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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QUESTION

Which code indicates radio-communication failure?

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QUESTION

Which code indicates unlawful interference?

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QUESTION

Which code is selected for interception?

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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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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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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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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 the default when ATS gives no code instruction?

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QUESTION

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

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QUESTION

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

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QUESTION

When must the pilot use IDENT?

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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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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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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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ANSWER

The code that ATS instructs.

SERA.13005(b)(1)–(3)

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QUESTION

What does the IDENT feature do?

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QUESTION

When must the transponder be operated in flight?

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Transponder operating procedures and phraseology
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QUESTION

When must Mode C be operated?

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QUESTION

How often does ATS verify the Mode C level?

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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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ANSWER

It highlights the aircraft on the controller's display.

SERA.13001(b)

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ANSWER

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

SERA.13010(b)

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ANSWER

Continuously, unless ATS says otherwise.

SERA.13010(a)

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QUESTION

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

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QUESTION

How is the code 2000 spoken?

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QUESTION

How is the code 2400 spoken?

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QUESTION

Is readback of an SSR code required?

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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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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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ANSWER

Each digit separately: squawk two four zero zero.

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

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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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QUESTION

Which phrase does ATS use for the emergency code?

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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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QUESTION

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

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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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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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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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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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Transponder operating procedures and phraseology
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QUESTION

How many Mode A codes are available?

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QUESTION

How long is the aircraft address?

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QUESTION

What does a transponder mandatory zone require?

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Transponder operating procedures and phraseology
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QUESTION

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

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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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ANSWER

4 096 codes, each with 4 digits.

SERA Appendix 6, Item 10

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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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Transponder operating procedures and phraseology
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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 pressure reference does Mode C report, and what can cause a level mismatch?

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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

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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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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