

RA 5219 - Instrumentation and ►Flight◄ Data Recorder Requirements for Flight ►Trials◄ of Aircraft

Rationale *Instrumentation is ►often◄ required for Contractors and official flight ►trials◄ of new types of aircraft, and of aircraft incorporating major modifications, ►to facilitate the gathering of trial data. Importantly, the recording of flight trial data can also be used for post-event analysis in case of an unexpected incident or accident◄. The installation of a ►crashworthy Flight Data Recorder (FDR)◄ may ►therefore◄ be required.*

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Regulation 5219(1) **Instrumentation and ►FDR◄ Requirements**
5219(1) The Type Airworthiness Authority (TAA) **shall ►agree◄** the need for installation of instrumentation and ►a crashworthy FDR◄ for the purposes of the flight ►trial◄ programme, in consultation with the Contractor.

Acceptable Means of Compliance 5219(1) **Instrumentation and ►FDR◄ Requirements**

1. The instrumentation and ►FDR◄ 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, ►including telemetry◄.
 - c. Provision of ►a crashworthy FDR which meets the requirements of Def Stan 00-970 Part 13 Para 1.3 for crashworthiness and parameters / sampling rates for: ◄
 - (1) Trials of major modifications.
 - (2) Trials which seek to extend the approved flight limitations or which entail an ►increased◄ hazard.
 - (3) Trials of any special equipment installation which might affect the safety of the aircraft.
 - d. ►The parameters to be recorded, including sampling rates, when considering the sub-paragraphs above.
 - e. Provision for navigational or safety aids necessary for the safe, speedy and satisfactory conduct of the flight trials. ◄
3. ►◄ 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 ►the applicable airworthiness code◄.
4. The Contractor **should** submit all relevant information on the instrumentation ►and FDR◄ to the TAA.
5. The instrumentation drawings **should** be included in the Configuration Status Record ►◄ or equivalent drawing list for the aircraft.
6. The Contractor **should** demonstrate to the satisfaction of the TAA, with appropriate ►trials◄ and safety arguments, that the installation, when completed, is safe and effective.

**Guidance
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5219(1)****Instrumentation and FDR Requirements**

7. The MOD may assist the Contractor by obtaining and/or modifying instrumentation and equipment when by so doing there are 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 trials and which will be subsequently removed.
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**Regulation
5219(2)****Identification of Instrumentation**

- 5219(2) When instrumentation is installed in Military Registered Aircraft it **shall** be marked in orange in order that its experimental nature is readily identified.

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

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

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12. The orange 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.
13. The requirements of this regulation do not apply to equipment which is under test.