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**APPRENTICESHIP
STANDARDS**
for the Occupation of
**FIRE/LIFE SAFETY
TECHNICIAN**

In the State of California
Developed by the



W B F A A

California Unilateral Apprenticeship and Training Committee
In Cooperation with the
California Division of Apprenticeship
Standards
and
Chabot-Las Positas Community College District

A Program Incorporating 6,000 Hours of
On-The-Job Training with
525 Hours of Intensive Academic Study



The California Automatic Fire Alarm Association (CAFAA) was founded in 1970 and is an organization concerned with fire alarm issues in California. The membership consists of fire alarm manufacturers, their representatives and distributors, fire alarm installers, registered professional engineers, building and fire officials. Our primary objective is to promote cooperation and understanding among the professional involved in the fire alarm industry.

Our Association is represented on the National Fire Protection Association Standard 72. We maintain active liaison with the California Fire Chiefs Association, the International Conference of Building Officials, the Society of Fire Protection Engineers, the International Association of Electrical Inspectors, Western Fire Chiefs and other professional associations.

California has the most strict fire alarm regulations in the country. Section 13114 of the Health and Safety Code requires that all fire alarm equipment sold, installed, distributed or offered for sale in California must be listed and approved by the California State Fire Marshal. The State Contractors Licensing Board maintains special licensing provisions for fire alarm contractors. California Administrative Code Title 24 State Building Standards and Title 19 State Fire Marshal Regulations contain fire alarm requirements above and beyond any National Standard.

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Douglas Shackley, President
Jerry Lenander, Executive Director



MISSION OF THE CALIFORNIA ALARM ASSOCIATION

*To Provide a Vehicle to Promote
Growth and Professionalism within the
Alarm Industry throughout the State of
California*

The California Alarm Association is a state trade association comprised of licensed alarm company operators and suppliers of products and services. More than 180 alarm companies and 60 suppliers of products and services are members. The alarm companies represent 70% of the electronic security industry in California. They jointly sponsor the WBFSA Apprenticeship and Training Program with the California Automatic Fire Alarm Association. The CAA is organized in 10 regional chapters who develop and manage programs promoting professionalism to enhance public safety.

In addition to ongoing education and training programs and initiatives, the CAA and its chapter serve as liaison to municipal authorities, legislative and regulatory agencies, and law enforcement and fire service departments.

The CAA serves as an active legislative advocate for companies involved in electronic security systems installation and service. Regular Membership is open to companies who maintain an Alarm Company Operator license and/or a C-10/C-7 license.

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EMPLOYER HANDBOOK WBFAA FIRE/LIFE SAFETY TECHNICIAN

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INTRODUCTION TO THE WBFAA APPRENTICESHIP PROGRAM

The California Alarm Association (CAA) and the California Automatic Fire Alarm Association (CAFAA) united under the Western Burglar & Fire Alarm Association (WBFAA) to sponsor an apprenticeship program to comply with the State of California requirement under Assembly Bill 931 signed by Governor Davis in October 1999.

This manual was prepared to provide you an introduction to the WBFAA Unilateral Apprenticeship and Training Committee and the programs that have been developed to promote professionalism in our Fire/Life Safety industry.

The WBFAA Fire/Life Safety Apprenticeship Program received approval from the Division of Apprenticeship Standards in September 2002. With the approval of our statewide program, we moved to the next phase of establishing the administrative and educational components of the program.

It is the hope of the industry associations, companies and individuals involved in this program that it will result in our ability to recruit, train and retain the highest quality work force available in the State of California. This program allows us to recruit the best and brightest to our profession, and provide them a professional career path.

This program belongs to the industry and to you, and we encourage you to participate and contribute as it develops in the future.

On behalf of the WBFAA UATC Board of Directors, I hope you will find our work worthy of your support and that it will contribute not only to the growth of the industry, but to your business as well.

Best regards,

George Gunning
WBFAA



ACKNOWLEDGEMENTS

The WBFAA Unilateral Apprenticeship and Training Committee received enthusiastic support from the Fire/Life Safety Industry in the development of this apprenticeship program. The commitment of the professional associations, companies and individuals to create a comprehensive and relevant training and educational program will enhance the professionalism of the industry and the public safety of the citizens of the State of California. We appreciate the support of the organizations, companies and individuals who contributed to this effort.

California Alarm Association (CAA)
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California Automatic Fire Alarm Association (CAFAA)
Ron Dalton, President

Western Burglar & Fire Alarm Association (WBFAA)
George Gunning, Chairman

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Chabot-Las Positas Community College District
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Leslie Roe, District Dean

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Jerry Lenander, Executive Director



CHARTER LEADERSHIP FUNDING

The WBFAA Unilateral Apprenticeship and Training Committee relied on dedicated volunteers from CAFAA and CAA who offered their time and expertise to develop the program. In addition, the WBFAA needed significant funds to bring together the professional expertise to guide the process and develop the curriculum for the program.

Our thanks to the following for their generous financial support that made the development of the program possible:

Security Industry Association California Alarm Association California Automatic Fire Alarm Association

Alarms Unlimited of Sacramento
Andrews Security
ASI Alarms
Bay Alarm Company
Beam Alarm Corporation
Bill's Sound & Security
Certified Security Systems
Denalect Alarm Company
Eagle Security Systems
Engineered Monitoring Systems
FACP Monterey Bay Alarm
Fire Alert, Inc.
Greater Alarm Company, Inc.
Greater Los Angeles Security Alarm Association
Hugh T. Smith
Intrepid Electronic Systems Inc.
JMG Security Systems, Inc.
Johnson Electronics
Kelex Security
National Alarm Computer Center
Orange County Alarm Association
Pacific Security Systems
Power Communications
PSI
Saddleback Security Systems
Safe Side Security, Inc.
San Diego Burglar & Fire Alarm Association
SDA Security Systems, Inc.
SecurityLink from Ameritech
Simplex/Grinnell
Sylvester's Security Alarms
The Alarm Company
Total Watch
Ultrasafe Security Specialists
USA Alarm Systems, Inc.
Wheelock, Inc.



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OVERVIEW OF APPRENTICESHIP STANDARDS

BACKGROUND

The California Alarm Association (CAA) and the California Automatic Fire Alarm Association (CAFAA) united under the Western Burglar & Fire Alarm Association (WBFAA) to sponsor an apprenticeship program to comply with the State of California requirement under Assembly Bills 931 signed by Governor Davis in October 1999.

AB 931 Electrician Certification:

Existing law provides for apprenticeship programs within the Division of Apprenticeship Standards in the Department of Industrial Relations. This bill would require the division to establish and validate minimum standards for the competency and training of electricians, as defined, through a system of testing and certification; establish fees necessary to implement those requirements; establish and adopt regulations for enforcement purposes; and to establish an advisory committee and panels, as specified. Discrimination for or against any person based upon union or nonunion membership would be prohibited. These requirements would not be applicable with respect to electrical connections under 100 volt-amperes.

The new laws passed by the State of California legislature and signed by the Governor will have a major impact on the way **Fire/Life Safety** and integrated systems companies conduct their business and, in some cases, their ability to continue to stay in business.

The law requires that all workers that make electrical connection of devices of 100 volt amperes (VA) or more be certified or be in an apprenticeship program. This means all workers making these connections must get certified by meeting a certain criteria first, take a test and pass, and if they do not pass, they must join a state approved apprentice program to work in California.

The law places the responsibility and authority with the Division of Apprentice Standards (DAS), a part of the Department of Industrial Relations. They are to establish and validate minimum standards for the competency and training of workers (that hook up electrical devices 100 VA or more) through a system of testing and regulations.

The law required the DAS to form an advisory committee and the California Electrician Certification Advisory Committee (CECAC) was formed. Under CECAC, there are six subcommittees, or panels, to advise CECAC. The majority of those serving on the committee and panels are affiliated with non-merit segment of the industry.



THE WBFAA APPRENTICESHIP PROGRAM

CAA and CAFAA are the only two statewide non-profit trade associations committed to representing the interests of the **Fire/Life Safety** systems industry in the State of California. It fell within their independent mission statements to comply with the law by developing an apprenticeship program and collateral training that was relevant to the work being done in the **Fire/Life Safety** systems industry.

CAA and CAFAA joined together under the WBFAA to serve as the program sponsor for the Fire/Life Safety Certification Program. The program sponsor is charged with the responsibility of creating a viable apprenticeship program that is acceptable to the California Apprenticeship Council (CAC), a publicly appointed entity that has final approval over all apprenticeship programs in the state.

The WBFAA will be developing requests for grants from the State of California to assist in the operation of the apprenticeship program and journeyman upgrading programs.

The WBFAA, through the CAA and CAFAA, has conducted a survey of its members to gather information necessary for the development of the apprenticeship program. The survey gathered information used to develop work processes that include all on-the-job training, to show the type of work that the industry has been doing, and to demonstrate a history of training and continuing education. The survey also generated information on wages and benefits so that the committee could recommend a chart of wages and benefits that will be part of an approved apprenticeship program. It was important to develop compensation tables that are relevant to the work and the industry and not set in an arbitrary manner.



APPRENTICESHIP TRAINING AND EDUCATION

The WBFAA was charged with the task of creating a California Registered Apprenticeship Program. The Apprenticeship Standards contain all of the required elements for a program covering the Fire/Life Safety industry. These elements include:

1. Work processes for 6,000 hours covering all aspects of the Fire/Life Safety trade. This on-the-job-training (OJT) system will produce Journeymen Fire/Life Safety Technicians capable of the highest level of competency for installing, testing and maintaining the most complex systems.
2. The WBFAA has developed a complete technical curriculum. This customized curriculum was submitted to Chabot Community College, passing the most stringent review and has been accepted for use by the college system statewide. The Chabot Community College District and the UATC entered into a formal agreement for the administration of the program.
3. The Selection Procedure was created with idea of providing complete access to the Apprenticeship Program to anyone interested in a career in the industry.
4. The Affirmative Action Plan insures wide spread dissemination of information and opportunities for all interested parties.
5. The program is adequately funded by the employers.



HOW THIS AFFECTS YOU

All electrical contractors (C10 license holders) that are currently involved in the installation of Fire/Life Safety systems are affected by new legislation passed in the State of California. The law requires that all technicians working with 100 volt amperes or above must be certified by the State of California or must be enrolled in an approved apprenticeship and training program.

- Existing C10 license holders are not required to be certified.
- All technical field employees of an electrical contractor (C10) must be certified or enrolled in an approved apprenticeship program.
- Existing employees who have 4,000 or more hours of verifiable fieldwork may take the certification exam.
- Existing employees, who fail to qualify for, or fail to pass, the certification exam will be required to be enrolled in an apprenticeship program.
- Each new employee must hold a high school diploma or GED and be enrolled in an approved apprenticeship program



APPRENTICESHIP OJT AND CLASSROOM WORK GUIDELINES

ON THE JOB RATIO AND SUPERVISION

- For each journeyman fire/life safety technician on any employer job site there may be one apprentice.
- The apprentice should be supervised by the technician in a manner that provides for the safety of the apprentice and a proper learning experience.

ON THE JOB ROTATION OF APPRENTICES

- The employer shall use its best efforts to insure the apprentice is exposed to as many of the of skill building categories as possible. A fully rounded apprentice will result in a well qualified journeyman fire/life safety technician.

APPRENTICE MONTHLY WORK CARDS AND VERIFICATION

- It is the responsibility of each apprentice to record their on the job training hours by filling out and providing the committee with a monthly work card. In order to insure accuracy of these reports it is required that an employer representative verify the information provided by the apprentice.

ACADEMIC SUPPORT

- This apprenticeship program provides the apprentice with a very strong and demanding academic component.
- The employer's support is critical to apprentice and will help provide the apprentice with the confidence so necessary for success.
- Apprentices will be assigned to formal classroom settings and usually attend school two nights a week for three hours each night.
- These classes are mandatory and the employer is not required to pay the apprentice for these class hours.
- It is also a good company policy not to schedule overtime on nights when the apprentices are required to attend classroom courses.



QUESTION AND ANSWER

Who is the WBFAA?

The WBFAA is a joint effort of the CAA and CAFAA to develop an approved apprenticeship program for the **Fire/Life Safety** systems industry in California.

Why is this necessary?

The passage of AB 931 in October 1999 mandated that all persons in the **Fire/Life Safety** systems industry be certified as part of an approved apprenticeship program.

Who has to be certified?

All employees working for an electrical contractor (C-10 license holder) and involved in the **Fire/Life Safety** systems industry must be certified.

When will this be required?

The target date for enforcement is January 1, 2005, depending on the additional legislation to clarify the regulations.

Can I take the test only?

All persons who can show a verifiable 4,000 hours of fieldwork in the industry can take the certification exam and be certified if they pass the exam.

What if I fail the test?

All persons who can't pass the certification test after showing verifiable hours will then be required to enter an approved apprenticeship program.

How long is the apprenticeship program?

The apprenticeship program is 6,000 hours (approximately three years) on the job training and approximately 525 hours of continuing education outside the required fieldwork hours.

How will this affect wages and benefits?

Any person working in the field covered by the apprenticeship program will have their wages and benefits governed by an approved table with minimum wages and benefits. These levels are determined through a statewide wage survey conducted by the Department of Industrial Relations.

Who can participate in the WBFAA Apprenticeship Program?

Members of the CAA and CAFAA can participate. Non-members may participate, although the fees associated with the program may be higher.



How is WBFAA being funded?

Both CAA and CAFAA have contributed funds to pay initial costs, and are seeking financial support from companies and associations who are affected by this program and will benefit from its development.

What is the benefit of an apprenticeship program?

A formal apprenticeship program sponsored by our industry will provide an opportunity to conduct recruitment and training programs by offering competitive wages and benefits along a standardized formula in conjunction with entry level and continuing education. This will enable the industry to build a well-trained labor pool of qualified workers.

What is the benefit of a WBFAA Apprenticeship Program?

The WBFAA program is being developed to meet the strict criteria of the DAS with training, education, certification and compensation that is relevant to the **Fire/Life Safety** systems industry. This program will be developed by our industry and not by some other entities.

How will the training and apprenticeship program be funded?

Industry backing is critical to the success of any apprenticeship program and is required to have a new program accepted. Employers who participate in the program will be required to provide the financial resources to underwrite the costs related to training their employees on an ongoing basis.



AFFIRMATIVE ACTION PROGRAM

The WBFAA UATC Apprenticeship Program is committed to a comprehensive affirmative action program to inform all interested parties, including women and minorities, to participate in the program and encourage them to consider a career in the Fire/Life Safety Industry.

TRAINING DIRECTOR

The Training Director or designee will attend six or more activities, i.e., Job Fairs, School Career Days or Outreach Program Events within a reasonable geographic area of the Training Office.

During these events the Training Director or designee shall actively participate, recruit, encourage and inform all interested parties, including women and minorities, about the WBFAA Fire/Life Safety Apprenticeship program.

APPRENTICESHIP COMMITTEE

The WBFAA Apprenticeship Committee members, by virtue of their membership on the Committee, shall also be considered the Affirmative Action Committee. The Committee shall identify and attend a minimum of 10 activities including, but not limited to, Job Fairs, Career Days and Outreach programs within a reasonable geographic area to their place of business. They shall actively participate in these events with the objective of advertising the WBFAA Fire/Life Safety Apprenticeship Program to all interested parties, including women and minorities. Reports of these outreach actions shall be filed with the office of the Training Director.

PARTICIPATING EMPLOYERS

All Fire/Life Safety employers affiliated with the WBFAA sponsored Apprenticeship Program will be encouraged to become involved with any School, Outreach or Jobs Program in their area of business and participate with these organizations.

Employers will be expected to advertise the Apprenticeship Program and discuss, with any interested party, potential employment opportunities within their particular company. Employers will report all Affirmative Action attendance to the Training Director.

AFFIRMATIVE ACTION FILES

All Affirmative Action files shall be maintained by the Training Director and available to all authorized agencies of government.



APPRENTICESHIP PROGRAM GUIDELINES

The WBFAA Apprenticeship Program is governed by the State of California Department of Industrial Relations, Division of Apprenticeship Standards (DAS). The following guidelines are excerpted from the material submitted to the DAS for approval of the program. The guidelines provide an outline of the purpose of the program and the policies and procedures that will govern the administration of the program.

APPRENTICESHIP STANDARDS
of the
WESTERN BURGLAR AND FIRE ALARM ASSOCIATION (WBFAA)
UNILATERAL APPRENTICESHIP AND TRAINING COMMITTEE

ARTICLE I Purpose and Policy

The parties hereto declare it to be their purpose and policy to establish an organized, planned system of apprenticeship, conducted as a management association undertaking. These standards have, therefore, been adopted and agreed upon under the Shelley-Maloney Apprentice Labor standards Act of 1939, as amended, to govern the employment and training of apprentices in the trade, craft or occupation defined herein, to become effective upon their approval.

ARTICLE II Craft:

Fire/Life Safety Technician DOT: 822.361.01A

ARTICLE III Organization

There is hereby established the above named unilateral apprenticeship committee, covering all counties in the State of California, consisting of seven (7) members who shall be selected by and represent the employer organization signatory hereto, and one apprenticeship consultant representing the Division of Apprenticeship Standards. The committee membership shall embody individual representatives of the Northern and Southern portions of the State of California. In addition thereto, there shall be one advisor from the local school district and such other advisors as the committee shall determine. Such advisors and the apprenticeship consultant act without vote.



ARTICLE IV **Jurisdiction**

These standards shall apply to the employer organization signatory hereto, their members, to other employers who subscribe hereto, and to all apprentice agreements hereunder.

ARTICLE V **Functions**

The function of the apprenticeship committee shall be to:

1. Develop an efficient program of apprenticeship through systematic on-the-job training with related and supplemental instruction and periodic evaluation of each apprentice;
2. Make periodic evaluation of the progress of each apprentice's on-the-job training related and supplemental instruction;
3. Establish a mechanism to be used for the rotation of the apprentice from work process to work process to assure the apprentice's complete training;
4. Ensure mobility between employers when essential; to provide exposure and training in various work processes;
5. Serve in an advisory capacity with employers in matters pertaining to these standards;
6. Aid in the adjustment of apprenticeship disputes;
7. Develop fair and impartial selection procedures and an affirmative action plan in accordance with existing laws and regulations, and to apply them uniformly in the selection of application for apprenticeship. The selection procedures and affirmative action plan are included herein (Article XX);

ARTICLE VI **Responsibilities**

The responsibilities of the apprenticeship committee shall be to:

1. Supervise the administration and enforcement of these standards;
2. Adopt such rules and regulations as are necessary to govern the program provided, however, that the rules and regulations do not conflict with these standards;



3. Oversee the program's ability, including financial ability, and commitment to meet and carry out its responsibilities under the federal and state law and regulation applicable to the apprenticeable occupation and for the welfare of the apprentice;
4. Conduct orientations, workshops or other educational sessions for employers to explain the apprenticeship program's standards and the operation of the apprenticeship program;
5. Pass upon the qualification of employers under its jurisdiction and, when appropriate, to suspend or withdraw approval;
6. Conduct on-going evaluation of the interest and capacity of employers to participate in the apprenticeship program and to train apprentices on the job;
7. Determine if an employer has the work site facilities skilled workers as trainers at the work site, and equipment sufficient to train apprentices;
8. Pass upon the qualification of apprentice applicants;
9. File a signed copy of each apprentice agreement with the Secretary of the California Apprenticeship Council, with copies to all parties to the agreement;
10. Establish and maintain a record system for on-the-job training and related instruction;
11. Use every effort to keep the apprentice employed in a reasonably continuous manner and adequately instructed;
12. Provide disciplinary procedures for apprentices and including provisions for fair hearings;
13. Adopt changes to these standards, as necessary, subject to the approval of the parties hereto and the Chief of the Division of Apprenticeship Standards;
14. Establish a Statewide Advisory Committee;
15. And, establish a Statewide Administration Center in a location that provides convenient access to all interested parties. This office will be the official repository for all records and files necessary to adequately perform the functions of a Statewide Apprenticeship Program.



ARTICLE VII **Definition of an Apprentice**

An apprentice is a person at least 18 years of age, who has met the requirements for selection under the selection procedures, who is engaged in learning a designated craft and who has entered into a written apprentice agreement under the provisions of these standards.

ARTICLE VIII **Duties of an Apprentice**

Each apprentice shall satisfactorily perform all work and learning assignments both on the job and related instruction and shall comply with the rules, regulations and decision of the apprenticeship committee.

ARTICLE IX **Apprentice Agreement**

1. Each apprentice agreement shall conform to the State law governing apprentice agreements, and shall be signed by the employer or by the apprenticeship committee and by the apprentices and must be approved by the apprenticeship committee.
2. Each apprentice shall be furnished a copy of or be given an opportunity to study these standards before indenture. These standards shall be considered a part of the apprentice agreement as though expressly written therein.

ARTICLE X **Termination and Transfer of Agreements**

1. During the probationary period an apprentice agreement may be terminated by the apprenticeship committee at the request in writing of either party; after such probationary period an apprentice agreement may be terminated by the Administrator by mutual agreement of all the parties thereto or cancelled by the Administrator for good and sufficient reason.
2. If an employer is unable to fulfill his/her obligation to train under any apprentice agreement or in the event of a layoff, the apprenticeship committee may, with the approval of the Administrator transfer such agreement to any other employer if the apprentice consents and such other employer agrees to assume the obligations of said apprentice agreement.



ARTICLE XI **Academics and Study**

1. Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 160 hours per year. The Chabot-Las Positas Community College District will be the local educational agency. See attached course outline.
2. Required school time shall not be compensated.

ARTICLE XII **Lay-off**

1. If for any reason a lay-off of an apprentice occurs, the apprentice agreement shall remain in effect unless cancelled by the Administrator. However, credit for related instruction shall be given when the apprentice continues such instruction during the lay-off.
2. There shall be no liability on the part of the employer or the UATC for an injury sustained by an apprentice engaged in school work at a time when the apprentice is unemployed.

ARTICLE XIII **Controversies**

All controversies or differences concerning apprentice agreements that cannot be adjusted locally by the apprenticeship committee or otherwise shall be submitted to the Administrator for determination.

ARTICLE XIV **Term of Apprenticeship**

The term of apprenticeship shall be 6,000 hours, within 36 months, with the first 1,000 hours extending over not more than 6 months, shall be a tryout or probationary period for the trade.

ARTICLE XV **Ratio**

A qualified employer may employ one apprentice when at least one (1) journeyman is regularly employed, and one (1) additional apprentice for each one (1) additional journeyman.



ARTICLE XVI Private Wage Schedules

1. Journeyman Scale:

Subject to the California Department of Industrial Relation statewide wage survey of the Fire/Life Safety industry.

Wage Schedule

Based on wage of \$22 per hour inclusive of benefits.

PERIOD	% OF \$20	Base/Net Wage
1 st Period	50%	\$11.00
2 nd Period	55%	\$12.10
3 rd Period	60%	\$13.20
4 th Period	70%	\$15.40
5 th Period	80%	\$17.60
6 th Period	90%	\$19.380

*Fringe benefits or portions thereof, shall be paid either as wages in lieu of benefits, or shall be irrevocably paid to third-party providers for benefits, including but not limited to health and welfare, pension, vacation, or holidays.

Advancement Schedule:

To advance from one period to the next the apprentice shall have met the following requirements:

1. Shall have satisfactorily completed 1,000 on-the-job work hours;
 2. Shall have satisfactorily completed the indicated months in the program;
 3. Shall have satisfactorily completed the indicated related and supplemental instruction school hours with a minimum grade of 75%.
2. Straight time hours: Per day: **8 hours** Per week: **40** hours
3. Overtime provisions: Overtime shall be paid at not less than one and one-half (1 ½) times the straight time hourly rate of pay in excess of eight (8) hours per day. Likewise, overtime must be paid for hours in excess of forty (40) in any one work week. So not to interfere with schooling, overtime will not be permitted when related instruction classes are scheduled.



ARTICLE XVII

On The Job Training

DOT: 822.361.01A

1. The employer shall see that all apprentices are under the supervision of a qualified journeyman and shall provide the necessary diversified experience and training in order to train and develop the apprentice into a skilled worker, proficient in all the work processes of a trade as outlined herein. Apprentices shall also be trained in the use of new equipment, materials and processes as they come into use in the occupation.
2. The major work processes in which apprentices will be trained (although not necessarily in the order listed) and the approximate hours (not necessarily continuous) to be spent on each are as follows:

Work Processes:	<u>Approximate Hours</u>
A. Safety	
1. Hand Tools	60
2. Power Tools	60
3. Power Lift/Ladder	80
4. Lifting	40
5. Job Site	40
6. Asbestos Recognition	10
7. Electrical	<u>100</u>
	390 hours
B. System Installation & Preparation	
1. Site Survey/Job Plan	120
2. Job Site Communications	50
3. Wiring of Buildings	
a. Wire types	40
b. Rough-in/Pr-Wire	200
c. Back boxes	100
d. Underground/Aerial wiring	80
e. Conduit/Raceways	600
-EMT	
-PVC	
-Rigid	
-Non-metallic coverings	
-Flex	
-Bending & Offsets	
-Coring	
-Drilling	
f. Splicing and Interconnects	100
g. Fastening and Anchoring	200
h. Seismic Anchoring	<u>30</u>
	1,520 hours



C. System Completion	
1. Fire-Life/Safety System	
a. Mounting of Peripheral Devices	700
b. Wiring of Panels and Accessories	700
c. Programming	300
d. Commissioning	300
2. Nurse Call Systems	
a. Mounting of Peripheral Devices	80
b. Wiring of Panels and Accessories	80
c. Programming	50
d. Commissioning	50
3. CCTV Systems	
a. Mounting of Peripheral Devices	120
b. Wiring of Components and Access	120
c. Programming	80
d. Commissioning	80
4. Access Control Systems	
a. Mounting of Peripheral Devices	120
b. Wiring of Components and Access	120
c. Programming	80
d. Commissioning	100
5. Integrated Systems	
a. Mounting of Peripheral Devices	120
b. Wiring of Components and Access	120
c. Programming	80
d. Commissioning	<u>100</u>
	3,500 Hours
D. Maintenance	
1. Fire	100
2. Nurse Call	40
3. CCTV	100
4. Access Control	100
5. Integrated Systems	<u>100</u>
	440 Hours
E. System Documentation	
	<u>150</u>
	150 Hours
GRAND TOTAL	6,000 hours



ARTICLE XVIII **Safety & Health and Recognition of Illegal
Discrimination and Sexual Harassment**

- A. Each apprentice shall receive training and education in first aid, safe working practices and in the recognition of occupational health and safety hazards.
- B. Each apprentice shall receive training in the recognition of illegal discrimination and sexual harassment.

ARTICLE XIX **Certificate of Completion**

1. Upon evidence of satisfactory completion of apprenticeship, and upon the recommendation of the apprenticeship committee, each apprentice will be issued a Certificate of Completion by the authority of the California Apprenticeship Council.
2. In recognition of unusual ability and progress, the apprenticeship committee may decrease the term of apprenticeship for an individual apprentice not more than twelve and one-half (12 ½) percent.

ARTICLE XX **Equal Opportunity in Apprenticeship**

The Program Sponsor, in accordance with the California Plan for Equal Opportunity in Apprenticeship, declares the following to be its selection procedures.

1. Pledge
The recruitment, selection, employment, and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin or sex. The sponsor will take affirmative action to provide equal opportunity in apprenticeship for both minorities and women and will operate the apprenticeship program as required under Title 29 of the Code of Federal Regulations, Part 30, and equal employment opportunity regulation of the State of California.
2. Dissemination of Information
For programs customarily receiving application throughout the year, such information shall be regularly disseminated but not less than semi-annually. Information will be disseminated in the area of jurisdiction to the following:
 - A. California Employment Development Department Locations



B. State of California Department of Industrial Relations
Division of Apprenticeship Standards

2550 Mariposa Street, Room 3080, Fresno 93721-2219
320 W. Fourth Street, Room 830, Los Angeles 90013
1515 Clay Street, Suite 602, Oakland 94612-1430
2424 Arden Way, Suite 160, Sacramento 95825-2488
28 Civic Center Plaza, Room 525, Santa Ana 92701-4034
100 Paseo de San Antonio, Rm 125, San Jose 95113-1484
7575 Metropolitan Dr., Suite 209, San Diego 92108-4424
2901 Arch-Airport Road, Stockton 95213-9030

C. Bureau of Apprenticeship and Training - U.S. Department of Labor

1301 Clay Street, Suite 1090N, Oakland 94621-5217

D. County Superintendent of Schools

E. Community Colleges

F. Other Outreach

Outreach will also be made to minority organizations and women's groups that can be used to recruit and refer applications to help meet program sponsor's goals and timetables.

3, Affirmative Action Program

Outreach and positive recruitment activities will be done which will increase minority and women's participation in the administrative area according to the associated Affirmative Action Program.

4, Written Applications

Application for entrance in the Fire/Life Safety Technician program will be taken on a continuous basis. Applications are available at the Western Burglar and Fire Alarm Association Unilateral Apprenticeship and Training Committee Headquarters at 138 East Chestnut Avenue, Monrovia, California 91016 and individual locations of contractors approved to train. An application may appear in person Monday through Friday during regular business hours or may request the application by mail, phone, or fax.



5. Selection of Apprentice Applicants

Applicants will be selected by as follows:

- A. Minimum age of all applicants shall be 18 years. No maximum age.
- B. Educational prerequisites for entry: High school diploma, G.E.D., or possession of a High School equivalency.
- C. Physical Requirements: Drug and Alcohol Testing may be required at no cost to applicant. Some employers may require physical examination at no cost to applicant.
- D. Tests: None required
- E. Oral interviews: None required.

All applicants will be notified of acceptance or rejection of their applications. If rejected, reasons for their rejection will be stated.

- F. A pool of applicants will be established and maintained for two years as follows:
 - 1. The employer and/or committee representative who receives the application will verify that the individual applicant meets the minimum requirements to enter the program.
 - 2. Applications received by employers will be forwarded to and maintained at the apprenticeship committee office.
 - 3. A time and date will be recorded on each completed application received at the apprenticeship office. This will be used to establish a chronological list of eligible applicants.
 - 4. All applicants who meet the minimum requirements will be placed in the pool of eligible applicants.
 - 5. The applicants will be employed as follows:
 - a. All eligible applicants will be supplied with a list of employers approved to train.



- b. Applicants may seek their own employment from the list of approved employers or if an employer requests an apprentice, the applicant may be referred in chronological order from the eligible list.
 - c. If hired, the employer and the applicant shall complete the Apprenticeship Agreement (DAS 1) and forward the original signed agreement in a timely manner to the committee for authorized signatures. The agreement is then sent to the Division of Apprenticeship Standards so that it is received within 30 days of the date of indenture of the apprentice.
 - d. It is the responsibility of the Committee to contact the new hire and to provide him/her with all policies, documents, and information regarding the Related and Supplemental Instruction.
 - e. The apprenticeship committee will create a file for each apprentice.
- G. Applicant's prior work experience and training will be evaluated by the committee at the time of indenture and appropriate credit will be given toward a higher apprenticeship and/or wage bracket.
6. Goals and Timetables

Total Population in Area is 29,816,114 as of the 1990 census.

Goals for Intake of Females: 22.0%

MINORITIES (MEN AND WOMEN)

<u>Ethnic Group</u>	<u>Goals Percentage of Active</u>
Black (Not Hispanic)	7.0%
Hispanic	25.8%
Asian and Pacific Islander	6.6%
American Indian and Alaskan Native	0.6%
Filipino	<u>2.5%</u>
	42.5%



7. Records

Records will be maintained for five (5) years and kept at:
the WBFAA Headquarters.

8. Compliance

Program sponsor will submit an annual compliance report to the
Division of Apprenticeship Standards at such time as may be
requested by the Division.



**APPRENTICE POLICIES
FOR
FIRE/ LIFE SAFETY
UNILATERAL APPRENTICESHIP AND TRAINING COMMITTEE**

STATEMENT OF POLICIES

The Unilateral Apprenticeship and Training Committee (UATC) operates under the principal that in order to provide the Fire Alarm and Life Safety Industry with competent and highly skilled craftsmen, it is necessary that every apprentice be presented with an up-to-date, adequate program of training, both in the classroom and on the job.

It is necessary to conduct the program with this goal in mind. To this end the Apprenticeship Committee has established the following rules and procedures which must be observed by every apprentice.

Each apprentice is registered to the Apprenticeship Committee through agreement, and is directly responsible to them through the office of the Training Director for all matters pertaining to their apprenticeship training.

The Training Director shall act for and under the direction of the Apprenticeship Committee in the administration of the Apprenticeship Training Program. This booklet was developed to help the apprentice to have a better understanding of the responsibilities to the industry they are entering, the academic education they will be receiving, their own personal careers.

Every apprentice must maintain the proper attitude, loyalty, and respect toward the Journeymen who will teach them the trade and the employer who will pay their wages. The Apprenticeship Committee will help guide them through their apprenticeship to the successful completion of the program.

**POLICY A - 1
CHANGE OF ADDRESS**

The apprentice is responsible for maintaining a current address on file the office of the Training Director and with his or her employer.

Prompt, written notification is required for any change of address and or telephone number.



POLICY A - 2 QUITTING YOUR JOB

An apprentice should not quit his/her employer voluntarily. Any request by an apprentice to be laid off shall be considered a voluntary quit.

POLICY A - 3 DELINQUENT WORK REPORTS

One of the requirements to be eligible for an upgrade is the required number of On-The-Job training hours for each period as posted in the master file for each apprenticeship. Therefore, if the Training Director's office does not receive timely work reports they cannot record the work hours. This may cause a delay in advancement to the next pay period and higher pay scale.

Timely and accurate submission of work reports, properly signed by your supervisor is the sole responsibility of each apprentice. The work report must be received by the Training Director or bearing a post mark, no later than the tenth (10th) day of each month following the month in which the work was performed. For each day after the postmark of the tenth (10th), (8) hours will not be credited. For any work reports postmarked after the twenty fifth (25th) of the month, no hours will be credited for that month.

Hours lost due to failure to submit work reports in a timely fashion will extend the apprentice's On-The-Job training until the lost hours are made up. Any questions regarding your work reports must be communicated to the Training Director.

Should the apprentice question the total of hours on file he/she shall communicate this concern to the Training Director. The apprentice should provide the Training Director with proof of hours worked. This proof may be in the form of pay stubs and the apprentice personal work book. The Training Director shall determine the correct number of hours and the apprentice's employer of any adjustments. Repeated violation of the work report policy will be subject to disciplinary action as mandated by the Apprenticeship Committee.

POLICY A - 4 APPRENTICE WORKBOOKS

The apprentice workbook is the apprentices responsibility to keep properly filled in, up to date, and signed by his/her journeyman or supervisor. The workbook



must be available for inspection by authorized persons on the job and at all appearances before the Apprenticeship Committee when appearing for review or appeal.

POLICY A - 5 ON THE JOB SUPERVISION

Unless otherwise provided for in these policies an apprentice shall be under the direct supervision of a journeyman.

POLICY A - 6 FINAL PERIOD WORK RULES

A third year apprentice (an apprentice in his/her last period) may, at the employer's discretion, be permitted to perform work in the Fire/Life Safety industry without the direct supervision of a journey worker. Said apprentice shall not be permitted to supervise others.

POLICY A - 7 APPRENTICE ADVANCEMENT POLICY

Advancement in the apprenticeship program is based on two criteria which must be individually satisfied, not necessary concurrently, in order to be considered for advancement. Since the academic training is based on a normal school year of approximately 9 1/2 months from August through May and the On-The-Job training (work hours) is based on a calendar year, it is likely that an apprentice will satisfy one of the requirements before the other. However, BOTH must be satisfied for each period, in order to be eligible for advancement.

POLICY A - 8 FIRST AID AND CPR

All apprentices must be trained in First Aid and CPR.

POLICY A- 9 CLASS ABSENCES AND CLASS MAKE UP

All academic instruction and on-the-job training are equally vital and important



parts of the total education process in apprenticeship. Therefore, prompt attendance at all class sessions and timely and accurate completion of correspondence courses is required if an apprentice is to successfully complete the program.

Permission to make up classes or submission of tardy correspondence tests and materials are the sole discretion of the instructor and the Training Director. Student needs and the availability of instructor time shall be considered.

Excessive absences or failure to remit correspondence materials due medical situations will be handled under Policy A –12.

POLICY A - 10 CLASS TARDINESS/ABSENTEEISM

An apprentice who is tardy or who leaves class without the instructor's permission before the class is excused may be considered absent for that class.

POLICY A - 11 MAKE UP TESTS

An apprentice who misses any test, in classroom or required in his/her correspondence course may request consideration to take the test by contacting the Training Director. Three (3) make-up tests will be authorized per semester.

POLICY A - 12 VACATIONS AND LEAVES OF ABSENCE (LOA)

Vacations, leaves of absence other than for medical reasons, or special circumstances, are not normally granted while related and educational instruction is in session.

Leaves of absence for medical reasons or for personal necessity shall constitute those periods of absence from work and/or school which exceed one week. All requests for a LOA must be filed with the apprentice's employer and the Training Director no less than ten (10) days following the first date of absence. Such requests must be in writing and provide the following information:

- a. The type of LOA requested.
- b. Dates covered (From when to when including those dates of school



that will be missed).

- c. Your employers name and company address.
- d. The reason for your request.
- e. Supportive documentation.

A leave of absence may be granted for up to a maximum of six (6) months and any extensions from the original date of the first absence shall be subject to review by the Apprenticeship Committee. Apprentices granted a leave of absence shall keep the Training Director informed, in writing, of their progress on a monthly basis. Failure to provide such documentation will be subject for review by the Apprenticeship Committee.

POLICY A -13 DISCIPLINE PROCEDURES

It is the intent of the Apprenticeship Committee to bring uniformity to the disciplinary process for violations of apprenticeship policies. With this in mind the process set forth below will be followed.

Penalties up to and including removal from the program may be assessed for any violation or any combination of violations of these policies. The apprentice's entire record will be reviewed prior to any recommended penalties being assessed. The Training Director will administer progressive discipline, approved by the Apprenticeship Committee, as follows:

1. A written and verbal reprimand to the apprentice's file.
2. Upgrade withheld not to exceed 60 days.

Serious or continued violations of the apprenticeship policies at any time during the course of the apprenticeship program may result in the immediate suspension of an apprentice for a period not to exceed 60 days or a request to the State of California Administrator of Apprenticeship that the subject apprentice be removed from the program. Depending on the severity of the infraction, this step may be taken with or without any prior disciplinary action by the Apprenticeship Committee.

The apprentice upon receipt of any notification from the Training Director that he/she has allegedly violated apprentice policies will invoke the following procedure:

- Upon receipt of such notification that he/she has been accused of a violation of the apprenticeship policies, contact the Training Director no



later than three (3) working days following the receipt of notice, to arrange an interview.

- After an interview, and after any follow up investigation by the Training Director, the apprentice may be requested to appear before the full Apprenticeship Committee at their next regularly scheduled meeting.

If requested to appear before the Apprenticeship Committee the apprentice shall receive written notice by regular or certified mail or fax or e-mail or hand delivered instructing him/her of the date, place and time of of his/her scheduled appearance and of the violations. Additionally, he/she is to bring a properly signed, up to date workbook and any documentation in support of his/her response to the violations.

The Apprenticeship Committee will, through interview, supportive documentation, and review of the apprentice's entire record, consider appropriate action which may include the assessing of penalties.

If a penalty is assessed and if the assessed penalty involves a withhold of an upgrade, it will be implemented upon the next regularly scheduled upgrade period due the apprentice in the absence of an appeal.

POLICY A - 14 RIGHT OF APPEAL

An apprentice who feels that a penalty recommended by the Apprenticeship Committee is unfair or unjust, may appeal this decision to the Advisory Committee for review and recommendation to the the Apprenticeship Committee. The appeal must be in writing and not more that 30 days after notification of the decision of the Apprenticeship Committee.

POLICY A-15 ACADEMIC PROBATION

An apprentice posting a failing semester grade shall be required to contact the Training Director to show cause why he/she should not be removed from the program or placed on academic probation and be required to repeat the semester.

An apprentice on academic probation, failing the course materials for a second time, shall appear before the Apprenticeship Committee to show cause why he/she should not be removed from the program.



POLICY A-16
POWDER ACTUATED TOOLS

As required by the State of California, any person operating a powder actuated tool shall have a proper license issued by the manufacturer of that tool. No apprentice shall be required to operate a power actuated tool without proper training and a license for the tool he/she is using.

Proper safety equipment such as eye shields, gloves and hard hats must be available to apprentices using power actuated tools.

POLICY A-17
CONTINUING EDUCATION FOR APPRENTICES.

In the event that an apprentice has completed all of his/her required related and supplemental academic training but has not fulfilled the required hours of on-the-job training, such apprentice must continue to take courses until qualified for certification. Any apprentice affected by this policy shall contact their instructor to determine which courses of study would be most beneficial to to the apprentice. This information shall be made available to the Training Director.

During the period of continuing education all policies and rules governing apprenticeship training shall continue in full force and effect.

POLICY A-18
CHEMICAL SUBSTANCE ABUSE

The apprenticeship committee has adopted the following alcohol and chemical substance abuse policy in recognition of it's obligation to protect and preserve the safety of all apprentices, both in connection with the classroom and on-the-job training.

It is the policy of the Apprenticeship Committee that all it's apprentices must be free from the influence of alcohol and of any controlled substances at all times. Be it for classroom work or otherwise and at all times when they are performing work for the employer or on a company work site.

It is also the policy of the Apprenticeship Committee that apprentices who



report for class or work under the influence of alcohol or any other controlled substance at any time during their classroom or work hours, or at times incidental to thereto, come under the influence of alcohol drugs or other controlled substances, or who possess alcoholic beverages or other controlled substances while on the employers work sites, or at any time or place incidental to their classroom or on-the job activities, shall be subject to discipline up to and including suspension and/or termination from the apprenticeship program.

Apprentices apprehended selling alcohol, drugs of other controlled substances either in the classroom or on the employer's worksheet or at any time or place incidental to their classroom or on-the job activities, will be turned over to the proper authorities for prosecution.

In order to assure that the foregoing policy is fully understood, each apprentice shall sign the following Alcohol and Chemical Substance Abuse statement as a condition to his/her registration into the apprenticeship program:

I understand that if there is reasonable cause to believe that I am under the influence of alcohol, drugs or other controlled substances at any time during my work hours or in the classroom, I may be requested to report immediately to a physician, medical clinic, laboratory or hospital designated by my employer for alcohol and/or substance abuse testing. If I refuse to report, I may be disciplined, up to and including suspension from the apprenticeship program.

If testing is conducted and the report confirms that I was under the influence of alcohol, drugs or other controlled substances, I may be disciplined, up to and including suspension or termination from the program.

POLICY A-19 IMPLEMENTATION AND MONITORING OF POLICY A-19

Apprentices who admit to having an alcohol and/or substance abuse problem and/ or who test positive to a substance test given in accordance to Policy A-19 shall be immediately suspended from both work and school and required to enroll in a program of rehabilitation.

Upon satisfactory completion of the program of rehabilitation and subject to the recommendation of the Training Director the Apprentice Committee may, after a full review, remove the apprentice from suspension from work and



school. Apprentice must, in writing agree to attend meetings of such groups recognized as beneficial in the treatment of the abuse must inform the Training Director of such actions.

Should the apprentice be found to be abusing these substances for a second time this shall be cause and grounds for the cancellation of their apprenticeship agreement.

POLICY A - 20 ANTI-HARASSMENT

This policy insures that all apprentices, instructors, and staff will endeavor to maintain a safe work and classroom environment free from unreasonable interference, intimidation, hostility, or offensive behavior on part of the supervisors, instructors, co-workers, and visitors. It also acknowledges that harassment, sexual or otherwise, is against the law and will not be tolerated by the Apprenticeship Committee.

The Apprenticeship Committee's position is that sexual harassment is a form of misconduct that undermines the integrity of the employment and student relationship. No employee or apprentice, either male or female should be subject to unsolicited and unwelcome sexual overtures or conduct, either verbal or physical. Sexual harassment does not refer to occasional compliments of a socially acceptable nature. It refers to behavior that is not welcome, that is personally offensive, that debilitates moral, and that, therefore, interferes with work or school effectiveness.

Such behavior may result in disciplinary action up to and including dismissal.

Sexual Harassment is defined as:

Unwelcome sexual advances (either verbal or physically), requests for favor, and other verbal or physical conduct of a sexual nature.

POLICY A-21 STATE CERTIFICATION

Any apprentice having successfully completed his/her Fifth (5th) period of training, (both the On-The-Job and Supplemental and Related Instruction) may be authorized, by the Apprenticeship Committee, to take the State of California Certification Examination for Fire/Life Safety Technician.



Any apprentice who takes and passes the Certification Test shall upon successful completion of his/her Sixth (6th) period of training (both On-The-Job and the Supplemental and Related Instruction) shall receive an upgrade to Journeyman Life/Safety Technician.

Apprentices who fail to take or pass the Certification Test, after being authorized to do so by the Apprenticeship Committee, shall remain in step six (6) until he/she takes and passes the Certification Test.



JOURNEYMEN PROGRAM

JOURNEYMAN

A journeyman means a person who has either;

1. Completed an accredited apprenticeship in his/her craft, or
2. Who has completed the equivalent of an apprenticeship program in length and content of work experience and all other requirements in the craft which has workers classified as journeymen in the apprenticeable occupation.

For the WBFAA, a journeyman is a person who has 4,000 hours of verified field work.

BENEFITS FOR JOURNEYMEN

There are advantages for journeymen who participate in the Apprenticeship Program. These include:

- Access to specialized courses for continuing education
- Pretesting for the State of California certification test
- Remedial and skills upgrading classes
- A system designed to assure compliance with state certification
- Ability to contribute to the professionalism of the Fire/Life Safety Industry

STATE OF CALIFORNIA CERTIFICATION

The WBFAA Apprenticeship Program will provide pretesting for the State of California certification exam. The passing grade for the pretest will be 80% and NEC and NFPA 72 code books may be used during the test. The test will be graded in a manner that will indicate the areas of weakness that require further study. Journeymen will receive a report of their results, remedial requirements and final results. Employers will receive a pass/fail report for each of their employees.

A journeyman with more than 4,000 hours who does not pass the test can enroll in the modules that are indicated for remedial study to prepare to take the State of California Certification Exam for Fire/Life Safety Technician.

Journeymen may choose to retest in those areas where they scored less than 80%.

FOR EMPLOYEE WHO DOES NOT PASS CERTIFICATION EXAM

The WBFAA Training Office offers an evaluation of the journeyman and recommends enrollment in specific courses in the Apprenticeship Program.

FOR EMPLOYEE WITH LESS THAN 4,000 HOURS OF FIELD WORK

The WBFAA Training Office offers an evaluation based on work experience, educational experience and competency. The employee will then be placed in the appropriate step of the Fire/Life Safety Apprenticeship Program.



DEFINITIONS

The following definitions are compiled from various sources including the California Code of Regulations, California Apprenticeship Council, Title 8, Section 205, Article 2.

JOURNEYMAN

A journeyman means a person who has either;

1. Completed an accredited apprenticeship in his/her craft, or
2. Who has completed the equivalent of an apprenticeship program in length and content of work experience and all other requirements in the craft which has workers classified as journeymen in the apprentice able occupation.

INSTRUCTOR

An Instructor means a person who has either:

1. Completed an accredited apprenticeship in his/her craft, or
2. Completed the equivalent of an apprenticeship in length and content of work experience in the craft but may not necessarily be designated as a journeyman.

APPRENTICEABLE OCCUPATION

An Apprenticeable Occupation is one which requires independent judgment, the application of manual, mechanical, technical or professional skills and is best learned through an organized system of on-the-job training together with related and supplemental instruction.

REGISTRATION OF AN APPRENTICESHIP AGREEMENT

Registration of an Apprentice Agreement means the acceptance and recording thereof by the Division of Apprenticeship Standards which serve as evidence of the participation of the apprentice in a specific apprenticeship program.

APPRENTICESHIP PROGRAM

Apprenticeship Program means a comprehensive plan containing, among other things, apprenticeship program standards, committee rules and regulations, related and supplemental instruction course outlines and policy statements for the effective administration of that apprenticeable occupation.



APPRENTICESHIP PROGRAM STANDARDS

Apprenticeship Program Standards means that written document containing among other things all the terms and conditions for the qualification, recruitment, selection, employment and training, working conditions, wages, employee benefits, and other compensation for apprentices and all other provisions and statements as required by the Labor Code and this chapter which, when approved by the Chief of the Division of Apprenticeship Standards (DAS), shall constitute registration of such, and authority to conduct that program of apprenticeship in the State of California.

APPRENTICESHIP PROGRAM SPONSOR

Apprenticeship Program Sponsor means a joint apprenticeship committee, a unilateral labor or management committee, or an individual employer program.

RELATED AND SUPPLEMENTAL INSTRUCTION (RSI)

Related and Supplemental Instruction means an organized and systematic form of instruction designed to provide the apprentice with knowledge including the theoretical and technical subjects related and supplemental to the to the skill(s) involved.

MAINTENANCE

Maintenance is defined as routine, recurring and usual work for the preservation, protection and keeping of any facility for its intended purpose in a safe and a continually usable condition.

DIVISION OF APPRENTICESHIP STANDARDS (DAS)

The Division of Apprenticeship Standards (DAS) administers California apprenticeship law and enforces apprenticeship standards for wages, hours, working conditions and the specific skills required for state certification as a journeyman in an apprenticeable occupation. DAS promotes apprenticeship training, consults with program sponsors, and monitors programs to ensure high standards for on-the-job training and supplemental classroom instruction.

CHIEF DIVISION OF APPRENTICESHIP STANDARDS

The Chief of the Division of Apprenticeship Standards is responsible for the approval and oversight of approved apprenticeship programs in the State of California.

LOCAL EDUCATIONAL AGENCY (LEA)

The Local Educational Agency provides related and supplemental instruction (RSI) to individuals participating in the apprenticeship program. Chabot College is serving as the LEA for the WBFAA Apprenticeship Program.



APPRENTICESHIP CURRICULUM

This section outlines the curriculum which covers the standard skills required of a work-ready, entry-level Fire/Life Safety Technician. It provides a valuable resource for students considering careers as Fire/Life Safety Technicians and for counselors, educators and academic administrators who have students interested in the electronics systems industry. It also provides an outline for employers who depend on the trained and knowledgeable Fire/Life Safety Technicians.

OBJECTIVES

STUDENTS

A review of these skills can help students decide whether to pursue careers as Fire/Life Safety Technicians.

SCHOOL COUNSELORS AND ADMINISTRATORS

This outline will assist counselors who want to evaluate and advise students regarding their potential to successfully complete Fire/Life Safety training and work as Fire/Life Safety Technicians.

EMPLOYERS

Job candidates trained to possess these skills can assure prospective employers of their competency. Employers can use the skill set as a criterion for hiring. As more new workers are hired with these skills, employers can direct corporate training resources to develop more advanced skills.

The work performed by many Fire/Life Safety Technicians, although broad in scope, revolves around a finite number of activities, including installing, repairing and maintaining component parts of a variety of electronic systems in commercial and residential buildings. The skills are based upon a detailed analysis of the duties a Fire/Life Safety Technician is expected to perform and a breakdown of each duty into the specific tasks required for its performance.



TRAITS AND BEHAVIOR OF FIRE/LIFE SAFETY TECHNICIANS

The following traits and behaviors have been identified as required or desirable for students to succeed in the workforce as a Fire/Life Safety Technician.

Demonstrations of the value of these traits and behaviors should be interwoven throughout the training program as appropriate.

- Dependability
- Freedom from substance abuse
- Safety conscious
- Honesty
- Trustworthy
- Application of common sense
- Good listening skills
- Punctuality
- Focus on quality
- Comply with company standards, rules, regulations and policies including interpreting employer/ employee handbook and procedures including dress, personal hygiene and cleanliness
- Ability to choose the most cost effective method
- Practice time management and follow work schedule
- Assume responsibility for own decisions and actions
- Exhibit pride
- Display initiative in undertaking new tasks
- Show assertiveness appropriate to the situation
- Seek work challenges
- Understand and apply ethical principles to decision making
- Understand the importance of providing good customer service (internal and external)
- Exhibit positive behavior, provide praise and suggestions for improvement
- Respond constructively to suggestions for improvement
- Channel/control emotional reactions constructively
- Recognize problems and work toward their solution
- Exhibit sensitivity to internal and external customer needs
- Treat people with respect
- Understand interactive relationships required for effective teamwork
- Evaluate outcome
- Follow oral job instructions
- Write words and numbers legibly



OVERVIEW OF CURRICULUM BY YEAR FIRE/LIFE SAFETY TECHNICIAN

FIRST YEAR

Introduction to the Trade
Basic Safety
Basic Math
Introduction to Hand Tools
Introduction to Power Tools
Introduction to Blueprints
Basic Rigging
Construction Materials and Methods
Pathways and Spaces
Fasteners and Anchors
Hand Bending Conduit
Electrical Theory One
Electrical Safety
Low Voltage Cabling
TOTAL HOURS 165

SECOND YEAR

Craft-Related Mathematics
Electrical Theory Two
Basic Electronics
Electrical Test Equipment
Power Quality and Grounding
Introduction to Electrical Blueprints
Voice and Data Systems
Switching Devices and Timers
Terminating Conductors
Introduction to Codes and Standards
Computer Applications
TOTAL HOURS 152.5

THIRD YEAR

Cable Selection
Busses and Networks
Fiber Optics
Video Systems
Wireless Communication
Site Survey, Project Planning, Documentation
Maintenance and Repair
Introduction to Supervision
Fire Alarms
Security Systems
TOTAL HOURS 205



APPRENTICESHIP COURSE OUTLINE FIRE/LIFE SAFETY TECHNICIAN TRAINING

FIRST YEAR

ORIENTATION

6 HOURS

- WBFAA Technician Training Policies and Procedures
- History of the CAA and CAFAA
- Mission, Goals and Objectives of the CAA and CAFAA
- Maintaining a Drug Free Environment

PERSONAL & INTERPERSONAL SKILLS 12 HOURS

- Personal Skills For Success In The Work Environment
- Effective Interpersonal Skills In The Work Environment
- Effective Listening

TOOLS OF THE TRADE

3 HOURS

- Identification of the Basic Tools of the Trade
- Use and Care of Hand Tools

OCCUPATIONAL SAFETY

21 HOURS

- Safety First
- Construction Site Job Hazards
- Good Safety Practices: Personal, Electrical, Fire, Hand And Power Tools, Equipment
- Electrical Hazard Awareness
- Proper Lifting Procedures
- Proper Use and Care Of Ladders And Scaffolds
- Safety Communications: Fire Safety, Electrical Safety
- Proper Use and Care Of Powder Actuated Tools
- How to Complete an Accident Report Accurately
- Material Safety Data Sheets (MEDS)
- Environmental Protection Agency (EPA)
- Occupational Safety and Health Administration (OSHA)
- American Red Cross Standards (ARC)

BASIC MATH

12 HOURS

- Pretest
- Addition and subtraction of whole numbers
- Multiplication and division of whole numbers
- Working with measurements
- Fractions
- Decimals
- Conversion processes
- The Metric system
- Proportions
- Construction geometry (includes practical applications)
- Basic algebra equations

ELECTRICAL PRACTICE AND THEORY 12 HOURS

- The Structure of Matter



- Electron Theory
- Electromotive Force
- Electrical Terms and Symbols
- Ohm's Law
- DC Series and Circuits
- AC Series and Circuits
- Electronic Terms and Symbols
- Magnetic Fields

HAND BENDING OF CONDUIT 9 HOURS

- Hand Bending Equipment
- Cutting, Reaming and Threading Conduit
- Cutting and Joining PVC Conduit
- Piping Offsets

CONSTRUCTION MATERIALS AND METHODS 17 HOURS

- Building Materials
- Residential Frame Construction
- Commercial Construction Methods
- Tools Used for Running Cable
- Asbestos Recognition
- EMT, PVC, Rigid Galvanized, Flex
- Non-Metallic Coverings, Hydraulic Pullers
- Wire Types, Fiber Optic Cable

RACEWAYS, BOXES AND FITTINGS 15 HOURS

- Raceways
- Conduit and Fill Ratios
- Metal Conduit Fittings
- Boxes and Fill Ratios
- Bushings and Locknuts
- Sealing Fittings
- Cable and Raceway Supports
- Wireways
- Panduit and Wiremold
- Storing Raceways
- Handling Raceways
- Ducting
- Underground Systems, Use of a Megger
- Making a Conduit-To-Box Connection
- Masonry, Concrete, Metal, and Wood Environment



FASTENERS AND ANCHORS

5 HOURS

- Installation and Use of Fastening Devices
- Threaded and Non-Threaded Fasteners
- Bolts, Nuts and Screws
- Hammer-Driven Pins and Studs
- Mechanical Anchors
- Epoxy Anchoring Systems

INTRODUCTION TO BLUEPRINTS

15 HOURS

- Introduction
- Components of the Blueprints
- Scale
- Lines of Construction
- Abbreviations, Symbols, and Keynotes
- A Sheets, M Sheets, As-builts
- Using Grid Lines to Identify Plan Locations
- Dimensions
- Shop Drawings

HOW TO TIE BASIC KNOTS

3 HOURS

- Square Knots

BASIC RIGGIN

3 HOURS

- Slings; Hitches; Rigging hardware
- Sling Stress; Hoists
- Rigging operations & Safety Practices

ELECTRICAL SAFETY

15 HOURS

- Intro to National Electric Code (NEC)
- Interpreting the Language of the NEC
- Understanding and Applying Article 110 of the NEC
- Understanding the National Electrical and Update Process
- General Building Wire Properties and NEC Requirements
- Understanding Conductor Insulation and NEC Specs

LOW VOLTAGE CABLING

22 HOURS

- Intro to Premises Cabling
- Electrical Properties
- Transmission Fundamentals
- Safety Codes
- TIA/EIA Standards & Codes
- Telecommunication Standards & Codes
- Applying Article 100 of the NEC
- Pathways and Spaces
- Systems Architecture

TOTAL CLASSROOM HOURS 170 HOURS



**APPRENTICESHIP COURSE OUTLINE
FIRE/LIFE SAFETY TECHNICIAN TRAINING**

SECOND YEAR

REVIEW OF TECHNICAL MATH

10 HOURS

- General Review
- Solving NEC and NICET Problems
- Length, Area, Volume
- Mass, Weight, Pressure
- Temperature
- Ambient Temperature and Noise
- Variables, Constants, Coefficients
- Rules of Algebra
- Solving Algebraic Equations
- Geometry: Points, Lines, Circles, Angles, Polygons, Triangles
- Working with Right Triangles
- Conversion of Units

ELECTRICAL THEORY TWO

27.5 HOURS

- Resistive Circuits
- Resistances in Series and Parallel Circuits
- Ohm's Law
- Voltage and Current in Series and Parallel Circuits
- Kirchoff's Laws
- AC Theory
- Sine Wave Generation and Terminology
- AC Phrase Relationships
- Resistance in AC Circuits
- Inductance in AC Circuits
- Capacitance
- Current in AC Circuits
- Voltage in AC Circuits
- Power in AC Circuits
- Article 725 of the NEC
- Class 2 and 3 Circuits
- Transformers

BASIC ELECTRONIC THEORY

10 HOURS

- The Atom
- Semiconductor Fundamentals: Conductors, Insulators, Semiconductors
- Diodes and Rectifiers
- Light-Emitting Diodes
- Transistors: NPN, PNP, Field-Effect
- Silicon-Controlled Rectifiers
- Discs and Triacs
- Operational Amplifiers
- NICET



ELECTRICAL TEST EQUIPMENT

17.5 HOURS

- Meters: Ammeter Voltmeter, Ohmmeter
- Analog Multimeters
- Digital Meters
- Clamp-On Ammeters
- Noise Testing Using Oscilloscopes
- Watt Meter
- Meg Ohmmeter
- Frequency Meters/Counters
- Time Domain Reflectometer
- Continuity Testers
- Recording Instruments
- Laptop Computers
- Intelligibility Meter and dB Meter

POWER QUALITY AND GROUNDING

20 HOURS

- Electrical Generation and Distribution Systems
- Electrical System Grounding and Bonding
- Building Lighting Protection
- Common Causes of Poor AC Power Quality
- Power System Protection and Conditioning Equipment
- DC Power Supplies
- Cable Shielding and Grounding Techniques to Minimize EMI
- Static Electricity Problems and Prevention
- Testing for a Proper Low-Voltage Ground
- Location of Ground Faults

ELECTRICAL BLUEPRINT READING

7.5 HOURS

- Fire Alarm Shop Drawings
- Site and Floor Plans
- Blueprint Layout
- Drafting Lines
- Electrical Symbols
- NFPA 170 Symbols
- Scale Drawings
- Analyzing Electrical Drawings
- Power Plans
- Reflected Ceiling Floor Plan
- Electrical Details and Diagrams
- Written Specifications



VOICE AND DATA SYSTEMS **25 HOURS**

- Basic Telephone Operation, Key Systems, and Exchanges
- Network Topologies
- Cable for Voice Systems
- Cable for Data Systems
- Fiber Optics with RFI
- Installation Standards
- Testing and Troubleshooting

SWITCHING DEVICES AND TIMERS **7.5 HOURS**

- Switches
- Relays
- Security and Simplex Time Recorder
- Photoelectric Devices for Burglar Alarms
- Proximity Switches for Burglar Alarms
- Dry C Contacts

TERMINATING CONDUCTORS **15 HOURS**

- Types of Conductor Terminations
- Low-Voltage Cable/Conductor
- Communications/Data Conductor Termination Procedures

LOW-VOLTAGE CODES AND STANDARDS **6 HOURS**

- Overview of Documents

COMPUTER APPLICATIONS **24 HOURS**

- Special Terms
- Microprocessors
- Mainframe Computers
- Personal Computers
- Laptop Computers
- Computer Programs
- Operating Systems
- Networks
- Network Access
- Topologies
- OSI Reference Model and Protocols
- Basic Computer Troubleshooting

TOTAL CLASSROOM HOURS = 170 HOURS



**APPRENTICESHIP COURSE OUTLINE
FIRE/LIFE SAFETY TECHNICIAN TRAINING**

THIRD YEAR

CABLE SELECTION 10 HOURS

- Low-Voltage Cable Conductors and Insulation
- Low-Voltage and Optical Fiber Cables
- Cable Signal Loss Consideration
- Common Cable Applications

BUSSES AND NETWORKS 20 HOURS

- The Data Highway
- Transfer Medium
- OSI Reference Model
- Connections to Transfer Medium
- Operation Principles of Network Topologies
- Access Control
- Relation Network Protocols to the OSI Model
- Common Network Nomenclature
- Ethernet, Bacnet, Lonworks
- The Internet
- Microcomputer-Based Local Area Networks (LANs)
- Proprietary Control Networks
- Bridges, Routers, and Gateways
- Wide Area Networks (WANs)

FIBER OPTICS 15 HOURS

- Fundamentals, Benefits, and Applications
- Fiber-Optic Theory
- Fiber-Optic Components
- Transmitters
- Receivers
- Connectors, Couplers, and Splices
- Working with Fiber-Optics
- Fiber-Optic Testing

VIDEO SYSTEMS 15 HOURS

- Cable Television System
- Satellite Television
- Television Broadcast Receiving
- Close-Circuit Television (CCTV)
- Multiplex, Lens Selections
- MATV and SATV Systems
- System Grounding for Interference Suppression



WIRELESS COMMUNICATION

15 HOURS

- Wireless Modulation, Analog and Digital Signals, Multiplexing
- Radio Frequency (RF) Systems
- Wireless Personal Communications
- Infrared (IR) Systems
- Power Line Carrier (PLC) Systems
- Wireless Computer Networks
- Satellite Communications
- Test Equipment
- Telecommunications Antenna Installation

SECURITY SYSTEMS 1

10 HOURS

- Introduction to Security Systems
- Security Systems Services
- Types of Security System Sensors
- Annunciation (Notification) Devices
- Control Panels
- Communication and Monitoring Systems

SECURITY SYSTEMS 2

10 HOURS

- Systems Design
- General Installation Guidelines
- System and Equipment Installation Guidelines
- Programming Options
- Inspection, Testing, and Maintenance
- Security System Troubleshooting

FIRE ALARMS

40 HOURS

- Introduction to Life Safety and Property Protection
- History
- Codes and Standards
- Fire Alarms Systems Overview
- Fire Alarm System Equipment
- Fire Alarm Initiating Devices
- Control Panels
- FACP Primary and Secondary Power
- Notification Appliances
- Communications and Monitoring
- General Installation Guidelines
- Total Premises Fire Alarm System Installation Guidelines
- Fire Alarm Related Systems and Installation Guidelines
- Household Fire Alarm Installation Guidelines
- Inspection, Testing, and Maintenance
- Troubleshooting



MAINTENANCE AND REPAIR

12.5 HOURS

- Maintenance vs. Repair
- Causes of Failures
- Test Equipment
- Common Causes of Electrical Equipment Faults
- A Systematic Approach to Troubleshooting
- Customer Interface
- Physical Examination of the System
- Basic System Analysis
- Use of Manufacturers' Troubleshooting Aids
- Fault Isolation in the System/Unit Problem Area
- Preventive Maintenance
- Inspecting and Testing Forms

SITE SURVEY, PROJECT PLANNING AND DOCUMENTATION 12 HOURS

- Job Estimating and Bidding
- Job Planning After the Contract Award
- Review Job Requirements
- New Construction Site Survey, Planning and Documentation
- Scheduling Work
- Acquire the Needed Materials/Equipment
- Assign the Installation Crew
- Completing The Installation
- Quality Control/Acceptance Tests
- Punch List
- Job Completion Activities
- Retrofit Installation Site Survey, Planning
- Documentation
- Record Set Drawings

INTRODUCTION TO SUPERVISION

10 HOURS

- Communication
- Leadership
- Supervising Employees
- Problem Solving
- Project Organization
- Contract Documents
- Project Cost
- Planning and Scheduling
- Closing Out the Job
- Safety

TOTAL CLASSROOM HOURS

170 HOURS



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