

With the following changes, this text provides complete preparation for the FAA Flight Engineer Knowledge Exams. The FAA may rearrange the answer stems to appear in a different order on your test than you see in this book. For this reason, be careful to fully understand the intent of each question and corresponding answer while studying, rather than memorize the A, B, C associated with the correct response. The next FAA test cycle (new databases) is expected in October 2008.

| Page Number | Question Number | Correct Answer | Explanation |
|-------------|-----------------|----------------|--|
| 1-9 | 1102 | [A] | <p><i>Change the answer stems to read:</i></p> <p>A—Test flight. B—Revenue cargo flight. C—Passenger flight with compensation.</p> |
| 1-28 | 1086 | [B] | <p><i>Change answer stem B to read:</i></p> <p>B—None.</p> |
| 2-19 | 1124 | [C] | <p><i>Change the answer stems to read:</i></p> <p>A—equivalent airspeed for compressibility. B—equivalent airspeed for nonstandard temperature and humidity. C—equivalent airspeed for the air-density variation from the standard value at sea level.</p> |
| 3-10 | 1093 | [A] | <p><i>Add a new question to read:</i></p> <p>ALL 1093. An in-flight condition necessary for structural icing to form is</p> <p>A—visible water such as supercooled rain or cloud droplets. B—aerodynamic cooling of an airfoil to 0 degrees C. C—the temperature at the point where moisture strikes the aircraft must be 0 degrees F or colder.</p> <p>Two conditions are necessary for structural icing in flight: (1) the aircraft must be flying through visible water such as rain or cloud droplets, and (2) temperature at the point where the moisture strikes the aircraft must be 0°C or colder. Aerodynamic cooling can lower temperature of an airfoil to 0°C even though the ambient temperature is a few degrees warmer. (PLT274) — AC 00-6A</p> <p>Answer (B) is incorrect because while aerodynamic cooling can lower the temperature of an airfoil to the point where structural icing is a possibility, it is not a necessary condition for structural icing to form. Answer (C) is incorrect because the temperature must be 0°C (not F).</p> |
| 4-45 | 1832 | [B] | <p><i>In Step #2 of the explanation, change “-1,518.8” to “-1,528.8”</i></p> |
| 5-14 | 1008 | [B] | <p><i>Add a new question to read:</i></p> <p>FEX, FET 1008. What recovery would be appropriate in the event of compressor stall?</p> <p>A—Reduce the thrust lever and then rapidly advance the thrust lever to decrease the angle of attack on the compressor blades, creating more airflow. B—Reduce the thrust lever and then slowly advance the thrust lever again to decrease the angle of attack on one or more compressor blades. C—Advance the thrust lever slowly to increase airflow and decrease the angle of attack on one or more compressor blades.</p> <p>If a compressor stall is transient and intermittent, the indication will be an intermittent “bang” as backfire and flow reversal take place. If the stall develops and becomes steady, strong vibration and a loud roar develop from the continuous flow reversal. Damage can occur immediately from a steady stall. Recovery must be accomplished quickly by reducing throttle setting, lowering the airplane angle of attack, and increasing airspeed. (PLT477) — The Aircraft Gas Turbine Engine and Its Operation</p> |

| Page Number | Question Number | Correct Answer | Explanation |
|-------------|-----------------|----------------|--|
| 5-22 | 1644 | [B] | <i>Change answer stem B to read:</i> B—that does not form ash deposits. |
| 5-25 | 1581 | [A] | <i>Change answer stem C to read:</i> C—dangerous gas temperatures and velocities when accelerating to idle from injuring personnel or damaging the engine. |
| 5-29 | 1608 | [A] | <i>Change the question to read:</i> 1608. It is important to note the maximum EGT when starting a turbine engine to |
| 6-9 | 1453 | [C] | <i>Change answer stem C to read:</i> C—help maintain the aircraft's center of gravity. |
| 7-24 | 1494 | [A] | <i>Change the question to read:</i> 1494. What type of gas is normally used to service the gas-storage bottles of an emergency pneumatic system? |
| 9-6 | 1325 | [C] | <i>Change answer stem C and the explanation to read:</i> C—Refrigerant R-12 will cause frostbite if it touches skin. Refrigerant R-12 is a fluorinated hydrocarbon material; any Freon-12 dropped on the skin will result in frostbite. |
| 10-4 | 1518 | [C] | <i>Change answer stem C and add a sentence to the end of the explanation:</i> C—Rain repellent should not be used to clean a windshield. ...Rain repellent should not be used on a dry windshield since the chemical itself will reduce visibility through the glass. |
| 10-5 | 1190 | [A] | <i>Change the answer stems to read:</i> A—Visibly moist air and +45°F. B—Visibly moist air and +70°F. C—Relatively dry air and +32°F. |
| 10-6 | 1194 | [B] | <i>Change the question to read:</i> 1194. What is the lowest ambient temperature that engine ice is likely to form in air clear of visible moisture? |
| 10-8 | 1505 | [B] | <i>Change the question to read:</i> 1505. Deicing fluid should be dispensed at what temperature? |
| 10-9 | 1051 | [A] | <i>Add a new question to read:</i> ALL 1051. Type 2 deicing/anti-icing fluids have a significantly A—longer holdover period than type 1 fluids. B—shorter holdover period than type 1 fluids. C—lower viscosity than type 1 fluids. Type 2 deicing/anti-icing fluids have a significantly longer holdover period than Type 1 fluids. (PLT108) — AC 120-58 Answer (B) is incorrect because Type 2 fluids have a longer holdover period than type 1 fluids. Answer (C) is incorrect because Type 2 fluids can have high to low viscosity. |

| Page Number | Question Number | Correct Answer | Explanation |
|-------------|-----------------|----------------|---|
| 11-9 | 1238 | [A] | <p><i>Change the answer stems, incorrect answer explanation, and answer to read:</i></p> <p>A—Figure 14. B—Figure 11. C—Figure 10.</p> <p><i>Disregard the first sentence in the incorrect answer explanation.</i></p> |
| 11-9 | 1239 | [C] | <p><i>Change the answer stems, incorrect answer explanation, and answer to read:</i></p> <p>A—Figure 7. B—Figure 10. C—Figure 15.</p> <p><i>Disregard the last sentence in the incorrect answer explanation.</i></p> |
| 12-19 | 1236 | [A] | <p><i>Change the answer stems, incorrect answer explanation, and answer to read:</i></p> <p>A—Vehicles or personnel should clear the taxiway. B—Aircraft in flight should exercise extreme caution. C—Aircraft on the ground should return to their starting point on the airport.</p> <p>Answer (B) is incorrect because this would be signaled with an alternating red and green light. Answer (C) is incorrect because this would be signaled with a flashing white light while on the ground.</p> |

Cross-Reference B *In September 2007, the FAA released new codes to replace the Subject Matter Knowledge Codes (found in Cross-Reference B in the back of the Test Prep book). The Airman Test Report you receive after completing the FAA Knowledge Exam now lists Learning Statement Codes (LSC) for the questions that are answered incorrectly. The following replaces Cross-Reference B found in the book, providing LSC definitions as well as listing the corresponding questions that fall within that code.*

Cross-Reference B Learning Statement Code and Question Number

The expression “learning statement,” as used in FAA airman testing, refers to measurable statements about the knowledge a student should be able to demonstrate following a certain segment of training. In order that each learning statement may be read and understood in context as a complete sentence, precede each statement with the words: “Upon the successful completion of training the student should be able to...” — complete the phrase with the subject indicated by the learning statement code (LSC) given in your knowledge test results.

When you take the applicable airman knowledge test required for an airman pilot certificate or rating, you will receive an Airman Knowledge Test Report. The test report will list the learning statement codes for questions you have answered incorrectly. Match the codes given on your test report to the ones in the official FAA Learning Statement Codes (listed below in this cross-reference). Use Cross-Reference A in the Test Prep book to find the page number for the question numbers listed below. Your instructor is required to provide instruction on each of the areas of deficiency listed on your Airman Knowledge Test Report and give you an endorsement for this instruction. The Airman Knowledge Test Report must be presented to the examiner conducting your practical test. During the oral portion of the practical test, the examiner is required to evaluate the noted areas of deficiency.

If you received a code on your Airman Test Report that is not listed in this cross-reference, email ASA at cfi@asa2fly.com. We will provide the definition so you can review that subject area.

The FAA appreciates testing experience feedback. You can contact the branch responsible for the FAA Knowledge Exams directly at:

Federal Aviation Administration
AFS-630, Airman Testing Standards Branch
PO Box 25082
Oklahoma City, OK 73125
Email: AFS630comments@faa.gov

PLT002Calculate aircraft performance — airspeed
1124, 1244, 1245, 1246, 1247, 1248

PLT003Calculate aircraft performance — center of gravity
1734, 1735, 1754, 1755, 1756, 1757, 1758, 1759, 1760, 1761, 1762, 1763, 1764, 1765, 1766, 1767, 1768, 1769, 1770, 1771, 1772, 1773, 1774, 1775, 1776, 1777, 1778, 1779, 1780, 1781, 1782, 1783, 1784, 1785, 1786, 1787, 1788, 1789, 1790, 1791, 1792, 1793, 1794, 1795, 1796, 1797, 1798, 1799, 1800, 1801, 1802, 1803, 1804, 1805, 1806, 1807, 1808, 1809, 1810

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|--------------|--|---|
| PLT007 | Calculate aircraft performance — IAS / EPR | 1686 |
| PLT008 | Calculate aircraft performance — landing | 1840, 1841, 1842, 1849, 1850, 1851 |
| PLT011 | Calculate aircraft performance — takeoff | 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1706, 1707 |
| PLT012 | Calculate aircraft performance — time / speed / distance / course / fuel / wind | 1282, 1283, 1284, 1285, 1286, 1687, 1689, 1690, 1691, 1709, 1712, 1713, 1715, 1717, 1720, 1722, 1723, 1724, 1725, 1726, 1727, 1728, 1729 |
| PLT013 | Calculate crosswind / headwind components | 1115 |
| PLT015 | Calculate flight performance / planning — range | 1155 |
| PLT016 | Calculate fuel dump — time / weight / volume | 1710, 1711, 1714, 1716, 1718, 1719, 1721, 1730, 1731 |
| PLT021 | Calculate weight and balance | 1732, 1740, 1741, 1742, 1743, 1744, 1745, 1746, 1747, 1748, 1749, 1750, 1751, 1752, 1753, 1817, 1818, 1819, 1820, 1821, 1822, 1823, 1837 |
| PLT028 | Define crewmember | 1004 |
| PLT032 | Define MACH speed regimes | 1145 |
| PLT036 | Interpret a MACH meter reading | 1529 |
| PLT038 | Interpret aircraft Power Schedule Chart | 1705 |
| PLT041 | Interpret altimeter — readings / settings | 1182, 1183, 1228, 1230, 1231, 1524, 1525 |
| PLT094 | Recall aerodynamics — airfoil design / pressure distribution | 1733 |
| PLT095 | Recall aerodynamics — longitudinal axis / lateral axis | 1139 |
| PLT108 | Recall aircraft anti-icing / deicing — methods / fluids | 1051, 1185, 1192, 1193, 1497, 1498, 1500, 1501, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1516, 1518, 1519, 1520, 1521 |
| PLT109 | Recall aircraft batteries — capacity / charging / types / storage / rating / precautions | 1351, 1352, 1353, 1354, 1355, 1356, 1370, 1372, 1373, 1388, 1389, 1390, 1397, 1398, 1401, 1408, 1409 |
| PLT110 | Recall aircraft brake system | 1490, 1491, 1538, 1539, 1540 |
| PLT115 | Recall aircraft engine — detonation cause / characteristics | 1204, 1672 |
| PLT117 | Recall aircraft heated windshields | 1496, 1499 |
| PLT118 | Recall aircraft instruments — gyroscopic | 1036, 1037, 1527 |
| PLT121 | Recall aircraft loading — computations | 1824, 1825, 1826, 1827, 1828, 1829, 1830, 1831, 1832, 1833, 1834, 1835, 1836, 1838, 1839, 1843, 1844, 1845, 1846, 1847, 1848, 1852, 1853, 1854, 1855, 1856, 1857 |
| PLT123 | Recall aircraft performance — airspeed | 1116, 1125 |

- PLT124Recall aircraft performance — atmospheric effects
1142, 1143, 1171, 1175, 1184, 1197, 1199, 1200, 1203, 1360, 1495
- PLT125Recall aircraft performance — climb / descent
1123
- PLT127Recall aircraft performance — density altitude
1118, 1154, 1164, 1165, 1166, 1167, 1168, 1172
- PLT130Recall aircraft performance — fuel
1128
- PLT135Recall aircraft pressurization — system / operation
1309, 1310, 1311, 1312, 1313, 1315, 1316, 1317, 1318, 1339
- PLT136Recall aircraft systems — anti-icing / deicing
1208
- PLT137Recall aircraft systems — environmental control
1320, 1321, 1322
- PLT138Recall aircraft tires — types / characteristics
1213, 1214, 1215, 1218, 1219, 1220, 1532, 1536, 1537
- PLT139Recall aircraft warning systems — stall / fire / retractable gear / terrain awareness
1035, 1059, 1294, 1299, 1303, 1304, 1305, 1308, 1410, 1531, 1533, 1534, 1535
- PLT166Recall altimeter — settings / setting procedures
1229, 1234
- PLT168Recall angle of attack — characteristics / forces / principles
1111, 1130, 1140
- PLT188Recall cabin atmosphere control
1314, 1319, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350
- PLT189Recall carburetor — effects of carburetor heat / heat control
1206
- PLT190Recall carburetor ice — factors affecting / causing
1196, 1209
- PLT191Recall carburetors — types / components / operating principles / characteristics
1207
- PLT193Recall cockpit voice recorder (CVR) — operating principles / characteristics / testing
1056, 1057, 1058
- PLT196Recall communications — ATIS broadcasts
1232, 1233
- PLT203Recall earth's atmosphere — layers / characteristics / solar energy
1179, 1180, 1188, 1189, 1195
- PLT206Recall effects of temperature — density altitude / icing
1187, 1190, 1194
- PLT207Recall electrical system — components / operating principles / characteristics
1357, 1358, 1359, 1361, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1371, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1391, 1392, 1393, 1394, 1395, 1396, 1399, 1400, 1402, 1403, 1404, 1405, 1406, 1407
- PLT208Recall emergency conditions / procedures
1257, 1258
- PLT209Recall engine pressure ratio — EPR
1186, 1543
- PLT210Recall engine shutdown — normal / abnormal / emergency / precautions
1249, 1250, 1582, 1597, 1662
- PLT212Recall fire extinguishing systems — components / operating principles / characteristics
1001, 1002, 1251, 1252, 1253, 1254, 1255, 1293, 1295, 1296, 1297, 1298, 1300, 1301, 1302, 1306, 1307

- PLT214Recall flight characteristics — structural / wing design
1144, 1147, 1148, 1150, 1151, 1153, 1161, 1162
- PLT226Recall fog — types / formation / resulting weather
1174
- PLT235Recall forces acting on aircraft — aerodynamics
1435, 1437, 1438, 1439, 1440
- PLT236Recall forces acting on aircraft — airfoil / center of pressure / mean camber line
1132, 1134, 1135
- PLT237Recall forces acting on aircraft — airspeed / air density / lift / drag
1127, 1131, 1133, 1141, 1572
- PLT238Recall forces acting on aircraft — aspect ratio
1137
- PLT240Recall forces acting on aircraft — CG / flight characteristics
1138, 1736, 1737, 1738, 1739
- PLT243Recall forces acting on aircraft — propeller / torque
1622, 1623, 1624
- PLT244Recall forces acting on aircraft — stability / controllability
1119, 1120, 1136
- PLT245Recall forces acting on aircraft — stalls / spins
1113, 1114
- PLT248Recall forces acting on aircraft — turns
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- PLT249Recall fuel — air mixture
1107, 1205
- PLT250Recall fuel — types / characteristics / contamination / fueling / defueling / precautions
1670, 1671, 1673
- PLT251Recall fuel characteristics / contaminants / additives / leaks
1198, 1211, 1212, 1216, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1451, 1456, 1457, 1458, 1460, 1461, 1462, 1667
- PLT253Recall fuel system — components / operating principles / characteristics
1201, 1202, 1445, 1446, 1447, 1449, 1450, 1452, 1453, 1454, 1455, 1459, 1463, 1545, 1546, 1547, 1548, 1650, 1665, 1666, 1668, 1669
- PLT255Recall fueling procedures — safety / grounding / calculating volume
1708
- PLT263Recall hazardous weather — fog / icing / turbulence
1178, 1517
- PLT273Recall hydraulic systems — components / operating principles / characteristics
1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1492, 1493
- PLT274Recall icing — formation / characteristics
1093, 1169, 1170
- PLT301Recall inversion layer — characteristics
1181
- PLT303Recall L / D ratio
1110
- PLT305Recall leading edge devices — types / effect / purpose / operation
1426, 1427, 1428, 1429, 1430, 1431, 1432
- PLT310Recall load factor — characteristics
1117, 1811, 1816
- PLT315Recall Machmeter — principles / functions
1152, 1156, 1157, 1158, 1159

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| PLT318 | Recall minimum fuel advisory | 1259 |
| PLT324 | Recall oil system — types / components / functions | 1602, 1603, 1604, 1644, 1645, 1646, 1647, 1648, 1660, 1663 |
| PLT326 | Recall oxygen system — components / operating principles / characteristics | 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1279, 1280, 1287, 1288, 1289, 1290, 1292 |
| PLT327 | Recall oxygen system — install / inspect / repair / service / precautions / leaks | 1277, 1291 |
| PLT330 | Recall physiological factors — cause / effects of hypoxia | 1276 |
| PLT331 | Recall physiological factors — effects of scuba diving / smoking | 1278, 1281 |
| PLT337 | Recall pitot-static system — components / operating principles / characteristics | 1526, 1528, 1530 |
| PLT338 | Recall pneumatic system — operation | 1494 |
| PLT342 | Recall powerplant — controlling engine temperature | 1448, 1544, 1601, 1643, 1651, 1674, 1675, 1676 |
| PLT343 | Recall powerplant — operating principles / operational characteristics / inspecting | 1595, 1638, 1640, 1641, 1642, 1649, 1657, 1658 |
| PLT344 | Recall precipitation — types / characteristics | 1513 |
| PLT346 | Recall primary flight controls — types / purpose / functionality | 1149, 1362, 1411, 1413, 1414, 1416, 1417, 1418, 1421, 1422, 1424, 1425, 1433, 1434, 1436, 1442, 1443 |
| PLT347 | Recall principles of flight — critical engine | 1003 |
| PLT351 | Recall propeller system — types / components / operating principles / characteristics | 1611, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1652 |
| PLT365 | Recall reciprocating engine — components / operating principles / characteristics | 1639, 1656 |
| PLT368 | Recall regulations — admission to flight deck | 1089, 1095 |
| PLT373 | Recall regulations — aircraft operating limitations | 1101, 1104 |
| PLT385 | Recall regulations — cargo in passenger compartment | 1033, 1034 |
| PLT386 | Recall regulations — certificate renewal | 1016, 1020 |
| PLT388 | Recall regulations — cockpit voice recorder | 1027, 1028, 1029, 1030, 1032 |
| PLT395 | Recall regulations — definitions | 1812, 1813, 1814, 1815 |
| PLT398 | Recall regulations — dispatch | 1097 |
| PLT400 | Recall regulations — documents to be carried on aircraft during flight | 1098 |
| PLT404 | Recall regulations — emergency equipment | 1041, 1043, 1044, 1045, 1046 |

- PLT405Recall regulations — equipment / instrument / certificate requirements
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- PLT407Recall regulations — experience / training requirements
1031, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1073
- PLT409Recall regulations — flight / duty time
1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085
- PLT410Recall regulations — flight engineer qualifications / privileges / responsibilities
1009, 1011, 1015, 1017, 1018, 1019, 1022, 1023, 1024, 1061, 1063, 1072, 1074, 1075, 1102
- PLT413Recall regulations — fuel requirements
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- PLT438Recall regulations — oxygen requirements
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- PLT439Recall regulations — persons authorized to perform maintenance
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- PLT440Recall regulations — Pilot / Crew duties and responsibilities
1062, 1086, 1087, 1091, 1094
- PLT444Recall regulations — pilot-in-command authority / responsibility
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- PLT445Recall regulations — preflight requirements
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- PLT447Recall regulations — privileges / limitations of medical certificates
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- PLT448Recall regulations — privileges / limitations of pilot certificates
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- PLT451Recall regulations — ratings issued / experience requirements / limitations
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- PLT453Recall regulations — records retention for domestic / flag air carriers
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- PLT462Recall regulations — use of microphone / megaphone / interphone
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- PLT463Recall regulations — use of narcotics / drugs / intoxicating liquor
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- PLT464Recall regulations — use of safety belts / harnesses (crew member)
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- PLT466Recall regulations — V speeds
1005, 1006, 1007, 1126
- PLT473Recall secondary flight controls — types / purpose / functionality
1108, 1109, 1412, 1415, 1423
- PLT476Recall stabilizer — purpose / operation
1441, 1444
- PLT477Recall stalls — characteristics / factors / recovery / precautions
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- PLT478Recall starter / ignition system — types / components / operating principles / characteristics
1574, 1664
- PLT479Recall starter system — starting procedures
1261, 1573, 1575, 1581, 1598, 1605, 1608, 1677, 1678
- PLT480Recall static / dynamic stability / instability — characteristics
1121, 1122
- PLT483Recall supercharger — characteristics / operation
1659

- PLT492Recall temperature — effects on weather formations
1163
- PLT493Recall the dynamics of frost / ice / snow formation on an aircraft
1176, 1177, 1514, 1515
- PLT497Recall transponder — codes / operations / usage
1256, 1522, 1523
- PLT499Recall turbine engines — components / operational characteristics / associated instruments
**1541, 1542, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566,
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- PLT500Recall turboprop engines — components / operational characteristics
1653, 1654, 1655
- PLT502Recall universal signals — hand / light / visual
1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243
- PLT509Recall wake turbulence — characteristics / avoidance techniques
1129
- PLT512Recall weather conditions — temperature / moisture / dewpoint
1173