



DOT CYLINDER TESTING AND REQUALIFICATION

DOT HAZMAT TRAINING – MEETING CFR49 172.700

(ADR training also available)

*The best documented, best structured CFR49 masterclass on the planet
(and we also fix \$250 training!)*

**** INCLUDES CFR49 AMENDMENTS EFFECTIVE FROM 27th JAN 2021 ****

Internet / Zoom Instructor Lead Training available

See separate distance learning information addressing EASA AMC 147.A.130(a) and CAA CAP



Courses overhauled in response to Covid-19. Courses assume no prior knowledge, all courses are ab-initio.

- ✓ Comprehensive training manual – 200 pages of information, current CFR49, essential checklists, manufacturer symbols library, self-study worksheets and reference material.
- ✓ Fully covers the details of testing each specification tested by you (including all Special Permits)
- ✓ Easy to follow structured learning experience. No other course does this.
- ✓ Training provided to IIA's, operators, technicians, managers and quality engineers, new and experienced.

The most frequent reasons for audit findings are due to incorrect training. This is not just incorrect or missing information; it is a failure to ensure the knowledge is understood. This unique course approach checks knowledge comprehension at each stage of the process.

Combines theory and practical elements to ensure delegates have a thorough working knowledge appropriate to tasks performed.

Typical syllabus		
Module Description	Time /hrs	Content
1. General Awareness	3	Background and how/why we test
2. Guided workshop use	2	Instructor led use of YOUR system in YOUR workshop
3. DOT regulations, CFR49	8-10	Rules, regulation and their implementation
4. Visual Inspection	2	Visual requirements using CGA pamphlets
5. Metrology and the CFR	1	Instruments, calibration, use and application
6. Operational use	1-4	Practical hands on
7. Specifications and techniques	1-4	Tips and tricks of different cylinder types including each specification and SP tested
8. Safety	1	Overview and assessment in <u>YOUR</u> workshop
9. System components & troubleshooting	1	Review and use of <u>YOUR</u> system
10. Security	1	Meets DOT security requirements
11. Written exam	3	Multiple choice exam
Practical assessment	1 pp	Hands on coaching and assessment on YOUR system; plus 1 hour per person
DOT appraisal report - optional	4-6	Pre-audit, or surveillance visit. Review processes, systems and knowledge. Used to maintain quality standards and prepare for DOT inspection/audit

(Times are estimates and vary with each course. Individual modules can also be provided if required)

Key points

A unique, informative and exciting in-depth HazMat training course completely satisfying the requirements of CFR49

- Instructor lead synchronous training is more effective, relevant and specific than asynchronous on-line training.
- Proven systematic and progressive teaching and learning structure.
- Reduce disruption with no additional travel costs for staff .
- Specific training on your site on your equipment, on your specifications and cylinder types.
- Remote training can be flexi timed to allow staff to attend to daily duties.
- Specific to staff knowledge, experience and activities performed. Individual focus can be given.
- Easier for non-english speakers as pace is adjusted to match comprehension level and manuals details key points.

TRAINER INFORMATION - Chris Hinchey

- ✓ Over 30 years' experience in the gas cylinder industry
- ✓ Teaching in both hemispheres for 30 years
- ✓ BSc(Hons) Mechanical Engineering. AMIMEchE
- ✓ A trained trainer, trains DOT IIA auditors
- ✓ DOT IIA and ADR auditor; IRCA qualified
- ✓ Chris is highly experienced in the design, installation, maintenance and troubleshooting of numerous pressure testing and handling equipment. Experienced on a wide variety of equipment including self-made and OEM manufacturers



1. Training Need Analysis and Booking Form				
1. 1. Course Required	<input type="checkbox"/> DOT CFR 49 Full HazMat	OR	<input type="checkbox"/> CFR49 Operational/ maintenance only	
	<input type="checkbox"/> CFR49 Audit pre-assessment		<input type="checkbox"/> CFR49 2021 differences	
	<input type="checkbox"/> ADR	OR	<input type="checkbox"/> ADR operational only	
	<input type="checkbox"/> Water jacket	<input type="checkbox"/> Direct expansion	<input type="checkbox"/> Proof test	
	<input type="checkbox"/> Other Specify _____			
	<input type="checkbox"/> Requalifier	OR	<input type="checkbox"/> Cylinder manufacturer	
1. 2. Delivery method	<input type="checkbox"/> Face-to-face	OR	<input type="checkbox"/> Remote	
2. Dates		3. Time zone		
2. 1. Required Date(s)	Option 1	Option 2		
2. 2. Time preference	<input type="checkbox"/> 5 hours / day [extends number of days]	<input type="checkbox"/> Full time, approx. 7 hrs/day		
4. System and cylinder specifications				
3.1. Test system	<input type="checkbox"/> Galiso GTC	<input type="checkbox"/> Galiso RecOpen	<input type="checkbox"/> Galiso Rec4Open	
	<input type="checkbox"/> Ronning	<input type="checkbox"/> Other _____		
3.2. Cylinder types <i>Please list ALL specifications tested – this is the basis of the training scope</i>	<input type="checkbox"/> 3/3A/3AA	<input type="checkbox"/> 3AL	<input type="checkbox"/> 4B/4BA/4BW	
	<input type="checkbox"/> Special Permit(s) <i>Please list ALL _____</i>	<input type="checkbox"/> 4D/DA/DS	<input type="checkbox"/> 3HT	
	<input type="checkbox"/> Other _____			
3.3. Test pressures used	Min	Max		
5. Company details				
5.1. Company Name		RIN number and expiry		
5.2. Company Address				
5.3. Contact Name and email				
5.4. Phone Number		Mobile		
5.5. Training Location [3B]	<i>if Different to Company Address</i>			
<p>All operators require good verbal and written English language skills (i.e. fluent). We must be made aware of any delegates who cannot speak or read English as we can adapt the course accordingly. A translator can be used - additional time may be required.</p> <p>Please state the number that best describes each delegates standard of English in the box below:</p> <p>1) Almost no understanding; 2) Able to read English with assistance. Verbal understanding limited; 3) Basic understanding of spoken and written English; 4) Good understanding, able to understand most verbal and written English; 5) Fluent – able to interpret</p>				
Delegates A standard course accommodates up to 4 operators and 1 manager Managers do not need full proficiency with the equipment and may be Quality Department, support engineers or other persons requiring familiarity but not full operational test system use		English – Enter number as above	Operator /Manager	Previous Training Date
5.6. Delegates Names	1.		<input type="checkbox"/> O <input type="checkbox"/> M	
Please print <u>exactly as it should appear on the certificate</u> <i>More than 4 operators plus 1 supervisor can be accommodated but will incur additional time for practical assessments</i>	2.		<input type="checkbox"/> O <input type="checkbox"/> M	
	3.		<input type="checkbox"/> O <input type="checkbox"/> M	
	4.		<input type="checkbox"/> O <input type="checkbox"/> M	
	5.		<input type="checkbox"/> O <input type="checkbox"/> M	
	6.		<input type="checkbox"/> O <input type="checkbox"/> M	
	7.		<input type="checkbox"/> O <input type="checkbox"/> M	
6. Subjects required				
<input type="checkbox"/> Full CFR49 Hazmat training	- OR -	Specific modules below (not a full training)		
<input type="checkbox"/> General Awareness	<input type="checkbox"/> Guided workshop use	<input type="checkbox"/> DOT regulations, CFR49	<input type="checkbox"/> Visual Inspection	
<input type="checkbox"/> Metrology and the CFR	<input type="checkbox"/> Operational use	<input type="checkbox"/> Techniques, and SP's	<input type="checkbox"/> Safety	
<input type="checkbox"/> Components/troubleshooting	<input type="checkbox"/> Security	<input type="checkbox"/> SP specifics	<input type="checkbox"/> Exam / Practical assessment	
<input type="checkbox"/> DOT appraisal report	<input type="checkbox"/> Other – specify _____			
I confirm information above defines the training need, and all operators have good numeracy				
Signed		Date		

Cancellation Policy.

All of our courses are bespoke; time and materials are prepared considerably in advance and customised for each course. Cancellation or rescheduling more than 30 days before the scheduled date is free of charge. If a course is cancelled within 30 days of the scheduled date, the full course fee is payable. Rescheduling incurs a £250 administration fee.

TRAINING CHECKLIST

To help you to get the best from your training visit please complete the checklist below and return to us when items are completed. **Click each box to confirm ✓**

If the test system is not new it is important that it is working correctly during the visit, as any time spent rectifying it detracts from training time

Daily Timings			
Start		Finish	
Scheduled breaks	Lunch		
	AM		PM

Training requirements Tick each box to confirm ✓

- Use of a "classroom" area near to the test system.
- Use of a projector to link to our laptop, and wall or screen to project on to. ***If you do not have one please let us know***
- Existing system users & repeat trainees have had operational experience**
- Operators need good verbal and written English language skills or Translator provided**
- All operators have good numeracy – able to calculate percentages, fractions and add/subtract**
- The course is a systematic training programme and builds knowledge gradually. Operators must attend all sessions for full certification
- Operators will need to spend study time outside of classes to complete assignments

For distance learning

- Camera and conference quality microphone capable of audio capture for the whole room
- Second camera for practical assessments
- Zoom (preferred) connection and suitable network able to stream vision and audio

Test System must be fully functional

- Able to hold a steady expansion (0.0cc) for at least 2 minutes
- Able to hold maximum pressure – at 8000 psi with the calibration cylinder (or as appropriate); a drop of up to 12 psi in 2 minutes is acceptable (check the cylinder is capable of 8000 psi!)
- Calibration cylinder able to meet all expansion points within 1% and return to 0.0 cc after testing

Documentation

Please have copies available of the following applicable

CFR49	ADR/EU
<input type="checkbox"/> A current copy of Title 49, Code of Federal Regulations, Parts 100-185 <input type="checkbox"/> Current applicable printed copies of LATEST Special Permit documents for SP cylinders being trained <input type="checkbox"/> Compressed Gas Association (CGA) Pamphlets appropriate to cylinders that are tested. Whilst CGA Pamphlet C-1:2016 is not required by CFR 49 171.7, we strongly recommend a copy is available	A copy of other relevant BS EN ISO standards. <input type="checkbox"/> BS EN 1968 <input type="checkbox"/> BS EN 1802 <input type="checkbox"/> BS EN 1803 <input type="checkbox"/> ISO 11623

- Calibration Certificate(s) for the test (working) PID/gauge(s) and other components of the system that may require periodic calibration such as master gauges, scales, burettes etc
- A calibration cylinder and calibration chart showing the cylinder's expansions *if applicable*
- Equipment and/or instruments necessary for external and internal visual inspection
- Recordkeeping form(s) that indicates system calibration and cylinder testing

Completion date: _____

Completed by: _____

A short test

You should be able to get 10/10 if you can't, you may need training!

1. **At the start of testing each day, the system must be able to calibrate within what percentage of the calibration cylinder certificated values?**
 - A) 1%
 - B) No tolerance
 - C) 0.5%
 - D) 0.25%
2. **A calibration cylinder requires recalibration and certification every 10 years**
 - A) Yes
 - B) No
3. **Do you have to record a test aborted due to system failure at between 90% and 100% of test pressure?**
 - A) No
 - B) Yes
4. **Any change in retester personnel must be reported within**
 - A) 90 days
 - B) 20 days
 - C) 3 years
5. **Visual inspection for a DOT-3AA should be carried out using which of the following CGA pamphlets?**
 - A) C1:2016
 - B) C3:2005
 - C) C6:1993
 - D) C6:2013
6. **On the first test on a DOT-3AA-1800 cylinder, test pressure is 3010 psi and gives negative expansion. Correct repeat test pressure is**
 - A) 3100 psi
 - B) 3110 psi
 - C) 3000 psi
7. **Training must be completed within 20 days of employment or change in job function**
 - A) Yes
 - B) No
8. **Elastic Expansion is**
 - A) Total – permanent expansion
 - B) Permanent – total expansion
 - C) $\text{Total} \div \text{permanent expansion} \times 100$
9. **CGC C-1:2016 must be used when testing cylinders**
 - A) Yes, it is incorporated into the CFR
 - B) No, it is not incorporated into the CFR
 - C) It is an optional guidance document
10. **A life expired cylinder can be condemned without entering details onto the test record**
 - A) True
 - B) False

Answers: 1) A; 2) B; 3) A; 4) B; 5) D; 6) B; 7) B; 8) A; 9) A; 10) B
One of these answers is incorrect – can you find it? [see 5:5 above on page 2]