

► This RA has been substantially re-written; for clarity no change marks are presented - please read RA in entirety ◀

RA 5219 - Instrumentation and Accident Data Recorder Requirements for Flight Tests of Aircraft

Rationale *Instrumentation is required for Contractors' and official flight tests of new types of aircraft, and of aircraft incorporating major modifications. The installation of an Accident Data Recorder (ADR) may also be required.*

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Regulation 5219(1)

Instrumentation and ADR¹ Requirements

5219(1) As soon as possible after the flight test programme has been agreed, the Type Airworthiness Authority (TAA) **shall** consider the need for installation of instrumentation and Accident Data Recorder (ADR) for the purposes of the flight test programme, in consultation with the Contractor.

Acceptable Means of Compliance 5219(1)

Instrumentation and ADR Requirements

1. The instrumentation and ADR requirements, including the parameters to be measured, **should** be formally recorded
2. The following requirements **should** be considered:
 - a. Instrumentation required in each aircraft allocated for flight trials.
 - b. Provision for automatic monitoring and recording.
 - c. Provision for navigational or safety aids necessary for the safe, speedy and satisfactory conduct of the flight trials.
 - d. Provision of ADR for:
 - (1) Trials of major modifications.
 - (2) Trials which seek to extend the approved flight limitations or which entail an extra-to-normal hazard.
 - (3) Trials of any special equipment installation which might affect the safety of the aircraft.
3. The instrumentation methods, standards and the installation **should** meet the requirements of the MOD establishment primarily concerned with the trials. All installations **should** conform to the airworthiness and strength requirements applicable to the aircraft concerned, or by agreement with the TAA to the requirements of Def Stan 00-970.
4. The Contractor **should** submit all relevant information on the instrumentation to the TAA.
5. The instrumentation drawings **should** be included in the Configuration Status Record (CSR) or equivalent drawing list for the aircraft.
6. The Contractor **should** demonstrate to the satisfaction of the TAA, with appropriate tests and safety arguments, that the installation, when completed, is safe and effective.

¹ The term ADR utilized in this RA may also be taken to read Flight Data Recorder (FDR).

**Guidance
Material
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Instrumentation and ADR Requirements

7. The MOD may assist the Contractor by obtaining and/or modifying instrumentation and equipment when by so doing there are special advantages to the flight trials programme.
8. The term 'instrumentation' in this RA refers to all items which are fitted temporarily to an aircraft specifically for carrying out flight tests and which will be subsequently removed.
9. The European standard for FDR which may be referenced is 072/ED-112A – MOPS for Crash Protected Airborne Recorder Systems.

**Regulation
5219(2)**

Accident Data Recorder (ADR) for Flight Trials

5219(2) Withdrawn - Incorporated into RA5219(1).

**Acceptable
Means of
Compliance
5219(2)**

Accident Data Recorder (ADR) for Flight Trials

10. Withdrawn - Incorporated into RA5219(1).

**Guidance
Material
5219(2)**

Accident Data Recorder (ADR) for Flight Trials

11. Withdrawn - Incorporated into RA5219(1).

**Regulation
5219(3)**

Identification of Instrumentation

5219(3) When instrumentation is installed in aircraft for use at MOD establishments it **shall** be marked in orange in order that its experimental nature is readily identified.

**Acceptable
Means of
Compliance
5219(3)**

Identification of Instrumentation

12. Mountings and fixed items of instrumentation equipment **should** be painted orange (BS 381 colour 592 or equivalent).
13. The visible surfaces of all items of removable instrumentation/equipment **should**;
 - a. Be painted orange, or
 - b. Incorporate an orange stripe, or
 - c. For small instruments incorporate an orange spot.

**Guidance
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5219(3)**

Identification of Instrumentation

14. For paragraph 13 b and c. the stripe or spot is to be readily visible both against the equipment background colour and in the installed condition. The stripe or spot is to be highlighted by white edging if necessary.
15. The requirements of this RA do not apply to equipment which is under test.