

## RA 3226 – ► Cooperative ◀ Surveillance Radar

### Rationale

► A co-operative surveillance radar<sup>1</sup> provides Controllers with critical information regarding Aircraft identity, position, and Altitude. Without accurate information from the radar, the safe management of Air Traffic would become significantly more complex, potentially increasing the Risk of errors and Incidents. To ensure the efficient and safe execution of Air Traffic Services (ATS), the accuracy of the information provided by the co-operative surveillance radar must be confirmed as accurate. ◀

### Contents

**3226(1): Validation of Mode 3/A Codes**

**3226(2): Verification of Mode C Data**

**3226(3): Level Occupancy using ► Cooperative ◀ Surveillance Radar**

### Regulation 3226(1)

#### Validation of Mode 3/A Codes

3226(1) A Controller assigning any Mode 3/A code **shall** validate the code as soon as possible.

### Acceptable Means of Compliance 3226(1)

#### Validation of Mode 3/A Codes

1. Mode 3/A codes **should** be validated as follows:
  - a. A Controller assigning any Mode 3/A code **should** validate the code by checking as soon as possible, either by direct reference to their surveillance display or with the assistance of another controlling agency, that the data displayed corresponds with the code which has been assigned.
    - (1) ► If this is not the case, the pilot **should** be instructed to reset the assigned code. Where this fails to achieve display of the assigned code, then the pilot **should** be instructed to select Secondary Surveillance Radar (SSR) mode A 0000.
    - (2) If a corrupt code still exists, the pilot **should** normally be instructed to switch off the transponder. However, where approved by local procedures and provided the Mode C has been verified, the corrupt code may be retained to assist identification and tracking. Associated ATS units **should** be informed of the retention of corrupt data. ◀
  - b. ► ◀
  - c. ► ◀
  - d. At units where code callsign conversion equipment is in use, procedures to ensure the correct correlation of the callsign with the assigned code **should** be utilized by Controllers and included in Local / Unit Orders.
  - e. Where a Controller can ascertain from the code allocation plan that a discrete Mode 3/A code has been assigned by a unit capable of validating the code and has not been notified that the code is corrupt, then that code **should** be deemed validated.
2. SSR Code assignments mean that codes may be re-used in more than one area and Controllers **should** therefore act with caution in areas where duplicate code allocations may occur.

### Guidance Material 3226(1)

#### Validation of Mode 3/A Codes

3. **Code Allocation Plan.** Controllers assign Mode 3/A codes to Aircraft according to the code allocation plan, which comprises:
  - a. Discrete codes comprising:

<sup>1</sup> Throughout this RA, any reference to ► Cooperative ◀ surveillance radar is equally applicable to Wide Area Multilateration (WAM), ► Secondary Surveillance Radar (SSR) ◀ and Automatic Dependant Surveillance Broadcast.

**Guidance  
Material  
3226(1)**

- (1) Domestic codes which are allocated to Aircraft flying within the Areas of Responsibility (AoR) of a unit.
  - (2) Centralised ► **Mode 3/A** ◀ Code Assignment and Management System (CCAMS) codes which are assigned to international flights will normally be retained beyond the AoR of the assigning unit.
- b. Special purpose codes allocated internationally.
  - c. Conspicuity codes, allocated nationally, or to specific users / units.

**Regulation  
3226(2)**

**Verification of Mode C Data**

3226(2) Controllers **shall** verify Mode C data transmitted by Aircraft for accuracy on initial contact once the Aircraft has been positively identified.

**Acceptable  
Means of  
Compliance  
3226(2)**

**Verification of Mode C Data**

4. ► ◀
5. Mode C data **should** be verified by one of the following methods:
  - a. By a visual check of the data readout ► ◀ on receipt of a pilot's report giving their present or passing level<sup>2</sup>. ► ◀ Care **should** be exercised when assessing the accuracy of the Mode C readout if the Aircraft is climbing or descending.
  - b. By coordination with another unit.
6. There is no requirement to monitor Mode C readouts for possible discrepancies once verification has been effected, nor is it necessary to notify a pilot whose Mode C data is within the permitted limit. However, if a Controller observes a discrepancy of more than 200 ft either during initial verification or during the subsequent provision of an ATS, the Controller **should**:
  - a. Ask the pilot to confirm their altimeter setting and level.
  - b. If the discrepancy remains, the pilot **should** be instructed to switch off Mode C. If independent switching of Mode C is not possible the pilot **should** be instructed to select SSR mode A 0000 to indicate a transponder malfunction.
7. A Mode C readout may be deemed verified if it is associated with a validated, or deemed validated, Mode 3/A code. Codes with which the associated Mode C data **should** be considered unvalidated and unverified are annotated accordingly in the UK SSR Code Allocation Plan.

**Guidance  
Material  
3226(2)**

**Verification of Mode C Data**

8. ► **Nil.** ◀

**Regulation  
3226(3)**

**Level Occupancy using ► **Cooperative** ◀ **Surveillance Radar****

3226(3) Controllers **shall** ensure specified criteria are met when utilizing ► **Cooperative Surveillance Radar** ◀ to assess level occupancy.

**Acceptable  
Means of  
Compliance  
3226(3)**

**Level Occupancy using ► **Cooperative** ◀ **Surveillance Radar****

9. **Criteria for Assessing Level Occupancy.** The assessment of level occupancy by use of verified Mode C **should** be based on the following criteria:
  - a. **In Level Flight.** An Aircraft **should** be considered to be at an assigned level provided that the Mode C readout indicates 200 ft or less from that level.

<sup>2</sup> In this context level may refer to Altitude, Height or flight level.

**Acceptable  
Means of  
Compliance  
3226(3)**

- b. **Vacating an Assigned Level.** An Aircraft which is known to have been cleared to vacate a level **should** be considered to have done so when the Mode C readout indicates a change of 400 ft or more in the anticipated direction.
- c. **Passing a Level.** An Aircraft climbing or descending **should** be considered to have passed through a level when the Mode C readout indicates that the level has been passed by 400 ft or more in the required direction.
- d. **Reaching a Level.** An Aircraft **should** be considered to have reached an assigned level when three successive Mode C readouts indicate 200 ft or less from that level.

**Guidance  
Material  
3226(3)**

**Level Occupancy using ► Cooperative ◀ Surveillance Radar**

- 10. ► Nil. ◀

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