EN ROUTE - STAGE IV

**Refresher Unit 07
Beacon Code Assignments**

Course 55055

Federal Aviation
Administration

FOREWORD

<u>Purpose</u>. This Air Traffic Refresher Unit provides for the systematic review of current Air Traffic Control operational procedures.

This publication is for use in the technical training of FAA Air Traffic Control Specialists. It does not replace, substitute for, or supersede official regulations, procedures, or directives.

<u>Review</u>. Training programs established under the Government Employees Training Act are based on actual needs, and a review of these training needs is conducted at least once every three years.

<u>Recommended Changes</u>. Suggested changes and corrections to this training material should be forwarded to:

<div align="center">

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PREFACE

This refresher unit replaces all previous versions of ER-11-7, Beacon Code Assignments, and reflects the latest technical changes found in the referenced source documents through February 2010, including FAA Order JO 7110.65. See "Stage IV Changes 02/11/10 on the lesson materials download page. The contents of this unit are current as of the date shown on the cover. The material herein will be kept current through unit replacement. This unit is not to be used as a Standard Operating Procedure (SOP). In all cases, a controller's good judgment is uppermost in applying the procedures advocated.

INSTRUCTIONS

1. Write your answers to the questions in the Question Section on a separate piece of paper. This will allow the unit to be reused.

2. Compare your answers with those in the Answer and Discussion Section.

3. If you answer any questions incorrectly, study the discussion paragraph(s).

4. Review the references given in the Answer and Discussion Section.

5. An informal discussion of this unit with other specialists may help clarify any ambiguities.

BEACON CODE ASSIGNMENTS
Question Section

DIRECTIONS: ITEMS 1 THROUGH 5 AND 7 THROUGH 10 REQUIRE A SHORT ANSWER OF ONE OR TWO SENTENCES. ITEM 6 IS COMPLETION. WRITE YOUR ANSWER USING THE APPROPRIATE WORD(S) OR PHRASE(S).

1.   After accepting a handoff, when may you change an aircraft's beacon code?

2.   What code subset is allocated for aircraft operating above FL600?

3.   What code, other than 1200, may be assigned to VFR aircraft on authorized Search and Rescue (SAR) missions for the U.S. Air Force (USAF) or U.S. Coast Guard (USCG)?

4.   What is the phraseology to inform an aircraft with an operable transponder that the assigned beacon code is **NOT** being displayed?

5.   What is the phraseology to advise an aircraft to change its beacon code when canceling IFR? (List two.)

6.   When the pilot of an aircraft that is **NOT** radar identified declares an emergency, assign code _____. The phraseology is "_____."

7.   What code used by a pilot signifies partial or complete radio failure?

8.   What is the phraseology to instruct an aircraft to change its transponder to standby or low-sensitivity operation?

9.   What is the phraseology (nonmilitary and military) to instruct an aircraft to turn off its transponder?

10. What is the phraseology to instruct an aircraft to turn off the altitude reporting feature of its transponder?

BEACON CODE ASSIGNMENTS
Answer and Discussion Section

1. After accepting a handoff, when may you change an aircraft's beacon code?

    ANSWER: When the aircraft is within your area of responsibility, unless otherwise specified in a directive or Letter of Agreement or coordinated at the time of handoff.

    REFERENCE: JO 7110.65, par. 5-2-5

    DISCUSSION: The transferring controller is required to maintain the identity of all aircraft in his/her area of responsibility. Changing the beacon code prior to the aircraft leaving the transferring controller's airspace may cause the transferring controller to lose the identity of the aircraft.

2. What code subset is allocated for aircraft operating above FL600?

    ANSWER: 4400

    REFERENCE: JO 7110.65, par. 5-2-10

    DISCUSSION: Mode 3/A, code 4400, and discrete codes 4440 through 4465 are reserved for use by R-71, F-12, U2, B57 pressure suit flights, and aircraft operations above FL600. Specific allocation of the special use codes in subset 4400 is in the National Beacon Code Allocation Plan (NBCAP), Order 7110.66.

3. What code, other than 1200, may be assigned to VFR aircraft on authorized Search and Rescue (SAR) missions for the U.S. Air Force (USAF) or U.S. Coast Guard (USCG)?

    ANSWER: 1277

    REFERENCE: JO 7110.65, par. 5-2-9b, note 2

    DISCUSSION: VFR aircraft that fly authorized SAR missions for the USAF and USCG may be advised to squawk 1277 in lieu of 1200 while en route to, from, or within the designated search area.

4. What is the phraseology to inform an aircraft with an operable transponder that the assigned beacon code is **NOT** being displayed?

    ANSWER: "(identification) RESET TRANSPONDER, SQUAWK (appropriate code)."

    REFERENCE: JO 7110.65, par. 5-2-14

    *DISCUSSION: When the assigned beacon code is **NOT** being displayed, the full data block will read "NONE" in Field E. If a code other than the assigned code is being received, it will be displayed in Field E in four digits.*

BEACON CODE ASSIGNMENTS
Answer and Discussion Section *(Continued)*

5. What is the phraseology to advise an aircraft to change its beacon code when canceling IFR? (List two.)

    ANSWER: "SQUAWK VFR" or "SQUAWK 1200"

    REFERENCE: JO 7110.65, par. 5-2-9

    DISCUSSION: Instruct IFR aircraft that cancel an IFR flight plan and are not requesting radar advisory service, and VFR aircraft for which radar advisory service is being terminated, to squawk the VFR code.

    For aircraft operating with a clearance specifying VFR conditions on top, or VFR aircraft receiving radar advisories, you may assign an appropriate function code or computer-assigned code for the code environment in which you are providing service. (Ensure that the aircraft is within your area of responsibility, or that prior coordination has been effected with the facility/sector in whose area an aircraft is operating, and an operational benefit will be gained.)

6. When the pilot of an aircraft that is **NOT** radar identified declares an emergency, assign code _____. The phraseology is "_____."

    ANSWER: 7700; "SQUAWK MAYDAY ON 7700."

    REFERENCE: JO 7110.65, par. 5-2-7

    DISCUSSION: Except for single-piloted turbojet aircraft and single-piloted helicopters, you may request the aircraft to change from code 7700 to another code once you establish radio and radar contact. Use the phraseology "IF FEASIBLE, SQUAWK (code)." This code change will signify to other radar facilities that the aircraft in distress is identified and under ATC control. If should be noted that the pilot may not concur with the code change due to the nature of the emergency and/or flight conditions.

BEACON CODE ASSIGNMENTS
Answer and Discussion Section *(Continued)*

7. What code used by a pilot signifies partial or complete radio failure?

   ANSWER: 7600

   REFERENCE: JO 7110.65, pars. 5-2-8, 10-4-4

   DISCUSSION: When an aircraft is observed squawking 7600, broadcast clearances through any available means of communications. This includes, but is not limited to, the use of emergency frequencies, Flight Service Stations (FSSs), Aeronautical Radio Incorporated (ARINC), and the voice feature of NAVAIDs. Attempt to establish or reestablish communication by having the aircraft use its transponder or make turns to acknowledge clearances and answer questions. Some UHF-equipped aircraft have VHF navigation equipment and are able to receive 121.5 MHz.

   During Stage A operation, code 7600 will be displayed as "RDOF" blinking in the data block.

8. What is the phraseology to instruct an aircraft to change its transponder to standby or low-sensitivity operation?

   ANSWER: "SQUAWK STANDBY" or "SQUAWK LOW"

   REFERENCE: JO 7110.65, par. 5-2-12

   DISCUSSION: Standby may be used as a method of radar identification (JO 7110.65, par. 5-3-3c). Low-sensitivity operation may be assigned if necessary, but national standards no longer require improved transponders to be equipped with the low-sensitivity feature. Therefore, aircraft with late-model transponders will be unable to respond to a request to "SQUAWK LOW."

9. What is the phraseology (nonmilitary and military) to instruct an aircraft to turn off its transponder?

   ANSWER: For nonmilitary aircraft, "STOP SQUAWK"; for military aircraft, "STOP SQUAWK (mode is use)"

   REFERENCE: JO 7110.65, par. 5-2-22

   DISCUSSION: Inform an aircraft when you want it to turn off its transponder. This need may arise if an aircraft's transponder is malfunctioning.

BEACON CODE ASSIGNMENTS
Answer and Discussion Section *(Continued)*

10. What is the phraseology to instruct an aircraft to turn off the altitude reporting feature of its transponder?

ANSWER: "STOP ALTITUDE SQUAWK."

REFERENCE: JO 7110.65, par. 5-2-20

DISCUSSION: If an aircraft's altitude reporting feature is malfunctioning, you may want to have the aircraft turn off this feature. You should keep in mind that not all aircraft can disengage the altitude squawk independently from the beacon code squawk. On some aircraft, both functions are controlled by the same switch.

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