



Training Curriculums Mobile Fire Protection

A new era of fire training

COURSE COMPLIANT TO ISO 10015



Introduction

This presentation defines the training modules offered by ETI to its customers, to support learning programmes for the betterment, of mobile fire protection.





Introduction - Curriculums

- I) Design Level I
- CONDUCTED AT THE ETI FIRE SCHOOL SUPPORTED BY HOT FIRE TRAINING.
- 2) Design Level 2
- CONDUCTED AT A CUSTOMER LOCATION SUPPORTED BY PRACTICAL (WET) TRAINING.
- 3) Installation & Maintenance level I
- CONDUCTED AT THE ETI FIRE SCHOOL SUPPORTED BY HOT FIRE TRAINING.
- 4) Installation & Maintenance level 2
- CONDUCTED AT A CUSTOMER LOCATION SUPPORTED BY PRACTICAL (WET) TRAINING.
- 5) Maintenance level 3
- CONDUCTED AT ETI FIRE SCHOOL OR AT A CUSTOMER LOCATION SUPPORTED BY PRACTICAL (WET) TRAINING.
- 6) Technical Presentation
- TECHNICAL PRESENTATION TAILORED TO AGREED OBJECTIVES AT ANY LOCATION.
- 7) Train The Trainer
- A COURSE DESIGNED TO PROVIDE THE TRAINING SKILLS AND RESOURCES TO DEVELOP TRAINERS TO COMPETENTLY DELIVER ANY OF THE ABOVE COURSES.

N.B. WET TRAINING IS THE DEMONSTRATION OF A MODEL SYSTEM USING WATER AS A CLEAN DEMONSTRATION AGENT. WHILE FIRE IS NOT USED, THE SYSTEM NEVERTHELESS IS DEMONSTRATED TO FULL OPERATING CONDITION. THE USE OF CLEAN WATER ALSO DEALS WITH ENVIRONMENTAL CONCERNS DURING TRAINING.



Introduction - languages

- ALL COURSES ARE OFFERED STANDARD IN
- ▶ I) ENGLISH LANGUAGE
- 2) INDONESIAN LANGUAGE

OTHER LANGUAGES CAN BE ACCOMMODATED BY UNDER AGREED PROGRAMMES



LEVEL I = HOT FIRE DEMO



LEVEL II PRACTICAL MODULE TO WET DISCHARGE ONLY



Outline – Designer Level 1

- ▶ I) Designer Level I is a course that covers:-
- Advanced fire fighting theory!
- Risk Management Process Comprehensive!
- Principles of Mobile Fire Protection!
- Equipment Theory!
- Standards Compliance!
- Design Procedures, use of Design Software & Records!
- Practical Module!
- THIS COURSE IS CONDUCTED AT THE ETI FIRE SCHOOL.. USING THE HOT FIRE TEST FACILITY IMPARTS A LASTING IMPRESSION ON THE STUDENT. ACTUALLY SEEING A FIRE, FEELING THE HEAT AND SEEING THE FIRE SYSTEM IN ACTION CREATES A MUCH GREATER LEVEL OF CONFIDENCE IN THE DESIGNER. THE ULTIMATE PRACTICAL COURSE FOR DESIGNERS WITH A "GET YOUR HANDS DIRTY" COMPONENT. THE AIR CONDITIONED MODERN TRAINING CENTRE ALSO PROVIDES AN IDEAL ENVIRONMENT FOR STUDENTS TO ABSORB THE SUPPORTING THEORY MODULES TO BRING TOGETHER THE BIG PICTURE OF THEORY VERSUS PRACTICAL REALITY.
- TIME REQUIRED 16 HOURS OVER 2 DAYS



Outline – Designer Level 2

- 2) Designer Level 2 is a course that covers:-
- Advanced Fire Fighting Theory!
- Risk Management Process Comprehensive!
- Principles of Mobile Fire Protection!
- Equipment Theory!
- Standards Compliance!
- Design Procedures, use of Design Software & Records!
- Practical Module!
- THIS COURSE IS CONDUCTED AT THE CUSTOMERS PREMISES OR NOMINATED LOCATION. USING A PRACTICAL SIMULATION WITH ACTUAL SYSTEM DISCHARGE. IT ALLOWS THE STUDENT TO AT LEAST APPRECIATE THE PRACTICAL ASPECTS OF BUILDING A FIRE SYSTEM THAT WORKS.
- AN APPROPRIATE VENUE IS REQUIRED TO CONDUCT THE THEORY MODULES, WITH A SUITABLE OUTDOOR OR WORKSHOP AREA TO CONDUCT THE PRACTICAL MODULE.
- TIME REQUIRED 16 HOURS OVER 2 DAYS



Installation & Maintenance Level 1

ISO 9001

- 3) Installation & Maintenance Level I
- is a course that covers:-
- Basic Fire Fighting Theory!
- Risk Management Principles!
- Design Fundamentals!
- Equipment Specification and Limitations!
- Installation and Maintenance Procedures!
- Records and Compliance to Standards!
- Practical Module!
- THIS COURSE IS CONDUCTED AT THE ETI FIRE SCHOOL. USING THE HOT FIRE TEST FACILITY IMPARTS A LASTING IMPRESSION ON THE STUDENT. ACTUALLY SEEING A FIRE, FEELING THE HEAT AND SEEING THE FIRE SYSTEM IN ACTION CREATES A MUCH GREATER LEVEL OF CONFIDENCE IN THE DESIGNER. THE ULTIMATE PRACTICAL COURSE FOR DESIGNERS WITH A "GET YOUR HANDS DIRTY COMPONENT". THE AIR CONDITIONED MODERN TRAINING CENTRE ALSO PROVIDES AN IDEAL ENVIRONMENT FOR STUDENTS TO ABSORB THE SUPPORTING THEORY MODULES TO BRING TOGETHER THE BIG PICTURE OF THEORY VERSUS PRACTICAL REALITY.
- TIME REQUIRED 16 HOURS OVER 2 DAYS

Installation & Maintenance Level 2

ISO 9001

- 4) Installation & Maintenance Level 2
- is a course that covers:-
- Basic Fire Fighting Theory!
- Risk Management Principles!
- Design Fundamentals!
- Equipment Specification and Limitations!
- Installation and Maintenance Procedures!
- Records and Compliance to Standards!
- Practical Module!
- THIS COURSE IS CONDUCTED AT THE CUSTOMERS PREMISES OR NOMINATED LOCATION.
- USING A PRACTICAL SIMULATION WITH ACTUAL SYSTEM DISCHARGE. IT ALLOWS THE STUDENT TO APPRECIATE THE PRACTICAL ASPECTS OF BUILDING AND MAINTAINING A FIRE SYSTEM THAT WORKS AND KEEPS ON WORKING.
- AN APPROPRIATE VENUE IS REQUIRED TO CONDUCT THE THEORY MODULES, WITH A SUITABLE OUTDOOR OR WORKSHOP AREA TO CONDUCT THE PRACTICAL MODULE.
- TIME REQUIRED 16 HOURS OVER 2 DAYS



Maintenance Level 3

- 5) Maintenance Level 3
- is a course that covers:-
- Basic Fire Fighting Theory!
- System Fundamentals!
- Maintenance Inspection and Testing Procedures!
- Records and Compliance to Standards!
- Practical Module!
- THIS COURSE IS CONDUCTED AT THE CUSTOMERS PREMISES OR NOMINATED LOCATION.
- USING A PRACTICAL SIMULATION WITH AN ACTUAL SYSTEM DISCHARGE ALLOWS THE STUDENT TO
- APPRECIATE THE PRACTICAL ASPECTS OF BUILDING AND MAINTAINING A FIRES SYSTEM THAT WORKS AND KEEPS ON WORKING.
- AN APPROPRIATE VENUE IS REQUIRED TO CONDUCT THE THEORY MODULES, WITH A SUITABLE OUTDOOR OR WORKSHOP AREA TO CONDUCT THE PRACTICAL MODULE.
- TIME REQUIRED 8 HOURS OVER 1 DAY





Introduction

- A WORD ABOUT INSTALLATION & MAINTENANCE COURSES!
- Level 1 & 2 INSTALLATION AND MAINTENANCE.
- These courses are not offered as separate modules at these levels. This philosophy is based on field experience. Basically a competent installer must have a skill set that allows him to deal with all aspects of a system installation from the interpretation of design documentation through to the practical skills of installation. The final commissioning procedures leading to the certificate of completion involve comprehensive testing to verify the system's compliance to design & standards and it's demonstrated reliability by inspection and testing. In servicing after installation, the same basic skill set is needed. To verify the system to the original design and test it to compliance is very similar to installation inspection and test procedures. Inevitable repairs or replacement of parts would require similar fitting skills to the original installation.
- Level 3 Course. MAINTENANCE.
- It is recognised that in some circumstances it may be desirable to have personnel who are trained to perform routine inspection and test procedures as defined in Australian Standard AS5062. However if significant repairs are required, a level 1 or 2 person may be called upon to undertake or supervise the repair. This allows, for example in a large operation, for a level 1 or level 2 person to act as a supervisor of the overall process while personnel with level 3 are competent to perform the routine checks and verifications.





Maintenance Level 3

- 6) Technical Presentations
- Technical presentations are sometimes needed to simply advance the general knowledge of a student or organisation. These have no Recognised Prior Learning (RPL) requirements and students are not examined for competence.
- TIME REQUIRED TAILORED TO REQUIREMENTS. Usually one hour to one day!





Maintenance Level 3

- 7) Train the Trainer.
- The ETI Train the Trainer course concentrates on providing the knowledge base and providing the Technical Material that allows the Trainer to prepare another Trainer to deliver the ETI Fire School courses. This is particularly important for distributors with responsibilities for a country. It allows a key trainer to build a trainer base that can deliver courses to staff and customers.
- PRPL The ETI course does not concentrate on Trainer Skills. There are many commercial courses for this purpose. Candidates should therefore have a 'Recognised Prior Learning' that suitably qualifies them as a Trainer of Trainers.
- A minimum ETI RPL is "designer Level I or level 2.
- On completion of the course, the Trainer is provided with a Master Training Kit that is updated as a controlled document. Other kits can be produced or ordered for roll out to other trainers.

TIME REQUIRED - TAILORED TO REQUIREMENTS. Usually one hour to one day!





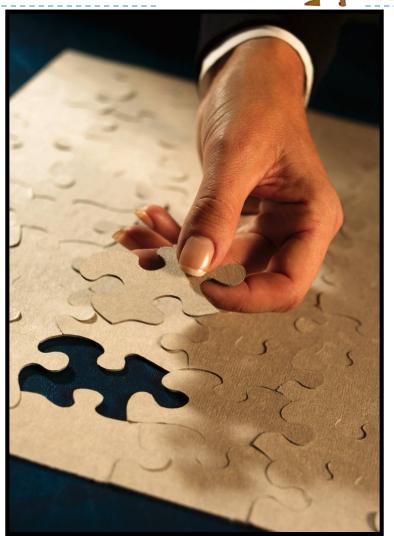
Recognised Prior Learning (R.P.L.)

- The detailed syllabus in each course outlines the minimum RPL required for each course. Additional RPL for students will have the effect of reducing course times. Therefore an RPL survey is provided that allows each, or a group of students to be assessed for suitability and course.
- The RPL survey is signed off by the customer representative under a duty of care to provide an accurate summary of existing student skill sets.



Overview

- This completes the syllabus outline.
- The following sections give the detailed Syllabus for each course.





– Designer Level 1 & 2



- I)- Advanced Fire Fighting Theory!
- 2)- Risk Management Process Comprehensive!
- 3)- Principles of Mobile Fire Protection!
- 4)- Equipment Theory!
- 5)- Standards Compliance!
- 6)- Design Procedures, use of Design Software & Records!
- 7)- Practical Module!
- THIS COURSE IS CONDUCTED AT THE ETI FIRE SCHOOL. USING THE HOT FIRE TEST FACILITY IMPARTS A LASTING IMPRESSION ON THE STUDENT. ACTUALLY SEEING A FIRE, FEELING THE HEAT AND SEEING THE FIRE SYSTEM IN ACTION CREATES A MUCH GREATER LEVEL OF CONFIDENCE IN THE DESIGNER. THE ULTIMATE PRACTICAL COURSE FOR DESIGNERS WITH A "GET YOUR HANDS DIRTY" COMPONENT. THE ETI AIR CONDITIONED MODERN TRAINING CENTRE ALSO PROVIDES AN IDEAL ENVIRONMENT FOR STUDENTS TO ABSORB THE SUPPORTING THEORY MODULES TO BRING TOGETHER THE BIG PICTURE OF THEORY VERSUS PRACTICAL REALITY.
- TIME REQUIRED 16 HOURS OVER 2 DAYS





- I)- Advanced fire fighting theory!
- ▶1.1) Basic Fire Fighting Theory Fire Triangle and Fire Tetrahedron
- ▶ 1.2) Principles of Fire Extinguishing Agents. Explanations of Water, Gases, Dry Chemical Powders and Foam Agents.
- ▶1.3) Basic Portable Fire Extinguishers. Types and Ratings
- I.4) Properties of Fuels. Explanation of Flash Point, Auto Ignition, Calorific Values. Study of modern fire risk dilemmas with high pressure fuels.
- ▶1.5) Ignition Sources. Why modern diesels are very high fire risk?

TIME REQUIRED – 2 HOURS



Detailed Curriculum - Designer Level 1 & 2



- > 2) Risk management process comprehensive!
- 2.1) Requirements of AS5062
- 2.2) Outline of WRAC Process.
- 2.3) Risk Consequence.
- 2.4) Risk Probability.
- 2.5) Determining an Inherent Risk Rating.
- > 2.6) Formulating a Risk Reduction plan.
- ▶ 2.7) The importance of managing maintenance as part of risk management.
- 2.8) Using the ETI computer programme version 12.4 to manage the process. Record Keeping and Annual Risk Management Review.

TIME REQUIRED – 2 HOURS

– Designer Level 1 & 2



- 3) Principles of Mobile Fire Protection!
- > 3.1) Common types of fire systems used on Mobile equipment. Advantages, disadvantages and geographic tendencies.
- > 3.2) Portable fire extinguishers and other contributing factors to fire risk reduction, such as training, procedures and permit control.
- 3.2) Objectives
- 3.3) Strategies
- > 3.4) The importance of engine shutdown

TIME REQUIRED - I HOUR



– Designer Level 1 & 2



- 4) Equipment Theory!
- 4.1) Fire Detection Concepts
- 4.2) Fire Alarm and Related Functions
- 4.3) Automatic Actuation and Valve Theory
- ▶ 4.4) Manual Actuation
- 4.5) Distribution and Nozzle Theory
- 4.6) Agent Theory
- 4.7) Agent Cylinder Specifications and Compliances
- TIME REQUIRED 16 HOURS OVER 2 DAYS

– Designer Level 1 & 2



- 5)- Standards compliance!
- ▶ 5.1) Review Australian Standard AS5062 2006. Fire Protection of Mobile and Transportable Equipment.
- > 5.2) Definitions of 'Listed' & 'Authority Having Jurisdiction' and various categories of fire system definitions.
- 5.3) Review ETI listing structure.
- 5.4) Requirements for compliance to AS5062 for Suppliers, Installers,
 Maintainers and Owners.

TIME REQUIRED – 16 HOURS OVER 2 DAYS

– Designer Level 1 & 2



- ▶ 6)- Design procedures, use of design software & records!
- 6.1) Surveying Equipment after Risk Assessment.
- ▶ 6.2) Defining Fire Risks.
- ▶ 6.3) Making Area Calculations
- ▶ 6.4) Calculating Foam and Nozzle Quantities
- 6.5) Making Equipment Selections
- 6.6) Preparing Documentation
- 6.7) Use of ETI Software
- TIME REQUIRED 16 HOURS OVER 2 DAYS

– Designer Level 1 & 2



- 7)- Practical module!
- 7.1) Cylinder Assembly, Charging & Pressurising.
- 7.2) Valve Operation.
- > 7.3) Hose & Pipework
- 7.4) Nozzle Arrangements
- 7.5) Manual Actuators
- > 7.6) Fire Detection Arrangements
- 7.7) Commissioning Procedures.
- > 7.8 Level I) Live Fire Demonstration ETI Fire Test Facility
- 7.8 Level 2) Wet Demonstration Sample System
- TIME REQUIRED 16 HOURS OVER 2 DAYS

Detailed Curriculum Installation & Maintenance Level 1&2 FIRE SCHOOL 1&2



- I)Basic Fire Fighting Theory!
- 2) Risk Management Principles!
- 3) Design Fundamentals!
- 4) Equipment Specification and Limitations!
- 5) Installation Procedures!
- 6) Maintenance Procedures!
- 7) Records and Compliance to Standards!
- 8) Practical Module!
- THIS COURSE IS CONDUCTED AT THE ETI FIRE SCHOOL. USING THE HOT FIRE TEST FACILITY IMPARTS A LASTING IMPRESSION ON THE STUDENT. ACTUALLY SEEING A FIRE, FEELING THE HEAT AND SEEING THE FIRE SYSTEM IN ACTION CREATES A MUCH GREATER LEVEL OF CONFIDENCE IN THE DESIGNER. THE ULTIMATE PRACTICAL COURSE FOR DESIGNERS WITH A "GET YOUR HANDS DIRTY" COMPONENT. THE ETI AIR CONDITIONED MODERN TRAINING CENTRE ALSO PROVIDES AN IDEAL ENVIRONMENT FOR STUDENTS TO ABSORB THE SUPPORTING THEORY MODULES TO BRING TOGETHER THE BIG PICTURE OF THEORY VERSUS PRACTICAL REALITY.
- TIME REQUIRED 16 HOURS OVER 2 DAYS

Detailed Curriculum Installation & Maintenance Level 1&2



- I)- Basic fire fighting theory!
- ▶1.1) Basic Fire Fighting Theory Fire Triangle and Fire Tetrahedron
- ▶ 1.2) Principles of Fire Extinguishing Agents. Explanation of Water, Gases, Dry Chemical Powders and Foam Agents.
- ▶1.3) Basic Portable Fire Extinguishers. Types and Ratings
- ▶1.4) Why modern diesels are very high fire risk?
- TIME REQUIRED –

Detailed Curriculum Installation & Maintenance Level 1&2 ETI FIRE SCHOOL 1&2



- 2)- Risk Management Principles!
- 2.1) Requirements of AS5062
- 2.2) Outline of WRAC Process.
- 2.3) Understanding an Inherent Risk Rating.
- > 2.4) Understanding a Risk Reduction Plan.
- > 2.5) The importance of managing maintenance as part of risk management.
- 2.6) Maintaining Risk Management Records
- TIME REQUIRED 16 HOURS OVER 2 DAYS

Detailed Curriculum Installation & Maintenance Level 182 FIRE SCHOOL 182



- 3) Design Fundamentals!
- > 3.1) Common types of fire systems used on Mobile equipment. Advantages, disadvantages and geographic tendencies.
- > 3.2) Portable fire extinguishers and other contributing factors to fire risk reduction, such as training, procedures and permit control.
- ▶ 3.2) Objectives
- 3.3) Strategies
- > 3.4) The importance of engine shutdown
- TIME REQUIRED –

Detailed Curriculum Installation & Maintenance Level 1&2 FIRE SCHOOL FIRE SCHOOL



- 4)- Equipment Specification and limitations!
- ▶ 4.1) Fire Detection, ROP, LOP, Linear and Optical.
- ▶ 4.2) Fire Alarm and Related Functions
- 4.3) Automatic Actuation and Valve Theory
- ▶ 4.4) Manual Actuation
- 4.5) Distribution and Nozzle Theory
- 4.6) Agent Theory
- 4.7) Agent Cylinder Specifications and Compliances
- TIME REQUIRED –

Detailed Curriculum Installation & Maintenance Level 1&2 FIRE SCHOOL 1&2



- 5) Installation Procedures!
- ▶ 5.1) Preparing for installation Documentation Communication
- 5.2) Safety Qualifications Permits.
- 5.3) Locating Equipment Agent Cylinder Nozzles Detection Alarm & Manual Actuators
- 5.4) Cylinder Inspection Filling and Valve Procedures.
- 5.5) Nozzles and Pipework Locating Nozzles Pipework rules.
- ▶ 5.6) Detection Arrangements
- ▶ 5.7) Manual Actuators
- ▶ 5.8) Alarm & Shutdown
- 5.9) Commissioning Procedures.
- ▶ 5.10) level 1) Practical Module Using ETI Hot Fire Test Facility
- 5.10) level 2) Practical Module Using Practical System to Wet discharge.
- TIME REQUIRED –

Detailed Curriculum Installation & Maintenance Level 182



- ▶ 6) Maintenance Procedures!
- ▶ 6.1) Managing Maintenance. Daily Periodic and Annual Procedures.
- ▶ 6.2) Understanding the Risk Assessment & the Design.
- 6.3) Verifying basic Design Compliance!
- 6.4) Safety Qualifications Permits.
- ▶ 6.5) Cylinder Inspection Filling and Valve Procedures. Standards Compliance
- ▶ 5.6) Checking Nozzles and Pipework.
- ▶ 5.7) Checking Detection Arrangements
- ▶ 5.8) Checking Manual Actuators
- 5.9) Checking Alarm & Shutdown Functions
- 5.10) Testing Procedures.
- ▶ 5.11) level 1) Practical Module Using ETI Hot Fire Test Facility
- 5.11) level 2) Practical Module Using Practical System to Wet discharge.
- TIME REQUIRED –

Detailed Curriculum Installation & Maintenance Level 1&2 FIRE SCHOOL FIRE SCHOOL



- 7)- Records and Compliance to Standards!
- 7.1) Requirement of AS5062
- > 7.2) Documents produced by ETI Design Software.
- > 7.3) Risk Assessment Documents.
- > 7.4) Design Documents.
- 7.5) Maintenance Documents
- > 7.6) Drawing Records.
- 7.7) Photographic Records
- TIME REQUIRED –

Detailed Curriculum Installation & Maintenance Level 1&2 FIRE SCHOOL 182



- 8) Practical Module!
- Level I) Maintenance Exercise.
- Using the ETI Hot Fire Test Facility, run through the maintenance procedures as described in section 6). Check and recharge the fire system on the test facility to sign off standards. Test the system for performance with a real fire.
- Level 2) Exercise.
- Using a practical arrangement of the ETI machine or a system already installed on a machine, run through the maintenance procedures as described in section 6). Check and recharge the fire system on the test facility to sign off standards. Test the system for performance with a real discharge test.

TIME REQUIRED –



Train The Trainer

- ▶ I) Training Structure, for delivering ETI Fire School Courses.
- 2) Areas of particular importance!
- > 3) Why Fire System Management often fails.

TIME REQUIRED - TAILORED TO REQUIREMENTS. Usually one hour to one day!



Summary

- Briefly review what was presented
- Identify ways to apply training
- Request feedback on training session