

National Training School

Residential Fire Alarm Course

Course Syllabus

August 2010

A. Course Description

This seven hour intensive classroom instruction, followed by a 1-hour examination, aides both technical and sales staff in expanding their knowledge of the installation, service and maintenance of residential fire alarm systems.

B. Overall Outline, Objectives, & Hours

The Residential Fire Alarm Course has a total of seven (7) contact hours with one (1) hour for testing. The instructor must allow for a ten (10) minute break approximately every hour. Classes can be scheduled for longer contact hours but not for less than seven (7) contact hours. Subject areas will be covered as follows:

Module	Topics	Hour
1. Introduction	<ul style="list-style-type: none"> • Explain general information regarding ESA/NTS, course facilitation, materials and their intended use, and final exam. 	.25 Hour
2. Overview	<ul style="list-style-type: none"> • Basic illustration of a Res Fire System • Explanation of the components of a Res Fire System • Res vs. Commercial differences (some of which we will elaborate on at the beginning of each module, so students will understand these differences at the point they need to and within context of the subject at hand. • What's important to the customer • Definitions 	.25 Hour
3. Codes and Standards	<ul style="list-style-type: none"> • LSC vs. IBC, Basics of each <ul style="list-style-type: none"> A. NFPA <ul style="list-style-type: none"> 1. NFPA 72-Household Fire Alarm Systems 2. NFPA 70-Article 760 B. Testing Laboratories and Residential Listings(Various UL/FM Listings) C. Building Codes/Fire Codes D. Use Groups: R, R-1, R-2, R-3, R-4 <ul style="list-style-type: none"> 1. Occupants Mobility 2. Occupants Sensibility 3. Occupants Capability E. Manufacturers Installation Instructions F. Legally Adopted vs Recognized Standards G. NBFAA Residential Fire System Fact Sheet 	.75 Hour
4. Control Panels	<ul style="list-style-type: none"> A. Control Panels and Annunciators <ul style="list-style-type: none"> 1. Listings-Compliance 2. Required Functions (Alarm, Trouble, Supervisory) 3. Monitoring Integrity of Circuits 4. Optional Interfaces 5. Wireless Systems/Devices B. Control Panels and Annunciators (moved from Installation portion of last outline) <ul style="list-style-type: none"> 1. Proper location/wiring of control panel box 2. Proper location/wiring of AC Outlet for plug in transformer 	1 Hou

	<ul style="list-style-type: none"> 3. Standby Batteries-Sizing and Installation 4. Proper location/wiring of Annunciators/Keypads C. Interfacing with Optional Devices D. Programming the System 	
5. Power Requirements	Power Supply/Standby Power	.25 Hour
6. Notification Appliances	<ul style="list-style-type: none"> A. Notification Appliances <ul style="list-style-type: none"> 1. Distinctive Sound (Temporal Three) 2. Decibel Levels 3. Strobes and ADA (Sleeping Areas) 4. Siren Drivers and Speakers 5. Voice Siren Drivers and Speakers B. Installation of Notification Appliances <ul style="list-style-type: none"> 5. Mounting Locations in non sleeping rooms 6. Mounting Locations in sleeping rooms 	.5 Hour
7. Initiating Devices	<ul style="list-style-type: none"> A. Smoke Detectors <ul style="list-style-type: none"> a. Photoelectric (Definition and Applications) b. Ionization (Definition and Application) B. Heat Detectors <ul style="list-style-type: none"> a. Fixed Temperature (Definition and Application) b. Rate of Rise (Definition and Application) c. Detector Coverage d. When are they permitted e. Heat Detector on a smoke detector C. Installation of Smoke Alarms <ul style="list-style-type: none"> a. Single Station (110 volt and Battery Operated) b. Multiple Station (110 volt) D. Installation of Smoke Detectors <ul style="list-style-type: none"> 7. Compatibility <ul style="list-style-type: none"> a) Wiring 2-wire detectors b) Wiring 4-wire detectors 8. Locations <ul style="list-style-type: none"> a) correct b) incorrect E. Installation of Heat Detectors (Wiring and Proper Locations) F. Installation of Smoke Alarms <ul style="list-style-type: none"> 9. Interconnected 10. Locations (Existing/New Construction) 	1 Hour
8. Communication Methods	<ul style="list-style-type: none"> A. Communicators and Remote Stations <ul style="list-style-type: none"> 1. DACT 2. One phone line/24 Hour Backup 3. VoIP and Internet Monitoring B. Optional Devices <ul style="list-style-type: none"> 1. Carbon Monoxide/Gas Detectors <ul style="list-style-type: none"> a) Biometric (Definition, Application, Pros/Cons) b) Tine Oxide (Definition, Application, Pros/Cons) c) Electromechanical(Definition, Application Pros/Cons) 2. Other Non-Safety Devices/Functions C. 2. Other Non-Safety Devices/Functions D. Installation of Communicators and Remote Stations <ul style="list-style-type: none"> 1. Proper wiring of RJ31X Telephone interface 2. Frequency of test signal 	.75 Hour

9. Wiring	<p>A. Wiring</p> <ol style="list-style-type: none"> 1. Fire Ratings on wire 2. Fire stopping 3. Splicing 4. T-Tapping 5. Runs with other wire types 	.5 Hour
10. Testing and Cleaning	<p>A. Frequency Schedules for Testing various Devices-NFPA 72</p> <p>B. Functional Testing to determine compliance with:</p> <ol style="list-style-type: none"> 1. Manufacturer's Specifications 2. UL/FM Standards 3. NFPA 72 Chapter on Testing & Inspection 4. Local Residential Codes <p>C. Test Method Table in NFPA 72 – How To Test:</p> <ol style="list-style-type: none"> 1. Smoke Detectors <ol style="list-style-type: none"> a) When is Sensitivity Testing required b) How to do a sensitivity test 2. Heat Detectors <ol style="list-style-type: none"> a) Determine age of Heat Detectors b) Replace if past life expectancy according to codes 3. Control Unit and wiring connections <ol style="list-style-type: none"> a) Check Power supply voltage b) Check wiring/programming to fire loops c) Checking monitored integrity on Initiating Loops 4. Communication Devices-Signal to Remote Station 5. Notification Appliances <ol style="list-style-type: none"> a) Check for monitored integrity of sounder wiring b) Check audibility levels are maintained 6. Batteries (Load test) 7. Optional features and functions 	1 Hou
11. Documentation	<p>A. Owner must be supplied with documentation</p> <ol style="list-style-type: none"> 1. Owner's Manual showing typical layouts 2. Printed operating/testing instructions 3. Printed information on establishing an escape plan 4. Printed information on repair, replacement, warranty services <p>B. Provide written notice to owner of defects during a test and get written acknowledgement</p> <p>C. Offer owner Contract for Regular Testing-Required every 3 years</p>	.5 Hour
12. Client Relations	<p>The trainee will be able to:</p> <ol style="list-style-type: none"> A. Describe rules for customer service and how to relieve the customer's common anxieties and concerns. B. Explain the 3 stages of where there exists opportunities to build a relationship with your customer in both a residential and commercial application. C. Describe tactics that you can use when dealing with difficult customers. D. Explain the difference between contractual terms like maintenance, service and inspection. 	.25 Hour
	Final Examination	1 Hou
TOTALS		8 Hours

C. Guidelines

The course shall be present in accordance with the most recently adopted NTS Administrative & Operational Guidelines. Students with special needs shall be accommodated as required by law and specified in the National Training School Policy Concerning Students with Special Learning/Examination Needs.

D. Method of Presentation

1. Lecture

The instructors shall present the material following the instructor guide and the slide presentation combined with question and answers throughout the course to verify and reinforce comprehension and relate the material to the students particular needs.

2. Audio Visual Aids

- Slide presentation (slide projector or computer driven monitors).
- Reference book.

E. Method of Evaluation

1. Written examination.

2. Successful completion of workshop exercises.

F. Qualification of Instructors

Our program succeeds through individual instruction in the art of teaching by experienced instructors, essentially a train the trainer concept. The course instructors shall include at least one NTS Certified Instructor or a Senior Instructor, and an instructor appointed by the NTS director of education and known by the director to be both knowledgeable of the course material and able to present it in a professional manner.

Note: The times given are approximate. The instructor must allow for a 10 minute break approximately every hour. Classes can be scheduled for longer contact hours but not for less than 7 contact hours, plus the one hour exam.