

RA 3241 – Secondary Surveillance Radar Alone Operations

Rationale

The utilization of Primary Surveillance Radar (PSR) and Secondary Surveillance Radar (SSR)¹ provides the optimal surveillance coverage when providing Air Traffic Services (ATS). The temporary withdrawal of PSR due to failure or Maintenance, or where no PSR coverage exists, may introduce hazards such as the inability to warn Air System operators of non-transponding Air Systems. Heads of Establishment (HoE) and Aviation Duty Holder (ADH)-Facing organizations require SSR Alone procedures and dedicated contingency operations to ensure that ATS can continue to be provided in an SSR Alone environment to all Air Systems and to assist ADH's in ensuring the Risk to Life (RtL) is As Low As Reasonably Practical (ALARP) and Tolerable.

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Regulation 3241(1)

Secondary Surveillance Radar Alone Operations

3241(1) HoEs and ADH-Facing organizations **shall** ensure that in the event of PSR unavailability, UK Flight Information Services (FIS) and Radar Control Service (RCS) can continue to be provided utilizing SSR when requested by the Air System operator and agreed by the controller.

Acceptable Means of Compliance 3241(1)

Secondary Surveillance Radar Alone Operations

1. Where PSR is unavailable on either a permanent (where no PSR coverage exists eg certain areas within the Scottish Flight Information Region (FIR)) or temporary basis (eg following equipment failure or during periods of Maintenance), RCS and UK FIS **should** continue to be provided in accordance with (iaw) RA 3223³, RA 3224⁴, Civil Air Publication (CAP) 413 Radiotelephony Manual and CAP 774 UK FIS.
2. Within Class A, C, D and E Airspace, Class C Airways, Terminal Manoeuvring Areas, Terminal Control Areas, Control Areas and Transponder Mandatory Zones, SSR Alone ATS **should** only be provided where procedures are specifically authorized by Civil Aviation Authority (CAA) Safety and Airspace Regulation Group (Airspace Regulation) (SARG(AR)) and published within Unit Order Books or Standard Operating Procedures (SOP) as appropriate.

Guidance Material 3241(1)

Secondary Surveillance Radar Alone Operations

3. Controllers use two types of surveillance systems: PSR and SSR. PSR is the primary surveillance system employed by controllers for the control of Air Systems and is normally the minimum level of surveillance equipment required to provide a RCS, Deconfliction or Traffic Service. SSR is normally employed to assist in Air System identification and to establish the level⁵ of the Air System.
4. When operating SSR Alone, only transponding Air Systems will be visible to the controller on the surveillance display. Air Systems that are not equipped with a transponder, or where the transponder has not been selected to transmit will not be

¹ ► Throughout this RA, any reference to SSR is equally applicable to Wide Area Multilateration and Automatic Dependant Surveillance Broadcast.

² Refer to ◀ RA 1020 –► ◀ Aviation Duty Holder and Aviation Duty Holder-Facing Organizations –► Roles and Responsibilities. ◀

³ RA 3223 – Provision of Air Traffic Service Inside Control Controlled Airspace.

⁴ RA 3224 –► UK ◀ Flight Information Services ►◀.

⁵ Level is a general term which can be used to describe the Flight Level, Height or Altitude an air system is operating at.

**Guidance
Material
3241(1)**

displayed. Consequently, controllers will be unable to warn pilots of the proximity of non-transponding Air Systems.

5. The Aircraft Commander is ultimately responsible for the safety of their Air System, crew and passengers. Although they may not be the handling pilot, it is vital that they understand any increased RtL associated with operating in an SSR Alone environment and that they take the appropriate action to ensure the safety of the flight, specifically with regard to avoidance of mid-air collisions (MAC).

**Regulation
3241(2)**

Secondary Surveillance Radar Alone Contingency Operations
3241(2) HoEs and ADH-Facing organizations **shall** employ contingency operations when SSR Alone operations are required in order to minimize the exposure of ADH Air Systems and other airspace users to the SSR Alone environment.

**Acceptable
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Secondary Surveillance Radar Alone Contingency Operations

6. The planned or unplanned withdrawal of a surveillance system is a significant safety related change and removes a barrier associated with the prevention of MAC. HoEs and ADH-Facing organizations **should** assist ADHs through safety managing SSR Alone ATS provision iaw RA 1020(4)⁶◀. The loss of PSR will either result from equipment failure or planned Maintenance. HoEs and ADH-Facing organizations **should** assist ADHs in mitigating the hazards associated with the loss of PSR through the production of procedures that address:

- a. Contingency (equipment failure).
- b. Planned withdrawal (eg Maintenance schedules).

7. SSR Alone operating procedures **should** be promulgated in Local / Unit Orders or SOPs (these procedures **should** be captured iaw RA 1026⁷).

8. HoEs and ADH-Facing organizations **should**:

- a. Establish formal mechanisms to ensure robust communication to ADHs and other airspace users of the procedures associated with equipment failure or the planned withdrawal of PSR.
- b. Inform adjacent air navigation service providers and the Distress and Diversion Cell when operating SSR Alone.
- c. Issue a Notice to Airmen advising of loss of PSR.
- d. Inform Air System operators prior to transfer (handover or freecall) if the receiving unit is operating SSR Alone.

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Secondary Surveillance Radar Alone Contingency Operations

9. While not exhaustive, the factors listed below may be considered when developing SSR Alone procedures:

- a. Surveillance Radar coverage of adjacent units in order to handover Air System being provided with an ATS.
- b. The potential to deploy controllers to adjacent units.
- c. Local airspace activities.
- d. Agreements with local aerodrome and airspace activity providers (eg parachuting or paragliding organizations).
- e. Management of Instrument Flight Rules (IFR) procedures to mitigate the impact of hazardous areas (eg adjusting instrument procedures to avoid known gliding sites).

⁶ ▶ Refer to RA 1020(4): Responsibilities of Aviation Duty Holder-Facing Organizations.

⁷ Refer to ◀ RA 1026 – Aerodrome Operator ▶ and Aerodrome Supervisor (Recreational Flying) Roles and Responsibilities including Aerodrome and Helicopter Landing Site Assurance Requirements. ◀

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- f. The scheduling of PSR Maintenance programmes.

**Regulation
3241(3)**

Aviation Duty Holder Responsibilities – Secondary Surveillance Radar Alone Operations
3241(3) Withdrawn – Detail in RA 1020.

**Acceptable
Means of
Compliance
3241(3)**

Aviation Duty Holder Responsibilities – Secondary Surveillance Radar Alone Operations
10. Withdrawn – Detail in RA 1020.

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Aviation Duty Holder Responsibilities – Secondary Surveillance Radar Alone Operations
11. Nil.

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