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# Workshop Safety, Tool Control and Calibration

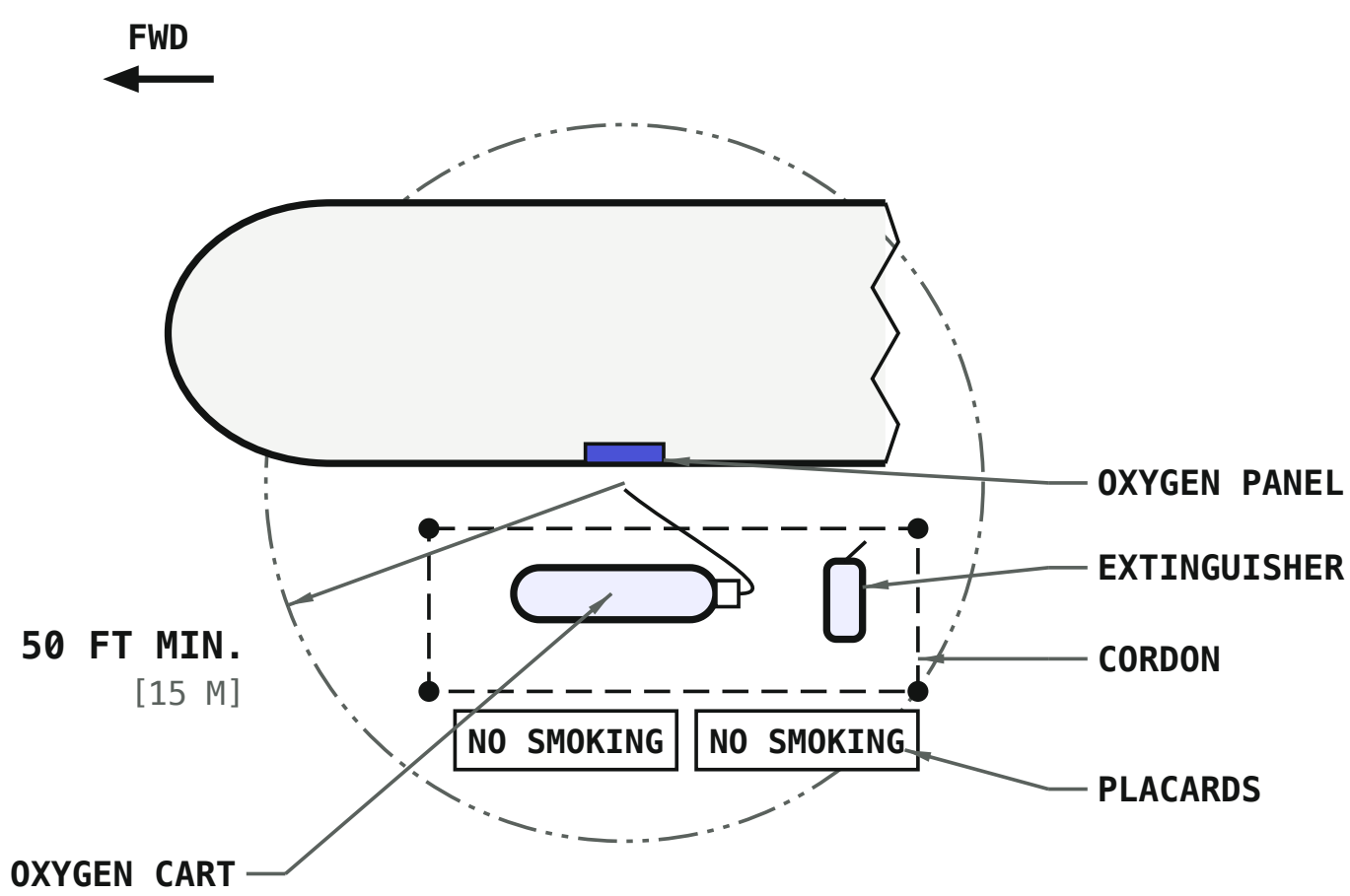
Oxygen · electricity · fluids · fire classes · extinguishers · calibration

## 1 Identification

REFERENCE DRAWING — NOT APPROVED DATA · THE SRM ALWAYS GOVERNS

### VIEW A · OXYGEN SERVICING

PLAN · FAA-H-8083-31B P. 16-20




NO SMOKING OR OPEN FLAME WITHIN 50 FT [15 M] AT LEAST
HANDS, CLOTHING, TOOLS FREE OF OIL, GREASE, DIRT (9-48)
CLOSE THE VALVE, RELEASE PRESSURE; FITTINGS OFF SLOWLY
CYLINDERS: COOL, VENTILATED, AWAY FROM PETROLEUM (9-51)
EXTINGUISHERS: MONTHLY VISUAL, YEARLY MAINTENANCE (1910.157)

### VIEW B · FIRE CLASSES

FAA-H-8083-31B PP. 17-1, 17-9, 17-10

| AGENT | A | B | C | D |
|---|---|---|---|---|
| WATER | ✓ | – | ⊗ | – |
| CO2 | – | ✓ | ✓ | ⊗ |
| HALON | ✓ | ✓ | ✓ | ⊗ |
| DRY CHEMICAL | ✓ | ✓ | ✓ | – |
| LISTED AGENT | – | – | – | ✓ |

A WOOD, CLOTH, PAPER, RUBBER, PLASTICS
B LIQUIDS, OILS, GREASES, SOLVENTS, PAINTS, FLAMMABLE GASES
C ENERGIZED ELECTRICAL EQUIPMENT
D MAGNESIUM, TITANIUM, ZIRCONIUM, SODIUM, LITHIUM, POTASSIUM

DRY CHEMICAL ON A: ONLY IF RATED A, B, C
C: NEVER A CONDUCTIVE AGENT
HALON ON D MAY REACT VIGOROUSLY
CO2 DOES NOT PUT OUT MG OR TI
LISTED AGENT: THE ONE FOR THAT METAL

**NOTES**

1. Inches; [ ] = millimeters, reference only. Typical: the SRM governs.
2. For reference. The applicable manual always governs.
3. Based on FAA-H-8083-31B pp. 16-20, 17-1, 17-9, 17-10; AC 43.13-1B 9-48 to 9-51.

**REVISIONS**

| REV | DESCRIPTION | YEAR |
|---|---|---|
| A | First issue | 2026 |

| The Aviation Point. | | | Structural repair reference |
|---|---|---|---|
| TITLE: Workshop safety: oxygen and fire | | | |
| DRAWING NO.: TAP-DWG-SC08 | REV: A · 2026 | SCALE: NTS | SHEET: 1 OF 1 |
| APPLIES TO: Hangar and workshop | | | |
| DO NOT SCALE DRAWING | | | |

Oxygen work: clean hands and tools, valve closed and pressure released before a fitting is opened.

## Fire classes and agents

| Class | Agents | Do not use |
|---|---|---|
| A | Water (cools and soaks); Halon; dry chemical rated A, B, C (mono-ammonium phosphate) | — |
| B | CO2, Halon, dry chemical | — |
| C | A non-conductive agent: CO2, Halon, dry chemical | Conductive agents |
| D | —: the agent listed for that metal (NFPA 10) | Halon (may react vigorously); CO2 (does not put out magnesium or titanium) |



Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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## 2 Allowable damage

### Extinguisher checks

| Check | Interval or rule | Source |
|---|---|---|
| Charged, operable, in its place | At all times except during use | 29 CFR 1910.157(c)(4) |
| Visual inspection | Monthly | 1910.157(e)(2) |
| Maintenance check | Yearly; the date recorded and kept one year after the last entry or the life of the shell, whichever is less | 1910.157(e)(3) |
| Stored-pressure dry chemical, 12-year hydrostatic type | Emptied and maintained every 6 years | 1910.157(e)(4) |
| Hydrostatic test, 5 years | Water and antifreeze types, wetting agent, foam and soda acid (stainless steel shells), AFFF, loaded stream, carbon dioxide, dry chemical with stainless steel shell | 1910.157(f), table L-1 |
| Hydrostatic test, 12 years | Dry chemical stored pressure (mild steel, brazed brass, aluminum shells); dry chemical or dry powder cartridge or cylinder operated (mild steel); Halon 1211; Halon 1301 | Table L-1 |
| Training | On hire and at least yearly | 1910.157(g)(2) |

### Calibration: what the rules require

| Item | Requirement | Source |
|---|---|---|
| EASA Part-145 | All tools, equipment and particularly test equipment, as appropriate, controlled and calibrated to an officially recognized standard, at a frequency that ensures serviceability and accuracy; calibration records and traceability to the standard used kept | Reg. (EU) 1321/2014 Annex II, 145.A.40(b) |
| Officially recognized standard | Established or published by an official body and widely recognized by the air transport sector as good practice | AMC 145.A.40(b) |
| FAA repair station | Test and inspection equipment and tools used to make airworthiness determinations calibrated to a standard acceptable to the FAA; equipment on the premises and under the station's control when the work is done | 14 CFR 145.109(a), (b) |
| Any mechanic | The tools, equipment and test apparatus needed to complete the work to accepted industry practice; the maker's special equipment or an equivalent acceptable to the Administrator | 14 CFR 43.13(a) |
| Traceability | Standards derived from and traceable to NIST, to the test equipment maker's standards, or, for foreign equipment, to that country's standards if the Administrator approves | AC 43.13-1B 12-71a |
| Interval | Meters, torque wrenches, static and transponder test equipment: at least once a year. Accepted practice is usually one year; type, environment, use, the maker's recommendation and past calibration history decide | 12-72, 12-72e |
| Records | Traceability checked from the NIST test report numbers on the calibration records | 12-72c |
| The standard itself | A standard used to calibrate is not used to perform maintenance | 12-72d |
| Torque wrenches | The sources give different intervals: see Torque wrench | — |

## 3 Repair

1. Work to the manual.
2. Make safe: power, pressure.
3. Cap openings.
4. Torque, then lock.
5. Test and record.

### Key points

- No oil or grease near oxygen; no smoking or flame within 50 ft (15 m) (FAA-H-8083-31B p. 16-20).
- Power off before cleaning electrical connections (AC 43.13-1B 11-4).
- Calibration traceable to a recognized standard, records kept (145.A.40(b); AC 43.13-1B 12-71).

**MAIN SOURCES** · FAA AC 43.13-1B CHG 1, Acceptable Methods, Techniques, and Practices: Aircraft Inspection and Repair · FAA-H-8083-31B, Aviation Maintenance Technician Handbook: Airframe · NFPA 10, Standard for Portable Fire Extinguishers · OSHA 29 CFR 1910.157, Portable fire extinguishers · OSHA 29 CFR 1910.1200, Hazard communication · 14 CFR 43.9, 43.13 and 145.109 · Regulation No 1321/2014, Annex II, and AMC

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