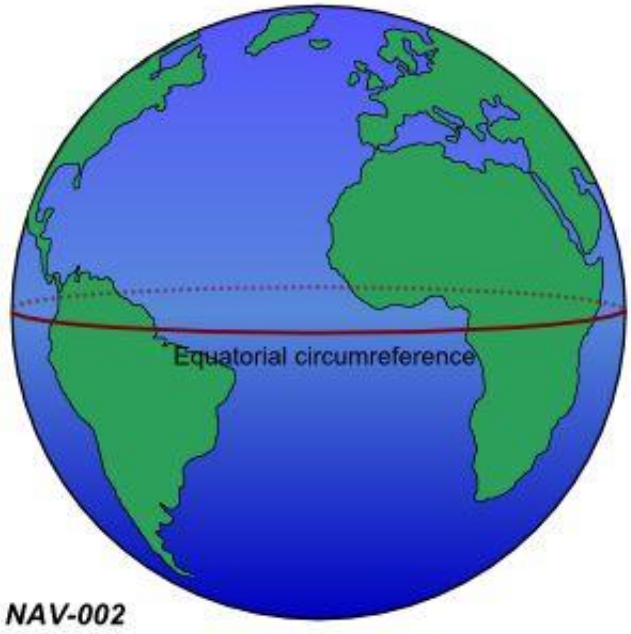
- ☐ Right
- ☑ Left
- ☐ Ahead
- ☐ Behind

162 On a day in July, you land on an Austrian airfield at 1430 local time (CEST = UTC+2).

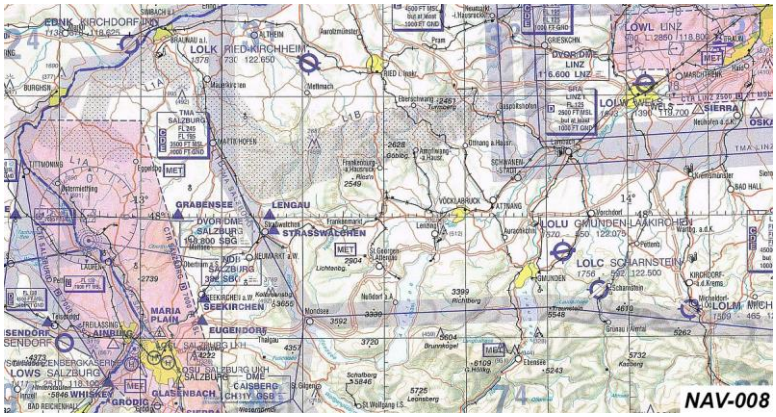
What time do you enter into the log book? (1,00 P.)

- ☐ 1330
- ☐ 1430
- ☑ 1230
- ☐ 1630

Anlage 1



Anlage 2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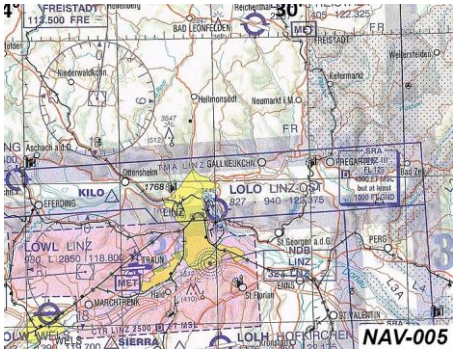
LOWL LINZ
LOLU GMUNDEN/LAAKIRCHEN
LOLC SCHARNSTEIN
GRABENSEE
LENGAU
STRASSWALCHEN
SEEKIRCHEN
EUGENDORF
MARIA PLAIN
GLASENBACH
NAV-008

Anlage 3

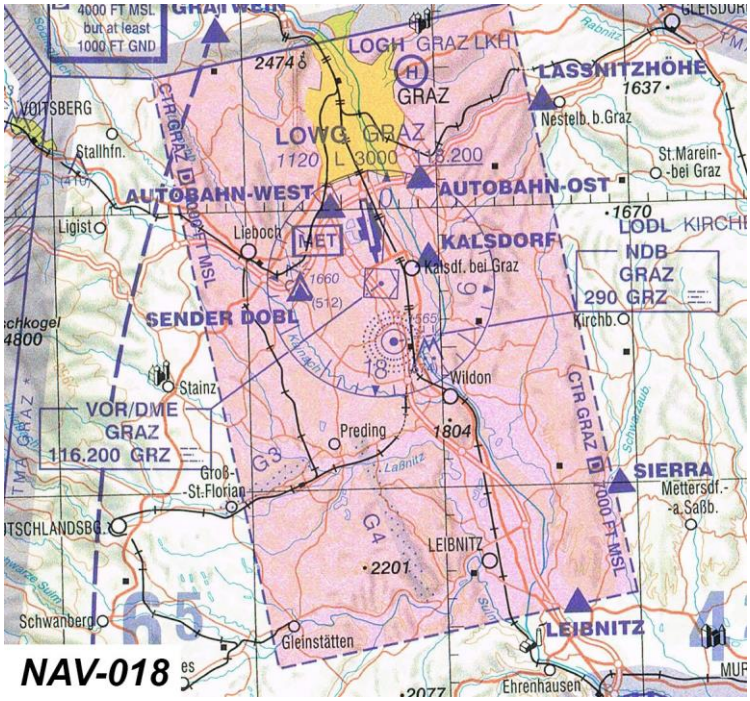
NAV-004

BEFORE START CHECKLIST	
Preflight Check	COMPLETED
Passengers	ADVISED
Seats / Seat Belts	SECURE
Door / Window	CLOSED
Brakes	SET
Flight Controls	FREE
Fuel Selector	BOTH
Circuit Breaker	CHECKED
Radio Master Switch	OFF
ACL	ON
Master Switch	ON
Flaps	RETRACTED
Before Start Checklist completed	
AFTER START CHECKLIST	
Engine Instruments	NORMAL
Avionic Master	ON
Altimeter	SET
Gyro	SET
After Start Checklist completed	
TAXI CHECKLIST	
Lights	____
Brakes	CHECKED
Turning Instruments	CORRECT
Taxi Checklist completed	

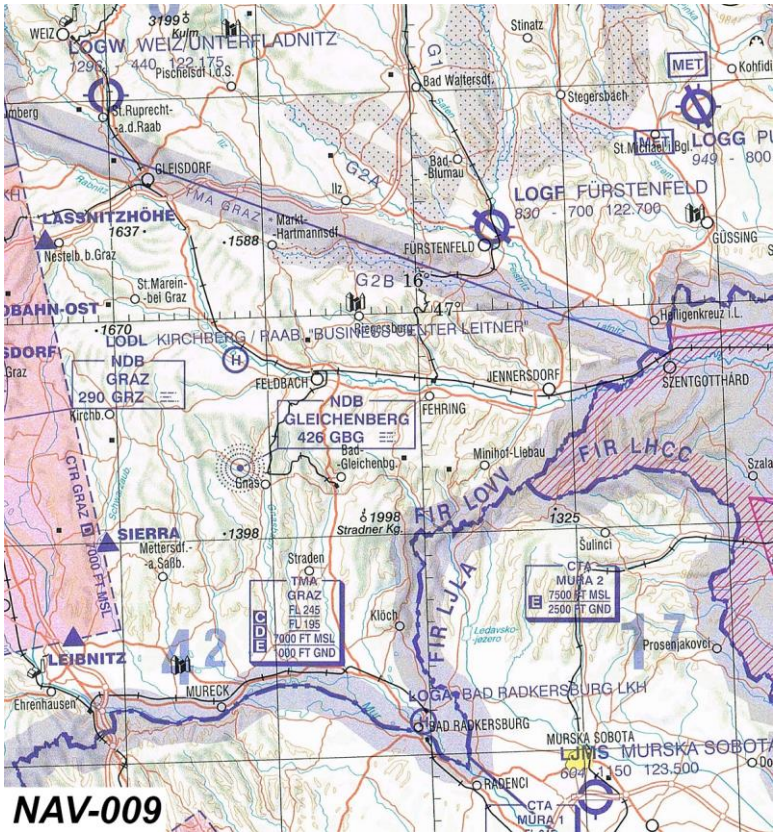
Anlage 4


FREISTADT
112.500 FRE
BAD LEONFELDEN
FREISTADT
Weitersfelden
Hellmonsödt
Neumarkt i.M.
Aschach a/d D.
Ottensheim
KILO
LOLO LINZ OST
827 940 125.175
LINZ
St.Georgen a.d.G.
NDB
LINZ
LOWL LINZ
L 2850 118.800
TRAUN
MET
MARCHTRENK
St.Florian
ST.ALBIN
PERG
REGAU
SRA
LOLH HOERSCHING
SIERRA
NAV-005

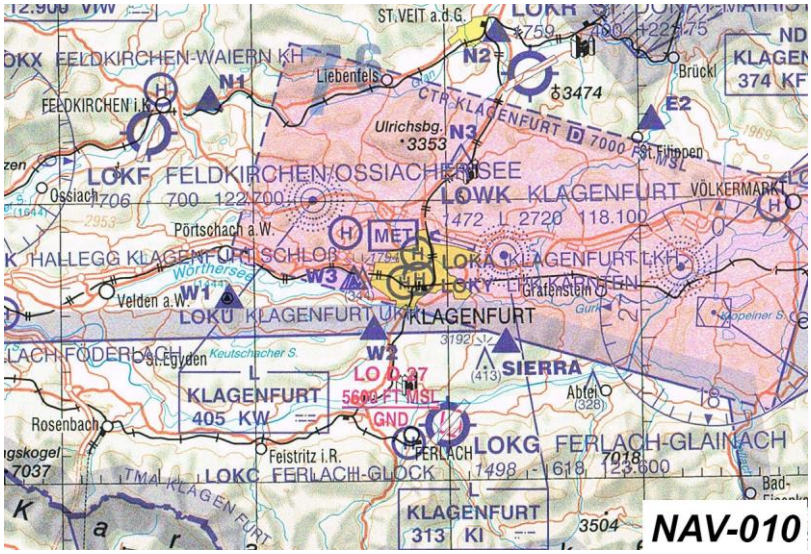
Anlage 5


4000 FT MSL
but at least
1000 FT GND
LOGH GRAZ LKH
GRAZ
LASSNITZHÖHE
1637
VOITSBERG
Stallhfn.
LOWG GRAZ
1120
Nestelb. b.Graz
St.Marein-
-bei Graz
AUTOBAHN-WEST
AUTOBAHN-OST
1670
Ligist
Liebock
MET
KALSDORF
Kalsdf. bei Graz
LODL
NDB
GRAZ
290 GRZ
SENDER DOBL
Kirchb.
Stainz
Wildon
VOR/DME
GRAZ
116.200 GRZ
Preding
1804
Groß-
-St.Florian
SIERRA
Mettersdf.-
-a.Saßb.
LEIBNITZ
2201
Schwanberg
Gleinstätten
LEIBNITZ
Ehrenhausen
NAV-018

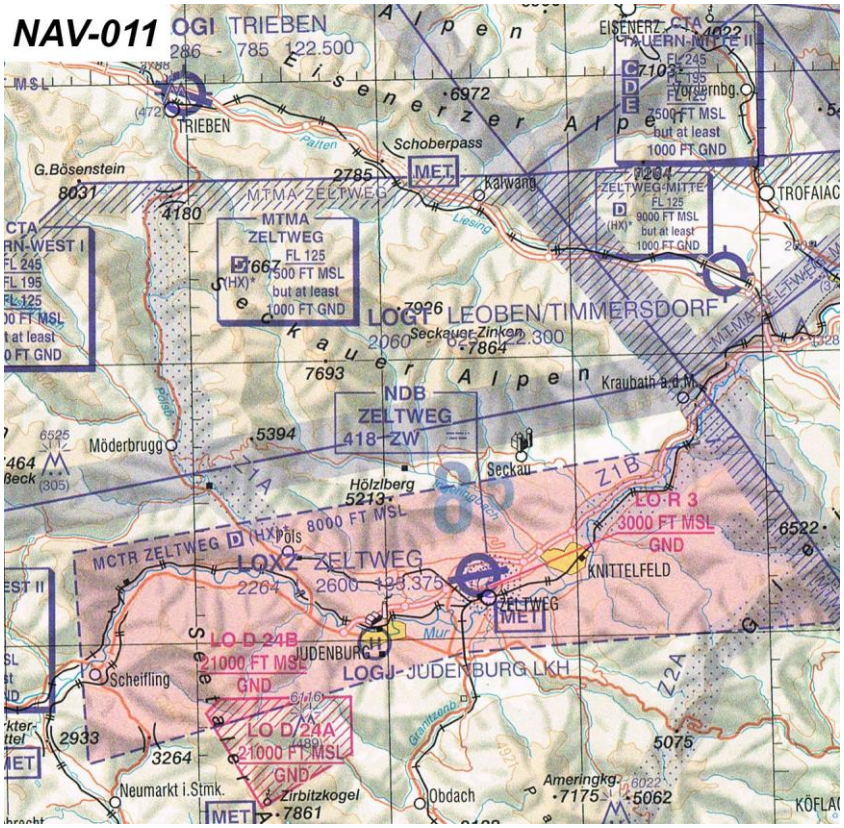
Anlage 6


LOGW WEIZ/UNTERFLADNITZ
LOGF FÜRSTENFELD
LOGG
LOWG BAD RADKERSBURG LKH
LJMS MURSKA SOBOTA
NDB GRAZ 290 GRZ
NDB GLEICHENBERG 426 GBG
LODL KIRCHBERG / RAAB "BUSINESSCENTER LEITNER"
LASSNITZHÖHE
SIERRA
LEIBNITZ
TMA GRAZ
CTA MURA 2
FIR LJLA
FIR LOVV
FIR LHCC
CTR GRAZ
NAV-009

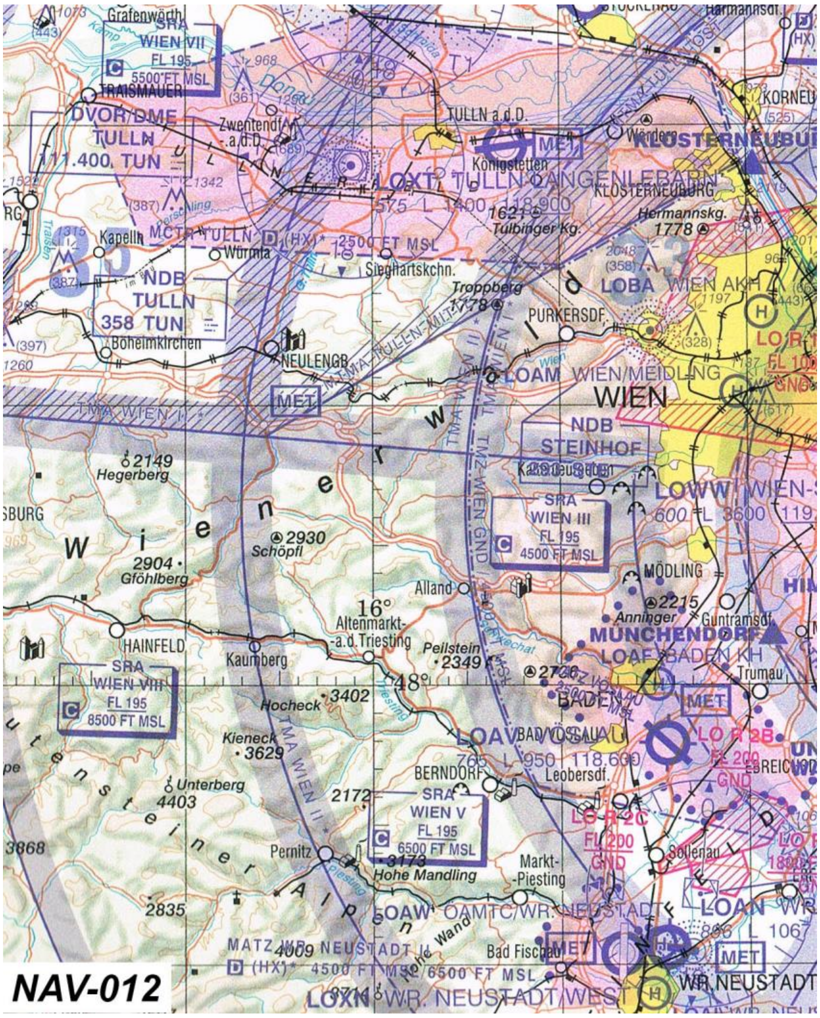
Anlage 7


ST.VEIT a.d.G.
LOKR
FELDKIRCHEN-WAIERN KH
N1
N2
Liebenfels
3474
Brückl
E2
FELDKIRCHEN i.K.
Ulrichsbg.
3353
N3
CTR KLAGENFURT D 7000
St.Filippen
LOKF FELDKIRCHEN/OSSIACHERSEE
700 122.700
LOWK KLAGENFURT VÖLKERMARKT
1472 L 2720 118.100
Ossiach
Pörtschach a.W.
MET
HALLEGG KLAGENFURT-WÖRTHERSEE
W3
LOKA KLAGENFURT LKH
LOKY LKK KÄRNTEN
Grafenstein
Velden a.W.
W1
LOKU KLAGENFURT UKW
KLAGENFURT
W2
SIERRA
St.Egyden
Keutschacher S.
LOKZ 127
KLAGENFURT
405 KW
5600 FT MSL
GND
Abtei
Rosenbach
Feistritz i.R.
FERLACH
LOKG FERLACH-GLAINACH
7037
LOKC FERLACH-GLOCK
1498
618
7018
KLAGENFURT
313 KI
3504
Bad-
NAV-010

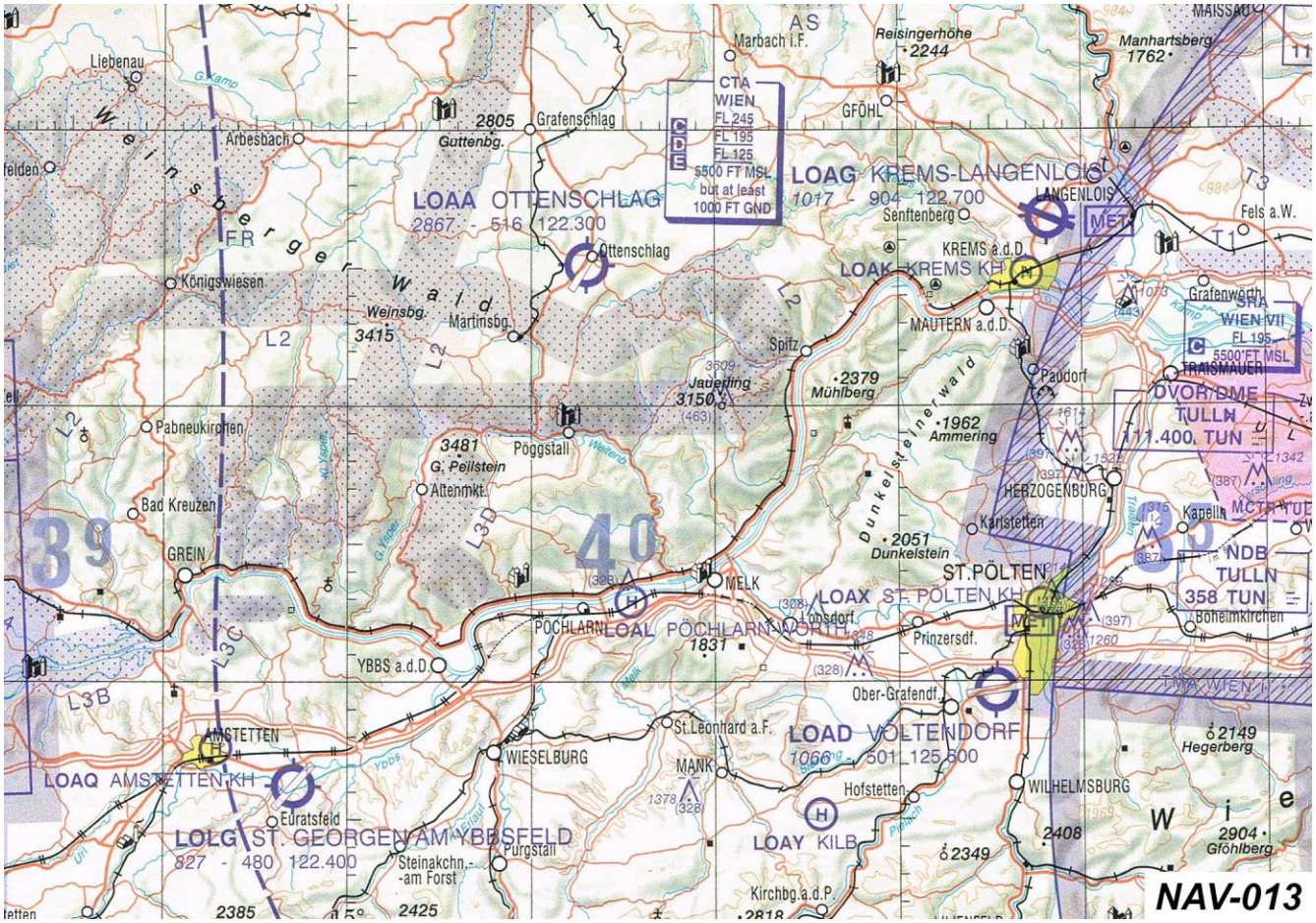
Anlage 8


NAV-011
OGI TRIEBEN
286 - 785 122.500
TRIEBEN
Eisenerzer Alpen
Schoberpass
MET
Kalwang
MTMA ZELTWEG
MTMA ZELTWEG
FL 125
7500 FT MSL
but at least
1000 FT GND
LOGT LEOBEN/TIMMERSDORF
Seckauer Zinken
Seckauer Alpen
NDB
ZELTWEG
418 ZW
Möderbrugg
Seckau
Hölzlberg
Z1A
Z1B
LO R 3
3000 FT MSL
GND
MCTR ZELTWEG
8000 FT MSL
LOXZ ZELTWEG
KNITTELFELD
ZELTWEG
MET
LO D 24B
1000 FT MSL
GND
JUDENBURG
LOGJ JUDENBURG LKH
Scheifling
LO D 24A
21000 FT MSL
GND
Z2A
Neumarkt i.Stmk.
Zirbitzkogel
Obdach
Ameringkg.
Kraubath a.d.M.
TROFAIACH
EISENERZ
TAUERN-MITTE II
ZELTWEG-MITTE
FL 125
9000 FT MSL
but at least
1000 FT GND

Anlage 9


Grafenwörth
SRA WIEN VII
FL 195
5500 FT MSL
TRAISMAUER
DVOR/DME TULLN
111.400 TUN
Zwentendorf a.d.D.
TULLN a.d.D.
Königstetten
MET
Wördern
KLOSTERNEUBURG
LOXT TULLN-LANGENLEBARN
575 L 1400 118.900
1621 Tulbinger Kg.
Hermannskg. 1778
MCTR TULLN D (HX) 2500 FT MSL
Kapelln
Würmla
Sieghartskchn.
NDB TULLN 358 TUN
Troppberg 1778
PURKERSDF.
LOBA WIEN AKH
Böheimkirchen
NEULENGB.
LOAM WIEN/MEIDLING
WIEN
TMA WIEN I
NDB STEINHOF
2149 Hegerberg
LOWW WIEN-S
600 L 3600
SRA WIEN III
FL 195
4500 FT MSL
2930 Schöpfl
2904 Gföhlberg
Alland
MÖDLING
2215 Anninger
Guntramsdf.
16°
Altenmarkt-a.d.Triesting
HAINFELD
Kaumberg
Pellstein 2349
MÜNCHENDORF
LOAF BADEN KH
Trumau
SRA WIEN VIII
FL 195
8500 FT MSL
Hocheck 3402
48°
BADEN
Kieneck 3629
LOAV BAD VÖSLAU
765 L 950 118.600
LO R 2B
FL 200 GND
BERNDORF
Leobersdf.
Unterberg 4403
2172
SRA WIEN V
FL 195
6500 FT MSL
LO R 2C
FL 200 GND
Pernitz
3173 Hohe Mandling
Markt-Piesting
Sollenau
LOAN WR.
2835
LOAW ÖAMTC/WR. NEUSTADT
MATZ WR. NEUSTADT D (HX) 4500 FT MSL 6500 FT MSL
4009
Bad Fischau
LOXN WR. NEUSTADT/WEST
WR. NEUSTADT
NAV-012

Anlage 10

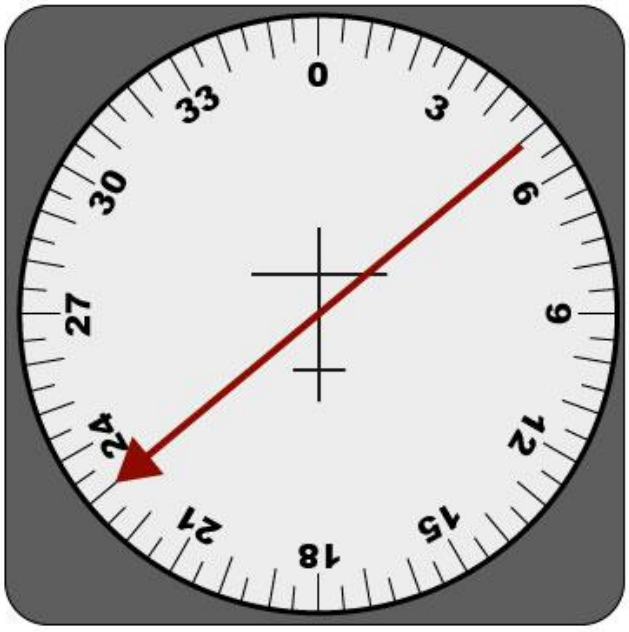

Liebenau
Arbesbach
Königswiesen
Pabneukirchen
Bad Kreuzen
GREIN
Grafenschlag
Guttenbg.
2805
Marbach i.F.
Reisingerhöhe
2244
Manhartsberg
1762
GFÖHL
CTA WIEN
FL 245
FL 195
FL 125
5500 FT MSL
but at least
1000 FT GND
LOAG KREMS-LANGENLOIS
1017 - 904 122.700
LANGENLOIS
Senftenberg
Fels a.W.
LOAA OTTENSCHLAG
2867 - 516 122.300
Ottenschlag
KREMS a.d.D.
LOAK KREMS KH
Königswiesener Wald
Weinsbg.
Martinsbg.
3415
MAUTERN a.d.D.
Grafenwörth
Spitz
Jauerling
3150
3481
G. Peilstein
Altenmkt.
Pöggstall
Mühlberg
2379
Ammering
1962
Paudorf
TRAISMAUER
DVOR/DME
TULLN
111.400 TUN
HERZOGENBURG
Karlstetten
Kapelln
Dunkelsteinerwald
2051
Dunkelstein
ST.PÖLTEN
NDB
TULLN
358 TUN
Böheimkirchen
LOAX ST. PÖLTEN KH
Lonsdorf
Prinzersdf.
MELK
POCHLARN
LOAL PÖCHLARN/WORTH
1831
YBBS a.d.D.
Ober-Grafendf.
St.Leonhard a.F.
LOAD VÖLTENDORF
1066 - 501 125.600
AMSTETTEN
LOAQ AMSTETTEN KH
WIESELBURG
MANK
Hofstetten
WILHELMSBURG
2149
Hegerberg
Euratsfeld
LOLG ST. GEORGEN AM YBBSFELD
827 - 480 122.400
Steinakchn.-
-am Forst
Purgstall
LOAY KILB
2349
2408
2904
Gföhlberg
Kirchbg.a.d.P.
2385
2425
L2
L3B
L3C
L3D
39
40
NAV-013

Anlage 11

P6	P7		P8	P9		P9	P10	P11
NAV-014								
VE	Wind W/V **Wind W/WS**		rwk	L	rwSK	MW	mwSK	mwK
TAS	Richtung	Geschw.	**TC**	**WCA**	**TH**	**VAR**	**MH**	**MC**
75	320	15	247	+11	258	1	257	246
95	320	15	152	+2	154	1	153	151
95	320	15	139	0	139	1	138	138
95	320	15	161	+3	164	1	163	160
95	320	15	179	+6		1		

Anlage 12

Anlage 13



NAV-019

Anlage 14

NAV-022

Anlage 15

NAV-024