

## Moog AeroTEST Training Course Syllabus

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### An Introduction to AeroTEST<sup>1</sup>, System Operator Level

#### Objectives:

- At the completion of the course, an operator will have an overview of the AeroTEST system configuration including hardware, TestExplorer and TestManager, be able to start a pre-configured test including switching on, logging in, changing limits (to permit start-up), make tuning adjustments, run data logging, stop a test and identify why a test stopped following a shutdown.
  - Additionally the Operator will be able to carry out basic servo loop set-up, servovalve balancing, adjust PID gain terms and confirm calibration settings including use of Explorer graphics and “CAL” check (if configured).
  - Attendance criteria: Able to meet/understand the syllabus items of Systems Services training course “Introduction to Servomechanisms”.
  - Further details are in the relevant syllabus [below](#).
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### Advanced AeroTEST, System Set-Up and Commissioning Level

#### Objectives:

- At commencement of the course the delegate should be at System Operations level.
- At the completion of the course, the delegate will be able to configure a system from scratch including assigning and configuring tests (including calibration, pseudo channels and digital and analogue I/O), load a pre-configured spectrum (Export tool), use advanced facilities and diagnostics (SmartChart, ACSDump, RTFE & SCC Ringbuffer Analyser etc). The delegate will also be conversant with the various types of test (Static, Dynamic & Endurance, [and Iron-Bird if relevant]) and how to create the tests and build spectra. Additionally the use of scripting and how to call scripts (for Startup, Shutdown, safeguarding and from within tests) and the use of transfer logic will be addressed.
- Attendance criteria – Understanding of hydraulic closed loop control systems using servovalves, understanding of transducers and instrumentation associated with the laboratory tests. Knowledge of AeroTEST systems currently installed. Having completed or be able to meet the requirements of the System Operations Level.
- Further details are in the relevant syllabus [below](#).

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<sup>1</sup> Moog AeroTEST is the revised name for FCS SmarTEST

## Moog AeroTEST Training Course Syllabus

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### Advanced AeroTEST, Programming Level

#### Objectives

- At commencement of the course the delegate should be at System Setup and Commissioning Level level.
- This course is designed to give the delegate a deeper understanding of Scripting, Transfer Logic, Pseudo channels, Shared Memory, Multichannel Test Creation, Spectrum creation and use of the AeroTEST Export Tool. Worked examples will be used extensively including exercises for the delegates to complete.
- Attendance criteria – Understanding of hydraulic closed loop control systems using servovalves, understanding of transducers and instrumentation associated with the laboratory tests. Knowledge of AeroTEST systems currently installed. Having completed or be able to meet the requirements of the System Setup and Commissioning Level.
- Further details are in the relevant syllabus [below](#).

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### ***An Introduction to AeroTEST - System Operations***

1. Overview of AeroTEST
2. System architecture (hardware and software overview)
3. TestExplorer Overview
4. TestManager Overview
5. Understanding basic software modules of AeroTEST Manager and Explorer
6. Switching on the equipment
7. Messages (including logging in, if relevant)
8. Overview of the Control loop employed by AeroTEST
9. Tuning an actuator
10. Starting the test
11. Stopping the test
12. Basic data acquisition & the RTFE/SCC Ringbuffer analyser
13. Graphics – configuring and saving (AeroTEST Explorer and Manager)
14. Basic fault finding
15. Scripting Overview
16. Optimising test performance, including test pacing
17. Basic calibration checks – including Shunt Cal – if configure.
18. Glossary of terms

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### ***Advanced AeroTEST Training - System Set-Up and Commissioning***

1. System architecture (hardware and software)
2. Communication – configuring the Ethernet and ARP system
3. RTFE and SMC boot modules (and SMCC if relevant)
4. TestExplorer – Advanced features
5. TestManager – Advanced features
6. Understanding the software modules of AeroTEST Manager and Explorer
7. Transducer connections (loadcell, pressure and displacement)
8. Transducer calibration (load (bridge A&B) and displacement
9. Test definitions, static, dynamic & endurance
10. Defining a single channel test
11. Defining a multichannel test
12. Monitoring facilities
13. Digital inputs and outputs, configuring, assigning etc.
14. Analogue inputs and outputs, configuring, assigning etc.
15. Pseudo channel functionality
16. Data Acquisition – Continuous and single sample, hardware settings
17. Data Acquisition – Test settings and post processing tools, RTFE & SCC Ringbuffer analyser
18. Scripting – during startup and shutdown & within tests
19. Transfer logic
20. CANbus and/or Ethernet interfacing – if applicable
21. Tuning a CLAM – if applicable
22. Fault finding using diagnostic tools such as Ring-buffer analyser etc. (as installed software is available.)
23. AeroTEST Export tool
24. Glossary of terms

## Moog AeroTEST Training Course Syllabus

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### ***Advanced AeroTEST Training, Programming Level***

Advanced and further knowledge covering:

1. Defining a multichannel test
2. Spectrum creation & management
3. Pseudo channel functionality
4. Digital inputs and outputs, use with pseudo channels
5. Analogue inputs and outputs, use with pseudo channels
6. Scripting – during startup and shutdown & within tests
7. Transfer logic
8. Shared memory, transfer logic and expansion tables
9. CANbus and/or Ethernet interfacing – if applicable
10. Tuning a CLAM – if applicable
11. AeroTEST Export tool
12. Glossary of terms