**Transponder operating procedures and phraseology**
010 Air Law and ATC Procedures › 06 Altimeter setting and transponder procedures

QUESTION

# Which code indicates an emergency?


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**ANSWER**

7700. Select 7700 to indicate an emergency, unless ATS has assigned a specific code. Even then, the pilot can select 7700 for a specific reason.

SERA.13005(a)(1); Appendix 1 1.2.1(f); SERA.11015(b)(4); SERA.13005(a)(1)


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**Transponder operating procedures and phraseology**
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QUESTION

# Which code indicates radio-communication failure?


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**ANSWER**

7600. Select 7600 to indicate radio-communication failure.

SERA.13005(a)(2); SERA.14083(c)(2); SERA.13005(a)(2)


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QUESTION

# Which code indicates unlawful interference?


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**ANSWER**

7500. Select 7500 to indicate unlawful interference. When circumstances warrant, select 7700 instead.

SERA.13005(a)(3); SERA.11005(aa); SERA.13005(a)(3)


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QUESTION

# Which code is selected for interception?


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**ANSWER**

7700, unless the ATS unit instructs otherwise.

SERA.13005(a)(1); Appendix 1 1.2.1(f); SERA.11015(b)(4); SERA.11015(b)(4)


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QUESTION

# Which code is the default when ATS gives no code instruction?


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**ANSWER**

2000. Select 2000 unless the competent authority prescribes another code.

SERA.13005(b)(2); SERA.13005(b)(1)–(3); SERA.13005(b)(2), (b)(3)


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QUESTION

# Which code is the conspicuity code when no ATS is received?


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**ANSWER**

7000. Select 7000 to improve detection by suitably equipped aircraft, unless the competent authority prescribes otherwise.

SERA.13005(b)(3); SERA.13005(b)(1)–(3)


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QUESTION

# Which code does the pilot select when ATS instructs a code?


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**ANSWER**

The code that ATS instructs.

SERA.13005(b)(1)–(3)


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QUESTION

# When must the pilot use IDENT?


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**ANSWER**

Only when ATS asks for it. The pilot must not use IDENT unless ATS asks for it.

SERA.13001(b)


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QUESTION

# What does the IDENT feature do?


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**ANSWER**

It highlights the aircraft on the controller's display.

SERA.13001(b)


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QUESTION

# When must the transponder be operated in flight?


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**ANSWER**

At all times, whether or not the airspace uses SSR for air traffic services. The transponder must be serviceable.

SERA.13001(a)


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QUESTION

# When must Mode C be operated?


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**ANSWER**

Continuously, unless ATS says otherwise.

SERA.13010(a)


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QUESTION

# How often does ATS verify the Mode C level?


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**ANSWER**

At least once, on initial contact or as soon as possible after.

SERA.13010(b)


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QUESTION

# What does ATS mean by CHECK ALTIMETER SETTING AND CONFIRM (level)?


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**ANSWER**

The displayed level is outside the approved tolerance. Check the altimeter setting and confirm the level.

GM1 SERA.13010(b)(a)–(b); Appendix 1, 2.3.10–2.3.14


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QUESTION

# How is the code 2000 spoken?


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**ANSWER**

Digit and THOUSAND: squawk two thousand.

SERA.13005(b)(2); SERA.14035(a)(1)(iii); GM4 SERA.14035(a)(1)(iii)


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QUESTION

# How is the code 2400 spoken?


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**ANSWER**

Each digit separately: squawk two four zero zero.

SERA.14035(a)(1)(iii); GM4 SERA.14035(a)(1)(iii)


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QUESTION

# Is readback of an SSR code required?


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**ANSWER**

Yes. Readback is mandatory for SSR codes.

SERA.8015(e)(1)(iii)


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QUESTION

# What does ATS say to confirm a code, and what does the pilot answer?


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**ANSWER**

ATS says CONFIRM SQUAWK (code). The pilot answers SQUAWKING (code).

Appendix 1, 2.3.3, 2.3.4, 2.3.6



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QUESTION

# Which phrase does ATS use for the emergency code?


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**ANSWER**

SQUAWK MAYDAY [CODE SEVEN-SEVEN-ZERO-ZERO]. The code is 7700.

SERA.13005(a)(1); Appendix 1 1.2.1(f); SERA.11015(b)(4); Appendix 1, 2.3.5, 2.3.7, 2.3.8, 2.3.9


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QUESTION

# What does the pilot insert in the flight plan's surveillance equipment field for total SSR unserviceability?


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**ANSWER**

N. For partial failure, insert the letter of the remaining capability.

SERA.13020(b)(1)–(3); GM1 SERA.13020(b); SERA Appendix 6, Item 10


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QUESTION

# What must the pilot do first if a transponder fails before departure?


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**ANSWER**

Tell ATS as soon as possible, preferably before filing the flight plan.

SERA.13020(b)(1)–(3); GM1 SERA.13020(b)


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QUESTION

# How many Mode A codes are available?


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**ANSWER**

4 096 codes, each with 4 digits.

SERA Appendix 6, Item 10


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QUESTION

# How long is the aircraft address?


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**ANSWER**

24 bits. It is a unique combination for each aircraft.

SERA Article 2(19); Article 2(19)


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QUESTION

# What does a transponder mandatory zone require?


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**ANSWER**

All flights must carry and operate an SSR transponder that works on Mode A and Mode C, or on Mode S.

SERA.6005(b), (d)


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QUESTION

# What does ATS try to do after a transponder fails after departure?


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**ANSWER**

Let the flight continue to its destination per the flight plan. The pilot can receive specific restrictions.

SERA.13020(a); GM1 SERA.13020(a)


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QUESTION

# What pressure reference does Mode C report, and what can cause a level mismatch?


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**ANSWER**

Pressure-altitude, based on the Standard Atmosphere, independent of the pilot's subscale. A wrong subscale causes a mismatch with the reported level.

Article 2(101); GM1 SERA.13010(b)(a); Appendix 1, 2.3.12


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QUESTION

# In Portugal, which code does a VFR flight outside controlled airspace set on its transponder?


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**ANSWER**

Code 7000, when the aircraft carries a transponder and is within SSR coverage. This is a Portuguese rule from the AIP. Check the AIP in force.

AIP Portugal ENR 1.6, 3.2


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