

FIRE COMMAND 2A

Command Tactics at Major Fires

Instructor Guide

accredited by



for the

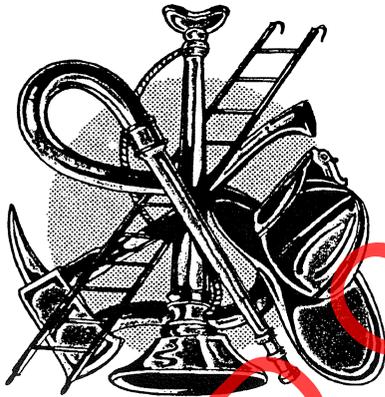
CALIFORNIA FIRE SERVICE
TRAINING AND EDUCATION SYSTEM

Second Edition, March 1985

RETIRED CURRICULUM

FIRE COMMAND 2A

Command Tactics at Major Fires
Instructor Guide



published by

STATE FIRE TRAINING

California State Fire Marshal
7171 Bowling Drive, Suite 600
Sacramento, CA 95823-2034

FIRE COMMAND 2A

COURSE OBJECTIVES

STUDENT WILL BE ABLE TO:

- I. Identify the elements of the Incident Command System and its relationship to the fireground.
- II. Identify the qualities of a good Incident Commander.
- III. Apply the elements of the Incident Command System to fireground situations.
- IV. Be Able to formulate objective-oriented game plans.
- V. Be able to utilize prefire planning to effectively manage fireground operations.
- VI. Initiate, maintain, and control effective fireground communication procedures.
- VII. Use a systematic method of formulating strategies and developing plan of attack.
- VIII. Develop an effective fireground organization using divisions to decentralize responsibilities.
- IX. Develop a standard approach to command, transfer of command, and operating from mid-point stages of command.
- X. Safely locate, protect, and remove fire victims.
- XI. Directly assist rescue, fire attack, and property conservation by coordinating the necessary support activities.
- XII. Properly utilize and position apparatus and equipment to the best advantage.
- XIII. Define rules, procedures, and major factors required for firefighter safety and welfare.

FIRE COMMAND 2A

INTRODUCTION

This course has been designed by a group of fire service professionals to meet the needs of those individuals actively involved with complex fireground emergencies in large occupancies. It is one of a series of courses in the Fire Command Curriculum designed to show the use of the Incident Command System. This course will involve fireground operations at multiple alarm responses to structure fires, not including high rise.

The Incident Commander is in the position of applying the Command System to situations that have almost a limitless combination of factors. The setting is the real world and will always present many challenges. Your challenge will be to understand and apply the lessons learned in this class to fireground operations.

Remember, fireground confusion is complicated by the following realities:

- Fire grows and moves in highly dynamic ways.
- The arrangement and construction of structures create a variety of barriers and problems.
- Human beings tend to exhibit screwy behavior under fire conditions.

Emphasis will be placed on the use of the latest emergency management techniques, efficient utilization of manpower, and implementation of fireground safety principles. You will be expected to master the principles of Incident Command and be able to demonstrate that knowledge in the problem analysis and solution of case studies and simulated fires.

So sit back, think, forecast, repeat, learn from others, get involved, and most of all, enjoy and have fun.

FIRE COMMAND 2A

AGENDA

DAY I

0800-0830 REGISTRATION / INTRODUCTION

0830-1000 OPENING EXERCISE

1000-1200 ICS OVERVIEW

Review of Davistown
Review of Organizational Charts
Standard Operating Procedures
ICS Implementation

1200 LUNCH

1300-1400 THE "INCIDENT COMMANDER"

Decision Making
Command and Control
Evaluation and Review
Communications
Personal Characteristics

1400-1700 FIREGROUND MANAGEMENT

Fireground Factors
Strategical Considerations
Tactical Considerations
Fire Stream Management
Apparatus Placement
Support Activities
Action Plan Worksheet

DAY II

0800-0830 REVIEW / VIDEO

0830-1000 ACTION PLAN DEVELOPMENT - SKULL SESSIONS

1000-1200 INCIDENT COMMAND SYSTEM DEVELOPMENT - CASE STUDY

Los Angeles City Library Fire

FIRE COMMAND 2A

1200	LUNCH
1300-1400	BUILDING SURVEY / PREFIRE PLANNING
1400-1700	BUILDING SURVEY - FIELD
1830-2100	PREFIRE PLANS DEVELOPMENT

DAY III

0800-0830	REVIEW / VIDEO
0830-1000	SPECIAL CONSIDERATIONS/FIREGROUND SAFETY
1000-1200	ACTION PLAN DEVELOPMENT
	Detroit Michigan Warehouse Fire

1200 LUNCH

1300-1700 DYNAMIC SIMULATION

DAY IV

0800-0830	REVIEW / VIDEO
0830-1200	DYNAMIC SIMULATION
1200	LUNCH
1300-1700	DYNAMIC SIMULATION

DAY V

0800-1000	CRITIQUE SIMULATIONS / REVIEW FOR FINAL
1000-1200	FINAL EXAM / CLASS EVALUATIONS

STUDENT INFO

INSTR. NOTES

DAVISTOWN

GENERAL INFORMATION

The City of Davistown was incorporated in December of 1980. Since its incorporation, it has experienced steady, well-managed growth. Its present city boundaries cover 28 square miles, and contain a population of 95,000, which is expected to increase to 140,000 by the year 2000.

Of the 28 square miles, approximately 50% is developed. The undeveloped portion contains low lying hills and vegetation and is largely owned by one developer. The developed area includes a rapidly expanding commercial center, light industry, a jail, a university, two hospitals, and a waterfront which is used primarily for recreational purposes. A large electrical plant is also located near the waterfront.

Since becoming incorporated, it has become a well-planned community with a very stiff set of growth management rules. Building and fire codes, which include a mandatory sprinkler ordinance for most industrial, commercial and multi-family dwellings are also in place. Prior to the time of incorporation, there was virtually no land use plan and enforcement of the building and safety codes was practically non-existent. This allowed for construction of many substandard buildings located in the center of town.

In addition to the rapid growth, Davistown is fast becoming a transportation center of considerable importance to Cody County. It is presently served by one railroad, two commuter airlines, and a small shipping port on a navigable waterway. Two interstate highways cross near the center of town.

Davistown is multi-racial, but largely composed of middle-classed to upper middle-classed population. It is comprised of single family dwellings, along with large areas of substandard, multi-occupancy transient hotels and housing units. In the outlying areas of the city, there are large sections of expensive upper-income housing in both single and multiple type units. There are sections of the city, primarily along the waterfront, which contain modern multi-story condominium units.

The outlying portions of the city contain many brush-covered hillsides with scattered custom homes along with neighborhood commercial centers.

The central business district is somewhat congested, featuring a large enclosed shopping mall which opened in late 1986. Building heights often reach 15 stories most, with the exception of the new hotels, are unsprinklered.

Industrial tracts are generally well planned and contain modern tilt-up construction up to three stories in height. Most are sprinklered. The older industrial tracts contain construction ranging from steel Butler-type buildings to brick concrete block, and wood frame. The greatest percentage of these are unsprinklered. Several brand new hotels and restaurants

The initial exercise should be designed as an "ice breaker" to help get all students involved in a project that facilitates teamwork and can be applied to the subject matter of the class.

the puzzle exercise is designed to demonstrate the concept of the incident command system in a rather basic way.

There are 5 sets of puzzles.

Each set contains two identical puzzles.

On the bottom of each box there is a 1 or 2. Box 1 is normal and has not been tampered with. Box 2 has been assembled and divided into five equal parts. each section of the puzzle has been marked on the bottom with numbers 1-5.

Divide the class into five equal groups. Select groups randomly so students from the same departments don't end up in the same group. Have the class seat themselves according to the new groups. (They will stay in these groups throughout the rest of the week.)

Divide each group into two equal sub-groups.

Have each group check the number on the bottom of the puzzle box. have those with a 2 on the bottom go outside and wait for your instructions.

STUDENT INFO

INSTR. NOTES

have recently been built in hopes of expanding and improving land use along the waterfront.

FIRE DEPARTMENT

The fire department, under the direction of Chief James McMullen, has undergone many changes during the last six years. It has recently received a Class II rating from ISO. The department consists of 87 uniformed and 6 support personnel. There are 78 assigned to shift on a three-platoon basis, with a minimum manning level of 26 including the shift Battalion Chief. Front line (manned) apparatus include:

- Five (5) Engines
 - a. Two (2) with 50' Tele-Squirts
 - b. All 1500 gpm
- One (1) Truck - 95' Aerial platform
- Two (2) Paramedic Units - Transport capabilities

The equipment is modern and up-to-date, with the oldest in-service apparatus being purchased in 1982. There are two (2) 1980 1250 gpm pumpers and a 1965 Tiller-operated 100' aerial in reserve. There are also a Light and Air unit, Type 3 Brush Engine, Water Tender, and Paramedic unit in reserve. All uniformed personnel assigned to forty hours are assigned staff functions for emergency operations, with the exception of the Fire Chief. He has elected not to take an active role in emergency incidents.

The city has entered into a total automatic aid agreement with three (3) surrounding jurisdictions. This has resulted in the unification of fire-ground operations for all cities. The on-duty manpower for the other cities is as follows:

Miltown

Two engines	3 Firefighters each
One Truck	4 Firefighters each
One Paramedic Unit	2 Firefighters each
One Battalion Chief	Not assigned to shift
Total on-duty strength	12 Firefighters

Once all the students in the groups with a 2 on the bottom of their puzzle have left, instruct the remaining groups to begin.

Go outside and explain to the groups that their puzzles have been equally divided into five sections and all they need to do is separate the puzzle by the numbers written on the bottom of each piece, i.e. all the ones in a pile twos in a pile, etc. Then have each individual work on one-fifth of the problem and then put the sections together.

Obviously, the group with the puzzle sectioned will finish before their less fortunate subgroup. The purpose is to demonstrate the effectiveness of the principles behind the Incident Command System. Once the groups have finished, discuss the lessons learned.

Discuss the mythical town of Davistown. Explain that this is the city all students belong to for the next week. All exercises will utilize this city, department, and surrounding agency information. Make sure all students understand the basic structure of the department and standard operating procedures.

STUDENT INFO

INSTR. NOTES

Vanderville

Three Engines 3 Firefighters each

One Paramedic Unit 2 Firefighters

One Shift Battalion Chief

Total on-duty strength 12 Firefighters

Lakeside

Three Engines 3 Firefighters each

One Truck 3 Firefighters each

One Paramedic unit 2 Firefighters each

One Shift Battalion Chief

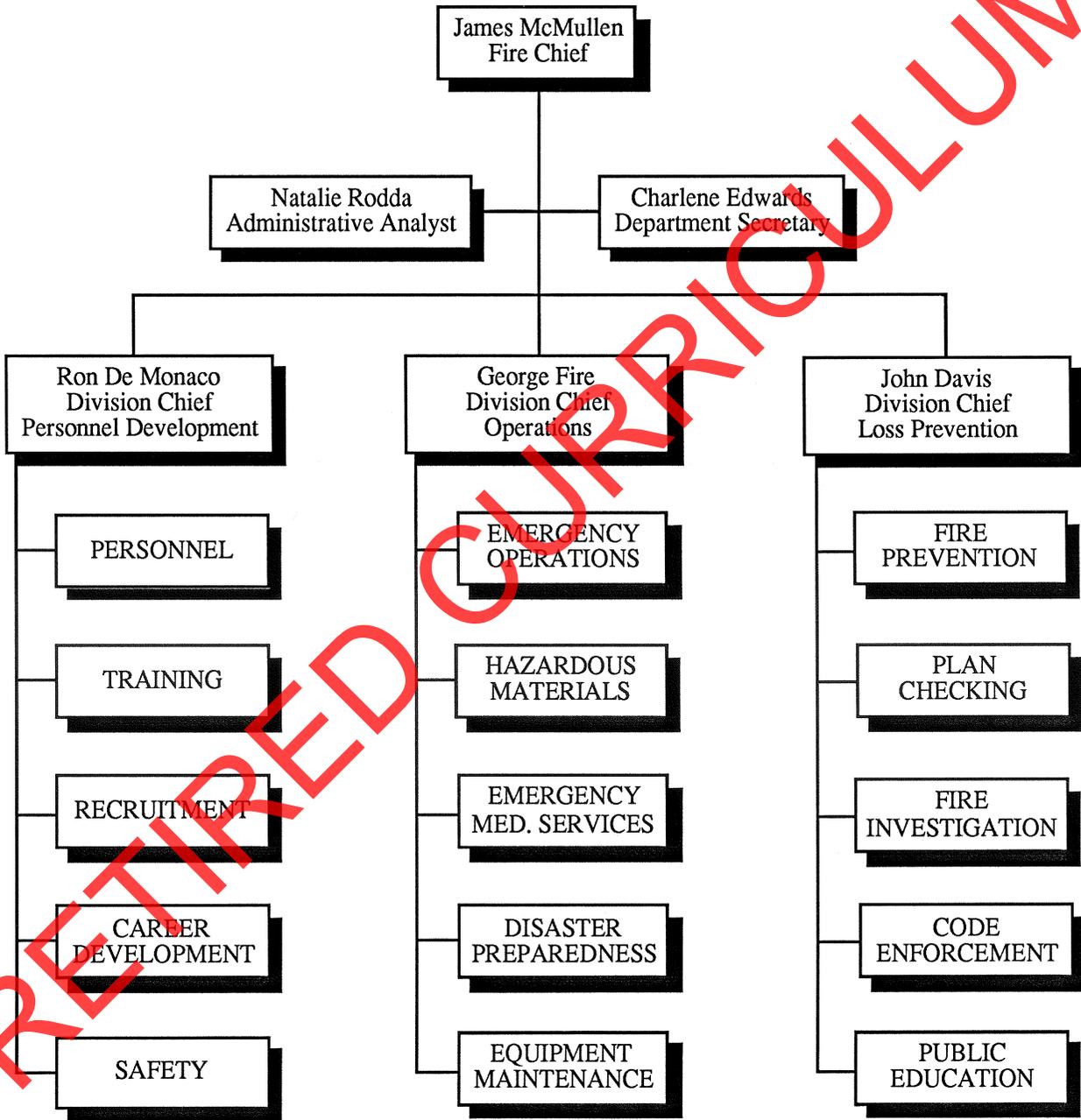
Total on-duty strength 15 Firefighters

All Departments operate on a three-platoon system and cross-train on a regular basis.

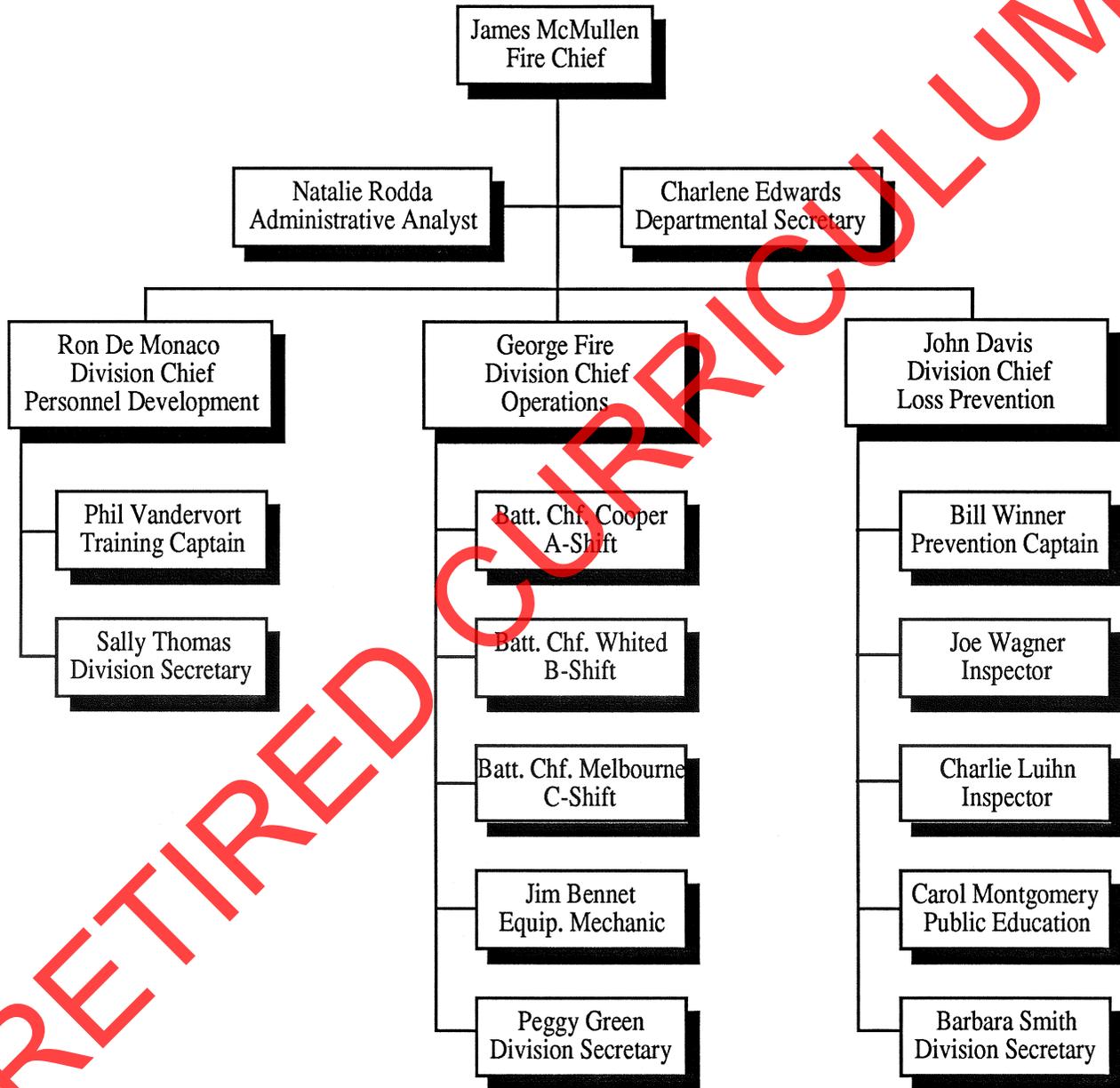
In addition to the automatic aid agreement, Davistown also has signed Mutual Aid agreements with the California Department of Forestry and Fire Protection, and the United States Forest Service. These agencies are normally at full strength during fire season which runs from May through November.

Discuss the organizational charts on the next three pages relating them to the ICS structure, explaining the relationship of staff and line functions. Discuss the similarities between everyday type organizations and those of the emergency ICS organization.

**DAVISTOWN
FIRE DEPARTMENT
ORGANIZATIONAL CHART
(DIVISIONAL FUNCTIONS)**



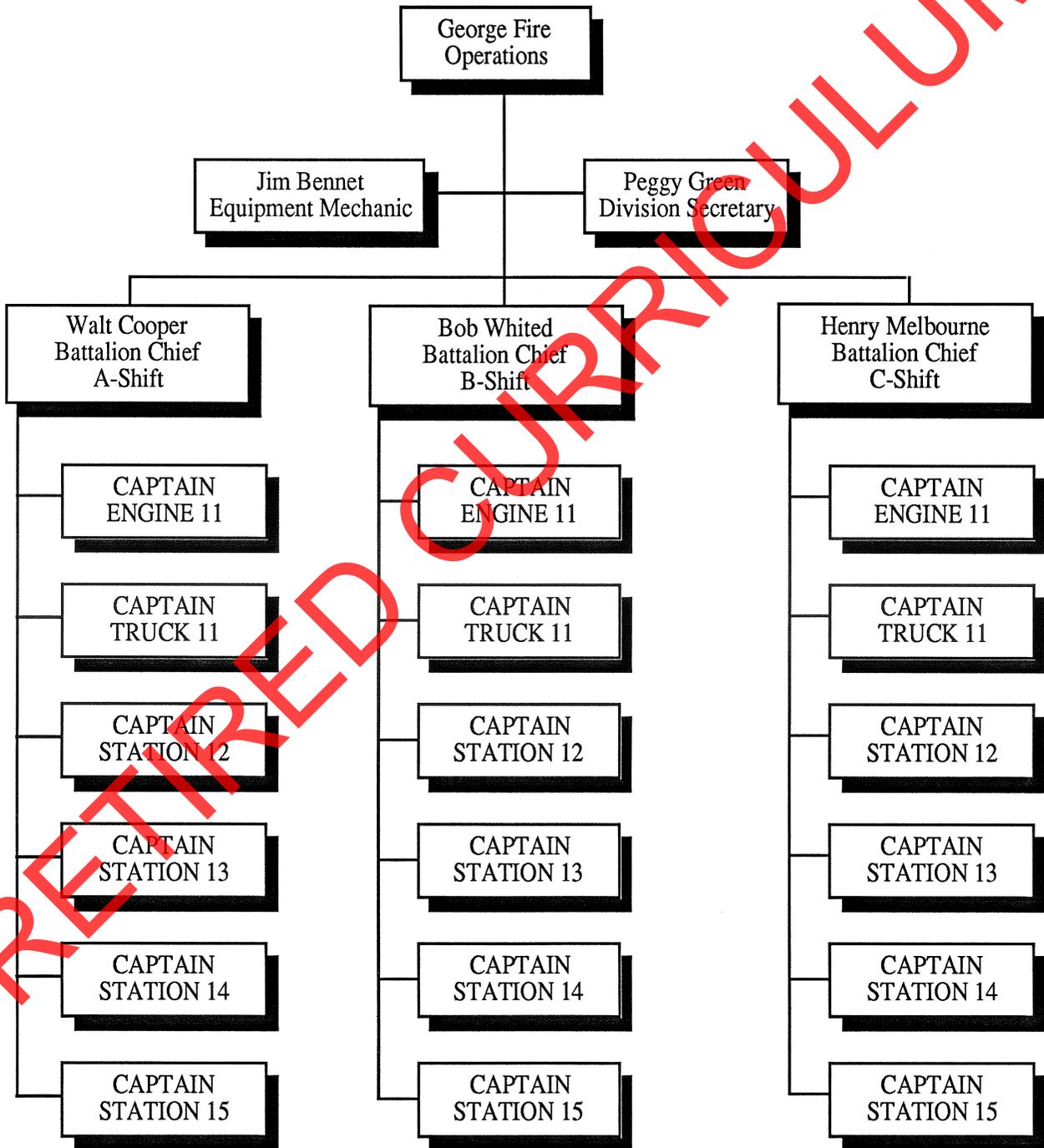
DAVISTOWN
FIRE DEPARTMENT
ORGANIZATIONAL CHART
(STAFF)



RETIRED CURRICULUM

DAVISTOWN
FIRE DEPARTMENT
ORGANIZATIONAL CHART

OPERATIONS DIVISION



STUDENT INFO

INSTR. NOTES

ARTICLE V - EMERGENCY OPERATIONS

ARTICLE V; SECTION 1 - MINIMUM MANNING

The minimum manning for any given shift shall be as follows:

Engine 11 - 4
Truck 11 - 4
Medic 11 - 2
Engine 12 - 3
Engine 13 - 3
Engine 14 - 3
Medic 14 - 2
Medic Engine 15 - 4

Total manning per shift - twenty-one plus the shift Battalion Chief.

ARTICLE V; SECTION 2 - COMMAND RESPONSIBILITIES

The following procedure is provided to establish operational areas of ultimate command responsibility applicable to major emergencies. This shall be in effect and required of all staff officers when a staff recall is initiated by the Incident Commander.

Division Chief - Operations: Responds to the incident and assumes command if appropriate.

Division Chief - Personnel Development: Responds to the incident and assumes the position of safety officer.

Division Chief - Loss Prevention: Responds to the incident and assumes the position of Plans Chief.

Captain - Loss Prevention: Responds to the incident and assumes the position of Public Information Officer (PIO).

Duty Investigator: Responds to the incident and coordinates all investigation efforts.

ARTICLE V; SECTION 3 - RESPONSE ASSIGNMENT

The following assignments shall be in effect for all structure responses:

Single Family Dwelling

1st Alarm - 2 Engines; 1 Truck; 1 Medic; Battalion Chief
2nd Alarm - 2 Engines; 1 Truck; 1 Medic; Auto Aid
Battalion Chief; Staff recall

Explain that the policies and procedures contained in this section will drive all of the simulations throughout the rest of the week.

STUDENT INFO

INSTR. NOTES

Commercial, Multi-Residential, Industrial/Manufacturing, Institutions

1st Alarm - 3 Engines; 1 Truck; 1 Medic; Battalion Chief
2nd Alarm - 3 Engines; 1 Truck; 1 Medic; Auto Aid Battalion Chief; Staff recall
3rd Alarm - 3 Engines; 1 Truck; Auto Aid Battalion Chief

Note: If third alarm resources are not sufficient to handle the incident, the IC may order additional resources in any increments necessary to meet his/her needs.

ARTICLE VI - COMMUNICATIONS

ARTICLE VI; SECTION 1 - CLEAR TEXT

The Inland Communications Facility and all parties to the Joint Powers Agreement utilize the "Clear Text" for all radio traffic.

ARTICLE VI; SECTION 2 - UNIT DESIGNATION

All units in the Inland Automatic Aid Plan and Communications Center have been numbered consecutively. The unit number indicates the station to which that unit is assigned. Each department has been designated numbers, in blocks of ten, for identification of their respective stations. The following are the approved staff, unit, and station designations:

STAFF

100 Series; Davistown Fire Department

Chief 101	Fire Chief	Trng. 130	Training Capt.
Division 102	Operations	Prev. 140	Prevention Capt.
Division 103	Pers. Devel.	Prev. 141	Inspector
Division 104	Loss Prev.	Prev. 142	Inspector
Battalion 111	Shift B/C	Prev. 143	Pub Ed Officer
Mechanic 120	Equipment Mechanic		

200 Series - Miltown Fire Department

Battalion 221 Shift Battalion Chief

300 Series - Vanderville Fire Department

Battalion 331 Shift Battalion Chief

400 Series - Lakeside Fire Protection District

Battalion 441 Shift Battalion Chief

STUDENT INFO

INSTR. NOTES

LINE

Engine 11	Davistown	Truck 11	Davistown
Engine 12	Davistown	Truck 21	Miltown
Engine 13	Davistown	Truck 41	Lakeside
Engine 14	Davistown	Medic 11	Davistown
Engine 15	Davistown	Medic 14	Davistown
Engine 21	Miltown	Medic 21	Miltown
Engine 22	Miltown	Medic 31	Vanderville
Engine 31	Vanderville	Medic 41	Lakeside
Engine 32	Vanderville		
Engine 33	Vanderville		
Engine 41	Lakeside		
Engine 42	Lakeside		
Engine 43	Lakeside		

ARTICLE VII - INCIDENT COMMAND SYSTEM

ARTICLE VII; SECTION 1 - PURPOSE

To provide standard principles upon which to build an effective command structure.

To provide standard procedures for establishing and transferring command.

To identify command responsibility and options.

ARTICLE VII; SECTION 2 - SCOPE

The following set of procedures relates to the rules and principles that regulate incident operations. These rules will universally apply to emergency situations regardless of the characteristics of the local area, size of the department, or operating approach. The on-going application of these principles will produce standard and more predictable rescue and incident control results. Conversely, non-effective application of these principles will produce consistent incident dysfunction. This set of procedures is meant to offer a basic and very simple conceptual framework for emergency incident operations and command.

The Incident Commander (IC) should begin to institute the Incident Command System (ICS) and appoint ICS positions whenever three (3) or more units are involved, or based on the following factors:

- A. When the IC forecasts situations which will eventually involve a number of companies beyond his/her capability to directly control. In such cases, early recognition and delegation is critical.

Although information contained within this section is considered to be class specific, this information is part of the class curriculum and numerous test questions are covered.

This section is supported by overhead transparencies.

Why is it necessary to regulate incident operations?

TEST QUESTION: ICS implemented whenever three or more units respond. Regardless of type. Ask students to name non-fire incidents where this would be true.

**Major Medical
Complex Haz Mat
Natural Disasters**

STUDENT INFO

INSTR. NOTES

- B. When he/she can no longer effectively cope with the number of companies currently involved in the operation.
- C. When companies are involved in complex interior operations.
- D. When companies are operating from tactical positions over which the IC has little control.
- E. When the situation is such that close company control is required: Structural conditions, hazardous materials, heavy fire load, marginal offensive situations and others.

ARTICLE VII; SECTION 3 - ASSIGNING OF POSITIONS

It will be the on-going responsibility of the IC to assign organizational positions as required for effective incident operations.

The number of companies assigned to an organizational position depends upon conditions within that assignment. Five companies represent the recommended ICS span-of-control. The IC will maintain an awareness of the number of companies operating under an ICS position and the capability of that officer to effectively operate.

ICS positions established at an incident may be designated in the following manner (not necessarily listed in order):

INCIDENT COMMAND - Incident name (street or occupancy)

STAGING AREAS - Geographical name (street or location)

BRANCHES - Numerical or Functional (Branch 1 or Medical Branch)

DIVISIONS - Alphabetical, Geographical, Numerical (Multi-story only).

GROUPS - Functionally only, operates on the entire fire-ground.

ICS position officers will use the position designation in radio communications.

ICS positions can be filled by Chief Officers, Company Officers, or by any other individuals designated by the IC.

The individual will, when assigned to an area/function, regularly evaluate, report on conditions, and advise of needed resources.

Give examples for each situation in section A-E.

TEST QUESTION: Span-of-Control is 5.

Give examples for Incident name, etc. Discuss possibility of two incidents on the same street.

TEST QUESTION: Groups are functional only and operate on the entire fireground.

TEST QUESTION: Anyone, including civilians can be assigned to ICS positions.

STUDENT INFO

INSTR. NOTES

When the ICS position assignment is given to a company officer, this officer must then utilize their personnel as aides or assign them to operate under the leadership of another qualified company member or officer.

Position officers must be readily identifiable and maintain a visible position as much as possible.

Company officers will direct communications to their division/group supervisors and should use non-radio modes whenever possible.

ARTICLE VII; SECTION 4 - ESTABLISHING COMMAND

The first department unit or officer arriving at the scene of a multiple unit response shall assume command. That person shall remain in command until relieved or the incident is terminated.

The person in charge of the first arriving unit shall transmit a brief initial radio report including:

Unit identification on the scene

Report on conditions:

Building Description - occupancy, size, arrangement, construction, and correct address.

Obvious conditions - nothing showing; smoke showing (nature, extent, and location); fire showing (nature, extent, and location).

Determination of resources needed - response status of initial responding units.

Operating Mode - Investigative, Attack, or Command.

Assignment of responding units

The radio designation "IC" will be used with a brief description of the incident location with reference to major building, street, or geographical location. In the event of two concurrent incidents on the same street, the second incident must utilize a side street for its designator. This designation will not change throughout the duration of the incident.

Utilize slides of non-fire and fire situations to help students to familiarize themselves with giving a good initial report on conditions. Build from small to large, first concentrating on strictly building description and obvious conditions.

TEST QUESTION

Once the students are comfortable with the initial report on conditions, begin to show static slides that require them to determine assignments of responding units. Show how an IC can forecast from the initial picture and make good company assignments with basic information only. Demonstrate the ability to set up the broad organization and build on it.

STUDENT INFO

INSTR. NOTES

ARTICLE VII; SECTION 5 - COMMAND OPTION

The individual in charge of the first arriving unit must decide an appropriate commitment for their unit. This will usually fall into one of the following three general modes:

Investigative - These situations generally require investigation by the first arriving unit. The personnel will utilize their portable radio to communicate conditions while in the process of investigating the conditions. Command function will remain with the person in charge of the first arriving unit.

Attack - Situations which dictate immediate action to stabilize the incident, require that the officer quickly decide how to commit the company. Where a fast interior attack is critical, the individual in charge can take advantage of the portable radio to permit their necessary involvement in the attack. The company officer should give a description of actions being taken. Upon arrival of the second unit, command will automatically transfer to that officer unless assigned a task by the initial IC. This sequence will continue until the arrival of a command officer of command can be assigned to an on-scene (unassigned) company officer outside the structure.

Command - Situations that call for principally command actions by virtue of the size, complexity, or potential, require strong, direct, overall command from the outset. In such cases, the person in charge of the first arriving units will assume a command position until relieved by a ranking officer. The person assuming command will assign the remaining crew members as needed.

ARTICLE VII; SECTION 6 - TRANSFER OF COMMAND

Arriving ranking officers assuming command will meet face-to-face with the officer being relieved and formally communicate the transfer via radio with the dispatch center.

The officer being relieved will brief the officer assuming command indicating the following:

General situation status - fire location, extent, conditions, and effectiveness of control efforts.

Deployment and assignments of operating companies.

Appraisal of needs for additional resources at that time.

Even though fire and smoke may be showing, investigative is still a possibility. Stress the need to paint a good picture.

TEST QUESTION: Thoroughly cover the attack mode and the intricacies of this concept.

TEST QUESTION

Stress the need for transfer of command to be face-to-face.

STUDENT INFO

INSTR. NOTES

ARTICLE VII; SECTION 7 - PRIMARY STAGING

Primary staging applies to normal day to day alarms which are usually handled by the initial assignment. The procedure for primary staging is as follows:

The first-in engine company will respond directly to the scene and operate to their best advantage.

The first arriving truck company will respond directly to the scene and place themselves to best utilize their equipment, generally at the front of the building.

The first chief officer will respond directly to the scene and will place themselves in an effective command position. Generally in front where two (2) sides of the incident can be viewed, at least 200 feet from the incident if applicable.

All other units (except in attack mode) will stage in their direction of travel, uncommitted, approximately one block from the scene, until assigned by the IC.

Staged units should choose a location providing a maximum of possible tactical options with regards to; (1) access, (2) direction of travel, (3) water supply, and (4) any other pertinent factors.

Staged units will, in normal response situations, report company designation on scene and their general location.

Staged units will stay off the air until orders are received from the IC; unless they have forgotten, in such cases, the units will contact and readvise them of their status.

ARTICLE VII; SECTION 8 - COMMAND STRUCTURE

It will be the responsibility of the IC to develop an organizational structure utilizing standard operating procedures as outlined by FIRESCOPE I.C.S. and N.I.I.M.S.

TEST QUESTION: Primary staging applies to first responding units only.

TEST QUESTION: Attack mode overrides Primary staging.

TEST QUESTION: In attack mode, Units continue to respond in as long as the first-in officer continues to give assignments, until a unit arrives on scene without an assignment. At that point, that unit's officer becomes the IC.

STUDENT INFO

INSTR. NOTES

THE "INCIDENT COMMANDER"

Fireground management revolves around the concept of a single "Incident Commander." Absence of command or multiple command will result in a breakdown of operations in seven critical areas.

- **Appropriate Action** - Firefighters are, by nature, aggressive individuals. Lack of central command results in independent actions being taken throughout the fireground.
- **Command & Control** - All human beings seek order. In the absence of central command, someone will take charge of at least their own, "sphere of influence." Strong, early, visible command alleviates the tendency to develop fragmented organizations throughout the fireground.
- **Coordination** - The fireground is a dynamic environment where individual actions impact the ability of others to operate effectively and safely. There must be a central "game plan" for the coordination of all fireground activities.
- **Planning** - The dynamic nature of the fireground environment requires the development of a plan that addresses all fireground operations. This plan must be developed by an individual utilizing feedback and accepted firefighting practices.
- **Organizations** - Information is critical to quality planning. That information must flow in an orderly and timely manner. Standard organizational structure allows for effective flow of information.
- **Communications** - Timely communication is crucial for the ability to address an ever changing environment. Such communication must be focused and specific. The ability of an incident commander to channel information will facilitate feedback and flexibility.
- **Safety** - The aggressive nature of firefighters sometimes overrides good common sense. The presence of a single command with a focus towards safe fireground operations will create effective and efficient fireground activities.

This entire section is driven by is driven overhead transparencies. Elaborate with examples where appropriate.

Discuss the results of "absence of command." Give examples of each critical area from your own experience or from those in the class. None of these results are positive.

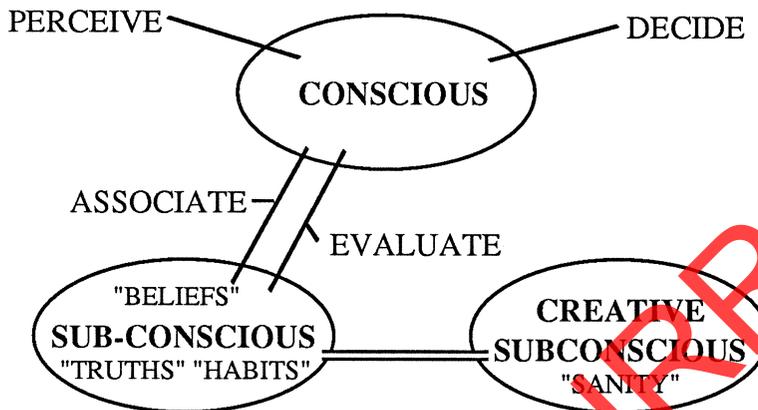
TEST QUESTION: Lack of a central command does not increase safe operations.

STUDENT INFO

INSTR. NOTES

For the "IC" to effectively manage the fireground and provide leadership in the aforementioned areas, he/she must possess a working knowledge of; (1) The decision making process, (2) Aspects of command and control, (3) Review and evaluation, (4) Communication skills, and (5) Display positive leadership traits.

MENTAL PROCESS



"FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF MANY YEARS."

PERCEIVE - The conscious mind is the link between the outside world and the individual. The individual inputs information through the five senses; sight, hearing, touch, smell, and taste. This information is acquired as facts, however, when this information is stored in the sub-conscious, it is filed as "beliefs" and "truths."

ASSOCIATION - The second function of the conscious mind is to associate perceived information with data bank stored in the sub-conscious. This association involves the searching for situations or information, in the past, that closely associates with what is being perceived at that present time.

EVALUATION - The conscious mind then evaluates the past experiences with the present situation for likes and differences.

DECISION - The conscious mind then makes a decision, not based on present situations, but how similar situations were handled in the past. In fact, sometimes decisions are even based on habit.

This section is designed to acquaint the student in the mental process that takes place in decision making. It starts out by describing the three separate sections of the brain.

Explain that the student is only aware of the conscious mind.

Ask the students to read the quotation at the bottom of the diagram at least 3 times. Once the students have read the quotation three times, ask them to go through the quotation and count the number of times the letter "F" appears in the quotation. Have the students raise their hand if they counted 3 "Fs"; 4 "Fs"; 5 "Fs"; 6 "Fs". Explain that there are six "Fs" in the phrase and for all students to raise their hands when they find all six. After a short while, have the students focus on the word "of" immediately all students should be able to find all six "Fs".

Describe each of the four functions of the conscious mind and describe how present decisions are based on past performances, not the present situation. Thus the reason for simulation and training.

STUDENT INFO

INSTR. NOTES

DECISION MAKING

- The ability to quickly make the decisions required to establish a plan of attack and initiate action. Many times the IC must make these decisions by themselves and in a decisive manner.
- The ability to distinguish between decisions based upon assumptions and those made upon facts. The IC must be able to initiate operations on assumed (and somewhat incomplete) information and then improve the quality of information and decisions as the operation develops.
- The ability to maintain an open and flexible approach to updating decisions during the on-going operations. The IC is able to utilize (and require) feedback to revise decisions, tactical positions, and approach.
- The ability to realize that one person cannot make all of the on-going incident decisions. After initiating action, the IC must shift to a management role that basically involves the delegation of responsibility for tactical decision making into I.C.S. position elements.
- The ability to develop a standard response to reported/ viewed conditions. The IC requires a particular piece of information before reacting, and will obtain certain needed facts to avoid premature commitment.
- The ability to quickly prioritize problems in their order of importance and develop solutions (responses) to those problems.
- Avoiding "dead end" decisions. The IC develops decisions that are expandable/open ended that can be built upon.
- The ability to effectively forecast conditions, evaluate potential, and develop decisions that keep the firefighting forces in control of the incident. The IC does not let the incident make decisions for them.
- The inclination as a manager to rely less on their ability to personally view the entire situation and more upon delegated information retrieval.

Again, this entire section is driven by is driven overhead transparencies. Elaborate with examples where appropriate.

This does not mean that the IC should not make decisions based on assumptions, just realize they are assumptions and back up with facts ASAP.

FLEXIBILITY is the key to building an effective fireground organization.

DELEGATION is the cornerstone of flexibility.

Do not allow outside influences to distract you from your standard operating procedures. Develop your style of decision making and utilize prioritization to maintain style commensurate with dept. SOP's.

Make decisions that allow you to be flexible.

FORECAST, FORECAST, FORECAST: This is your primary responsibility. You are the only one on the Fireground that knows the "Big Picture." Rely on delegated information.

STUDENT INFO

INSTR. NOTES

- Decisions are based upon information that is; (1) Timely, current, (2) Accurate, (3) Localized, (4) Specific, and (5) Directed.
- The longer you wait to make a decision, the less options you have available.
- The ability to effectively record and organize incident intelligence and not exceed the mental capacity to deal with information.

COMMAND AND CONTROL

- Applies and directs control efforts for the sake of achieving results not simply for the sake of control.
- Selective democracy: IC must be able to distinguish between the times you can vote and when you cannot.
- Stress Management: Ability to effectively divide the overall problem into parts and delegate authority and stress for those parts into I.C.S. positional elements.
- IC must require that everyone makes the decisions relative to task function and job assignment.
- IC cannot be destroyed or distracted by visual conditions. Turn your back on the incident if you have to.
- IC must be able to look at a tactical situation in laboratory terms, ID the elements, put them in order, and deal with them effectively.
- Regard the incident as enemy-oriented and in somewhat pessimistic terms. Must have an understanding of incident analysis.
- Select an effective command position and stay at that position. Absolutely cannot command anything while running.
- Regard command time trade-off in realistic terms. Two minutes at the beginning of the operation invested in effective command will save two hours at the end of the operation.

TEST QUESTION: If you don't make a decision, that is a decision.

When you act, know what you expect to achieve. Do not act just for the sake of acting.

TEST QUESTION

TEST QUESTION

The fire must be contained, it will destroy anything that is left unprotected.

TEST QUESTION: Do not feel compelled to act for the sake of action. Take the time to develop a Plan of Action.

STUDENT INFO

- Lone Ranger Management: IC must be able to act as a single command actor - particularly during the initial stages of command situations.
- Delegates Details: IC does not get hung up with details. They can order what and where without ordering how.
- Mid-Point Management: IC must be able to "inherit" ongoing situations after initial commitment and actions have been started.
- Incident actions should be the result of conscious decisions.
- Scarce Resource Management: IC must be able to allocate and manage during incident stages when needs exceed resources.

EVALUATION AND REVIEW

- The IC must have consistent preoccupation with effective results. They operate, manage, and evaluate in a way that is performance oriented.
- Integrate evaluation and revision into an overall management approach.
- Have a willingness to make both strategic and tactical revisions.
- Consistently utilizes progress/condition reports from subunits for revision/reinforcement.
- Be willing to accept the fact that a mistake has been made or conditions have changed and will correct the commitment. They will not live with a bad situation.
- Applies basically a pessimistic-critical approach to the review of vital incident elements. Does not believe the incident is under control.
- The expectation for effective behavior, ability, and performance should correlate with level of organization. The higher the level, the more critical the review of these areas should be.

INSTR. NOTES

TEST QUESTION: Be willing to accept situations that have occurred prior to your arrival and act accordingly.

TEST QUESTION: When you really need it, there will never be enough resources. Utilize what resources you have in an effective manner.

TEST QUESTION: Performance and results oriented.

Do not expect more from individuals than they are trained to give.

STUDENT INFO

INSTR. NOTES

- Has the ability and fortitude to straighten out a screwed up situation and the confidence to sit back and quietly monitor one that is going well.
- The IC must ask the question, "What action am I going to take if what I'm doing right now doesn't work?" They must always think ahead and operate with a back-up.
- Is not reluctant to disagree with a decision and countermand an order. Is able to do so in a constructive manner.
- Can identify both the nature and rate of "deterioration" of incident conditions and effectively react to such worsening conditions.
- Evaluation and review many times produces revisions that assume the form of redeployment. The IC must relate to a standard set of rules, principles, and priorities for such redeployment activities.
- The IC must realize the reporting limitations of an area and space. Reports generally relate only to conditions in the local area of the company making the report.
- Realistic: Does not expect anything from subordinates that has not been taught.
- The emergency incident is a poor setting to either teach or discipline. The IC must assume a positive and supportive leadership role when things go wrong and will work to correct incident dysfunctions and produce positive results.
- Evaluates information based on the capabilities of the reporter.

FIRE GROUND COMMUNICATIONS

- All communications participants must identify themselves throughout the process.
- Communications must be two-way, reflecting both functional talking and effective listening.
- Do not think you are communicating just because you are talking.

The hardest thing for an IC to do is relax and allow a good situation to run itself.

STUDENT INFO

INSTR. NOTES

- The IC must control the communications/order function.
- Reduce the number of players in the communications process.
- Think before you transmit.
- Don't keep secrets and don't produce surprises. Manage by exception.
- Companies should extend brief incremental progress reports to the IC to advise current stage of task accomplishment.
- Companies must advise IC that the task is completed or not.
- If the task cannot be completed by the company, the IC must evaluate and react.

PERSONAL CHARACTERISTICS

- ABILITY
- In order to get TRUST, RESPECT, INTEGRITY, AND CONTROL, you must be willing to give them up.
- Must have the inclination to manage and command rather than act, able to be free of "nozzle man" syndrome.
- Has the ability to control temper. There is absolutely no latitude for anger in difficult situations.
- Has a high psychological endurance - stays together a long time.
- Sanity Maintenance: The IC must regard the emergency and its outcome in clinical terms and himself in philosophical terms.
- Fire ground command is not a popularity contest. There is no place for affiliation with subordinates during emergency situations.
- Has both the ability and inclination to be a good listener.

TEST QUESTION:
Eliminate emotional distractions.

STUDENT INFO

INSTR. NOTES

- Risk Taker: Will take reasonable, well-timed risks, realizing they are in the risk mode and take appropriate precautions.
- Is regarded as a resource allocator.
- Offers a positive example.
- Realizes limitations, self, resources, and manpower.
- The IC does the "thing" in any given situation that has a constructive supportive effect, particularly when things go wrong.
- Will accept the responsibility for mistakes, learns from them, and when they make one, it's a new one.
- Organization person: Has an attraction for established procedures and an inclination to work within the system.
- Confident, consistent, uniform, calm, cool, composed, aggressive, pragmatic, straightforward, positive, durable, and disciplined.

If you are not willing to take risks then don't aspire to be in a position that requires you to do so.

STUDENT INFO

INSTR. NOTES

FIREGROUND MANAGEMENT

FIREGROUND FACTORS

Basic facts concerning fireground operations are; (a) Attack is often instinctive, (b) Operations begin before critical factors are considered, and (c) The identification of critical factors is essential. What do we mean, "CRITICAL FACTORS?" In the past, fireground management employed Lloyd Laymen's theory of "Size-up." This concept has been refined to address the identification of fireground factors that affect the ability of firefighting personnel to operate effectively and efficiently at emergency incidents. Fireground factors can be separated into eight (8) basic categories.

BUILDING

- Size - area and height
- Interior Arrangement/Access (Stairs, halls, and elevators)
- Construction Type - Ability to resist effects of fire.
- Age
- Condition - Faults/weaknesses
- Value
- Compartmentation/Separation
- Vertical/Horizontal openings, shafts, and channels
- Outside Openings - Doors and windows/degree of security.
- Utility Characteristics (hazards/controls)
- Concealed spaces/attack characteristics
- Exterior Access
- Effect the fire has had on the structure (at this point)
- Time projection of continuing fire effect on building.
- How much of the building is left to burn?

FIRE

- Size
- Extent (percent of structure involved)
- Location
- Stage (inception ——— Flashover)
- Direction of travel (most dangerous)
- Avenue of travel
- Time of involvement
- Type and amount of material involved - structure/interior etc.
- Type and amount of material left to burn
- Products of combustion (heat, smoke, flame, gas, etc.)
- What is perimeter of fire?

This entire section is driven by is driven overhead transparencies. Elaborate with examples where appropriate.

In Command 1A, we discussed Lloyd Layman and size-up. In this section, the concept of "critical factors" is introduced. It should be noted that the concept of "critical factors" and "Facts, Probabilities, and Own Situation" is the same. However, critical factors allow the IC to better understand their relationship to fire spread and overall fireground operations.

STUDENT INFO

INSTR. NOTES

OCCUPANCY

- Specific occupancy
- Type-group (business, mercantile, public, assembly, etc.)
- Value characteristics associated with occupancy.
- Fire load - size and nature
- Status (open, closed, occupied, vacant, under construction)
- Occupancy - associated characteristics/hazards
- Type of contents (based on occupancy)
- Time - as it affects occupancy use.
- Property conservation profiles/susceptibility to damage
- Moral hazard

LIFE HAZARD

- Location of occupants (in relation to the fire)
- Number of occupants
- Condition of occupants (by virtue of fire exposure)
- Incapacities of occupants
- Commitment required for search and rescue (men, equipment)
- Fire control required for search and rescue
- EMS needs
- Time estimate of fire effect on victims
- Exposure/control of spectators
- Hazards to fire personnel
- Access rescue forces have to victims
- Characteristics of escape routes (type, safety, fire conditions)

ARRANGEMENT

- Access, arrangement, and distance of external exposures
- Combustibility of exposures
- Access, arrangement, and nature of internal exposures
- Severity and urgency of exposures (fire effect)
- Value of exposures
- Most dangerous direction - avenue of spread
- Time estimate of fire effect on exposures (internal/external)
- Barriers or obstructions to operations
- Capability and limitations on apparatus movement and use
- Multiple buildings

RESOURCES

- Personnel and equipment on scene
- Personnel and equipment responding
- Personnel and equipment in reserve
- Estimate of response time for men and equipment
- Condition of men and equipment
- Capability and willingness of personnel
- Capability of commanders
- Nature of command systems available to commanders
- Number and location of hydrants
- Supplemental water sources
- Adequacy of water supply
- Built-in private fire protection (sprinkler, standpipe, alarms)

STUDENT INFO

INSTR. NOTES

ACTION

- Effect current action is having
- Things that need to be done
- Stage of operation (rescue, fire control, property conservation)
- Effect of the command - Is it established and working?
- Is there an effective organization?
- Has the Incident Commander forecasted effectively?
- Is there an effective plan?
- Tactical priority questions; Rescue, Fire Control, Property?
- What is the worst thing that can happen?
- Are operating positions effective?
- Are operating functions effective?
- Are there enough resources?
- Are the troops operating safely?
- Situation status - Do you have it or does it have you?

SPECIAL CIRCUMSTANCES

- Time of day/night
- Day of week
- Season
- Special hazards by virtue of holidays and special events
- Weather (wind, rain, heat, cold, humidity, visibility)

These factors are present at every fire. However, some are more critical than others, given a specific situation. The key to effective fireground management is the ability of the IC to; (1) Identify which are critical to that specific situation, and (2) prioritize their order of significance. Therefore, information management on the fireground becomes a major concern of the Incident Commander. Fireground factors are obtained in one of three ways; (1) visual, (2) reconnaissance, or (3) PREFIRE PLANNING.

Visual factors are those seen by the IC, from the command post. It is important to note that this is the most common and natural form of information gathering. However, the IC can fall into the trap of relying too heavily on this means of fact-finding. As the fireground grows in size, it becomes increasingly hard to gather quality information in this manner. If the IC over utilizes visual fact finding during small fire situations, the larger ones will overrun their ability to gather pertinent, timely facts. The antidote for overuse of visual fact gathering is delegation or reconnaissance.

Reconnaissance factors are just that ---- visual factors delegated to someone else's eyes. You can either send runners to obtain the information or, better yet, assign the unseen portions to an officer for continual updates. Delegation also requires the relinquishment of authority. Officers assigned portions of the fireground must be allowed to act relative to their own sphere of influence based on compliance with the overall "game plan."

TEST QUESTION

TEST QUESTION: The concept of "critical Factors" revolves around the identification of which factors are critical to a specific incident and the IC's ability to prioritize their order of importance.

TEST QUESTION: Fireground factors are obtained visually, by reconnaissance, and through PREFIRE PLANNING.

Visual - eyes of the IC.
Give examples.
How reliable?

Reconnaissance - delegated.
Give examples.
How reliable?

STUDENT INFO

Development and communication of that plan is the primary responsibility of the IC and his/her command staff.

Prefire planning and familiarity of buildings allows the IC to gather information which will aid in the identification of potential fire spread. This will facilitate the development of a fireground organization to effectively address the needs of that specific situation. In short, the prefire plan enables the identification of critical factors for that particular occupancy. Prefire plans should address the following areas:

- What factors are present.
- What does the IC need to know to be effective.
- What factors can be seen from the command post.
- How serious a problem can be caused by the unseen hazards.
- What are the bridges / barriers to fire spread and effective fireground operations.

The need for gathering facts on the fireground increases with the size and magnitude of the incident. Zeroing in on the critical factors, while keeping an open mind to continuing feedback, will determine the success of the operations.

With the best communication system in place, there will always be a need for more information. This should not delay the IC from developing a plan of attack, based on available knowledge. His/her plan must be developed with the known, coupled with the pursuit of the unknown. Beware of developing an initial plan of action and sticking to it even though conditions continue to change. It is imperative to know which factors to concentrate on and the right time to concentrate on them. The challenge is to acquire useful information as quickly as possible and utilize it flexibly.

The ability to change fixed factors is usually difficult. Fixed factors include weather, the occupancy, the type of construction, or size of the building. Therefore, concentrate on changing what you can alter, manipulate, remove, etc.. Factors are dynamic, they do not remain static; in fact, the critical ones usually get worse. **THE MAJOR ACTIVITY ON THE FIREGROUND IS THE PROCESS OF REDUCING THE SEVERITY OF CRITICAL FACTORS.**

INSTR. NOTES

Prefire planning - allows for the identification of critical factors specific to a particular building and occupancy which will allow for the development of strategies prior to an emergency.

TEST QUESTION: Fixed factors does not include common attics. Common attics are not fixed and can be reduced by trench ventilation.

TEST QUESTION: Major activity - Reduction of Critical Factors.

STUDENT INFO

INSTR. NOTES

STRATEGICAL CONSIDERATIONS

The IC's responsibility is to transform information into action. This cannot be accomplished effectively without first developing an overall strategy. The first strategic decision is whether firefighting forces will posture their efforts offensively, defensively, or a combination of both. This decision will be based on the following criteria:

- Fire extent and location - How much and what part of the building is involved?
- Fire effect - What are the structural conditions?
- Savable occupants - Is there anyone alive to save?
- Savable property - Is there any property left to save?
- Entry and tenability - Can forces get into the building and stay in?
- Ventilation profile - Can roof operations be conducted?
- Resources - Are sufficient resources available, on scene, for an offensive attack?

If the answer to the last question is NO, then an offensive attack is not an option. Offensive and defensive operations are incompatible. You cannot carry on both operations at the same time without extreme exposure to loss of life and property. Even a marginal strategy requires the IC to prioritize Offensive or Defensive.

Marginal strategies are employed when the IC arrives on scene at the fire stage just preceding flashover. There may be a chance of attacking the fire knowing reinforcements should arrive in time to support an offensive attack (offensive/defensive). Application of a holding strategy whereby the IC buys a little time preparing for the availability of reinforcements to mount an offensive attack also applies as a marginal strategy consideration (defensive/offensive). In either operation, the IC must be conscious of which initial strategy is being employed and communicate that decision to all firefighting forces.

TEST QUESTION: Unless sufficient resources are available, offensive attack is not an option.

STUDENT INFO

The key to developing sound strategical goals is the implementation of the Incident Command System. Only by delegating responsibilities and breaking down the fireground into manageable divisions can specific tactical objectives be developed from broad strategical goals.

TACTICAL CONSIDERATIONS

Tactical considerations were, at one time, interpreted by Lloyd Laymen as RECEO, (Rescue, Exposures, Confinement, Extinguishment, and Overhaul). Ventilation and salvage were thrown in where necessary. The argument would always arise: "How can firefighting forces be involved in confinement operations while individuals are still in need of rescue?" To clarify this conflict, a re-evaluation of fireground tactics resulted in the concept of three tactical priorities. The three priorities, in order, are:

Rescue - Activities required to protect occupants

Fire Control - Activities required to prevent the forward progress of the fire.

Property Conservation - Activities required to stop or reduce additional property damage.

Tactical priorities must be approached in order because the IC may only get one chance. For instance, you may only get one chance at a primary search, to launch an interior attack, or to conserve property being damaged. Keep in mind that you cannot reverse what has already taken place. You can only evaluate the sequence of events and take the appropriate action of intervention. Intervention is the sole responsibility of the IC and his/her effectiveness is measured in dollars and lives.

Rescue is completed when the primary search is accomplished and an "All Clear" is received. Fire control is obtained when the fire ceases to extend to uninvolved areas and an "under control" is transmitted. Property conservation is reached at the point when property damage and, "loss is stopped."

You cannot proceed to the next priority until you have accomplished the current one. This requires a great deal of discipline, for there may be cases that require activities in two separate areas in order to

INSTR. NOTES

As in the refinement of the concept of size-up, Layman's RECEO has also been revised to breakdown into three distinct categories. Rescue remains the same; Exposures, Confinement and Extinguishment all fall into the category of Fire Control; and Salvage & Overhaul is categorized as Property Conservation. Ventilation is considered to be a tactic that can be applied to any of the three. This revision makes it easier for the IC to understand fireground management and the relationship of the three tactical priorities.

TEST QUESTION: Three priorities, in the proper order.

TEST QUESTION: The "All Clear" marks the completion of the Rescue priority.

STUDENT INFO

INSTR. NOTES

accomplish the initial priority. This means that activities normally related to fire control may be needed to effect rescue priorities. However, the IC must realize that when these activities are employed as backup to rescue, the primary function is still RESCUE.

The priorities always fall into the same order: rescue first, then fire control, and property conservation. You must be prepared to write off all property necessary to obtain fire control, and you must be prepared to let the fire grow in order to save lives. These decisions are not easy, but that's what we get paid the big bucks for.

There are times when we are the ones to promote property damage in the form of ventilation, forcible entry, breaking windows, etc. We do this with the goal of either controlling the fire or effecting a rescue. In this case, the added damage is acceptable in that a higher priority function is being addressed. This is considered an acceptable trade-off, property damage as opposed to fire damage or loss of life.

Rescue

In order to organize an effective rescue operation, you must answer the basic question, "Where are the victims in relation to the fire?" Obviously, the closer the victims are to the fire, the greater the need for immediate intervention. Location of victims can be divided into three categories: Those already outside the building; those trying to get outside; and those still inside the building.

With the advent of early warning devices, more victims are falling into the category of being outside the building prior to the arrival of the fire department. Occupants still exiting the building through conventional means also falls into this category, obviously a bonus to the IC. However, those still exiting the building will hamper the entrance of firefighting forces, a consideration very important to the IC and his/her development of tactical priorities.

Victims trying to get out of the building are categorized by those who are experiencing difficulties in their attempts to save themselves. This does not include those leaving by conventional means such as emergency exits, etc.. This refers to those victims trapped on window ledges, clinging to sides of the building or jumping out of windows. They are usually in some state of panic, depending on the relative perception of their fate. This category of victim generally shows a high willingness to be rescued.

TEST QUESTION: Three categories of victims.

TEST QUESTION: Occupants still exiting the building through conventional means fall into what category?

TEST QUESTION: Victims trying to get out of the building are categorized by those who are experiencing difficulties in their attempts to save themselves.

STUDENT INFO

INSTR. NOTES

The key to dealing with this category is not to develop tunnel vision and hastily commit all your firefighting forces to those victims who are readily visible. However, every effort should be made to aid in their evacuation. Also, by identifying their location, the IC will be able to place firefighting lines between the victims and the fire.

Some victims may be unaware, trapped, overcome, or otherwise unable to save themselves. They are considered to be still inside the building. This group is basically unknown to the IC and he/she must estimate their number, location, and condition, until rescue crews enter the building to perform the primary search. The primary search has become standard operating procedure in most firefighting activities. All initial fireground operations must be structured around the primary search until an "ALL CLEAR" is received. Primary search entails the quick search of all affected areas and have verified the removal or safety of all occupants. UNTIL THE PRIMARY SEARCH IS COMPLETED AND AN "ALL CLEAR" IS RECEIVED, THE IC CANNOT PROCEED TO THE NEXT TACTICAL PRIORITY OF FIRE CONTROL.

There are situations where the victims aren't leaping out of the windows or hanging on to windowsills. This does not allow the IC to ignore the presence of rescue factors, quite the contrary. The last thing an IC wants is a nasty surprise during overhaul operations. You must consider rescue factors in every situation and extend a primary search to establish an "ALL CLEAR" status on the fireground

An "ALL CLEAR" signifies the completion of the primary search, however, the system is not foolproof. It is not the issuance of an affidavit that everyone is out. The possibility of overlooking victims always exists. Everyone does their job, but victims sometimes hide from firefighters as well as from the fire. The major factor affecting rescue is the stage of the fire. The basic approach is as follows:

NOTHING SHOWING -- Clearly poses no life hazard, however, an "ALL CLEAR" still needs to be transmitted.

SMOKE SHOWING -- Fire control efforts are extended simultaneously with rescue operations.

FULLY INVOLVED -- Immediate entry and primary search activities become impossible and survival of occupants is improbable. Once fire control is achieved, a secondary search is implemented for victims.

TEST QUESTION: All initial fireground operations are structured around the primary search until and "All Clear" is received.

TEST QUESTION: The IC cannot continue to Fire Control until an "All Clear" is received.

Support with slides to demonstrate different situations and possible plan of action for each.

STUDENT INFO

INSTR. NOTES

At the time of the emergency, relying on occupants, is somewhat dysfunctional because their sanity and accuracy is questionable. However, you must still respond to their panicked cries of, "My baby's in there," etc. Therefore, you must extend and complete a primary search whenever entry is possible.

It is the responsibility of the IC to verify victim status by making a secondary search after the initial fire control operations are completed. This search should be conducted by crews not involved in the primary search for obvious reasons.

Once the victims have been located, the IC is faced with another dilemma, should we; (1) Remove the victims, (2) Remove the fire from the victims, or (3) Engage in some combination of the two. If the fire is manageable and there are a moderate number of victims, a quick implementation of a primary search coupled with a strong attack on the fire is the optimum choice. However, when you encounter a fire with a large number of potential victims and decide to evacuate the building, you must realistically evaluate the manpower required for such an operation.

The alternative to evacuation is relocation. Remove victims in extreme danger and allow those occupants who are safer in their rooms to remain. This operation requires a great deal of coordination between rescue crews and fire attack crews so all members are kept current on the changing fire conditions. Hose line placement should be designed to augment the rescuer's efforts. Primary exits should be protected because the more deviation from the norm, the longer and more confusing the operation. As the number of victims increase, so must the amount of personnel. **LIFE SAFETY IS THE MOST URGENT REASON FOR CALLING ADDITIONAL ALARMS.**

RESCUE OPERATIONS ARE THE MOST DIFFICULT AND DESPERATE OF ALL FIREGROUND ACTIVITIES.

Fire Control

Standard operating procedure calls for the extension of an aggressive, well-placed, and adequate attack wherever possible. In addition, support that attack with whatever resources and actions are required to stop the extension and promote the control of fire. The critical command decision for any fireground operation still remains the overall strategy of offense or defense.

Ask students to give actual examples of different alternatives to total evacuation.

TEST QUESTION: Life safety is the most urgent reason for calling additional alarms.

TEST QUESTION: rescue - most difficult and desperate of all fire-ground activities.

STUDENT INFO

INSTR. NOTES

The basic offensive plan is as follows:

TAKE COMMAND

FIRST LINE - Fast aggressive interior attack

DO PRIMARY SEARCH

PROVIDE SUPPORT ACTIVITIES - Forcible entry, ventilation, access

SECOND LINE - Backup first line and/or cover rear

PROVIDE CONTINUOUS WATER SUPPLY

QUICKLY EVALUATE SUCCESS AND REACT TO IT

BASIC OPERATING POSITION - Interior from the unburned side

The basic defensive plan is as follows:

TAKE COMMAND

EVALUATE FIRE SPREAD - Write off losses

IDENTIFY KEY TACTICAL POSITIONS - Save unburned property

PRIORITIZE FIRE STREAMS

PROVIDE ADEQUATE SUPPLY OF PUMPED WATER

MAKE RAPID DETERMINATION OF ADDITIONAL RESOURCES

BASIC OPERATING POSITION - Outside, protecting exposures

The key with either strategy is to consider the most dangerous direction and avenue of fire spread and establish basic attack positions to cover them. Most dangerous direction refers to the location of savable occupants and property in relation to the location of the fire. Most dangerous avenue refers to an evaluation of all the possible avenues of fire travel.

Show slides depicting situations dictating offensive, defensive, and marginal overall strategies and expand on the initial report of conditions discussed in Section 1.

STUDENT INFO

Sometimes the most effective tactical analysis involves an evaluation of what is not burning, rather than what is. The unburned portion tells where the fire is going and should establish the framework for fire control requirements. Attack from the unburned side is the most fundamental and important offensive fireground rule.

Initial fire attack efforts must be directed toward supporting the primary search. **THE FIRST ATTACK MUST GO BETWEEN THE VICTIMS AND THE FIRE.** During the initial attack phase, there is a real temptation to go for the fire. However, disciplined firefighters know the importance of the "ALL CLEAR" before shifting into full fire control operations. The fire location and extent must be determined before initiating fire control operations. This may seem quite basic, however, there will be times when the location is not evident. This situation should be a red flag for the IC in that control of fire search operations requires maximum discipline, communication, and coordination. Division of the fireground becomes a necessity and management of the crews essential for safe and effective activities. The effective management of the following variables is crucial for successful fire control efforts.

Location/position of attack - How are you going to gain access for offensive attack or apply fire streams for defensive attack?

Size of attack - Number of hose lines, size and manpower needed to operate.

Support functions - Each individual attack requires its own set of support activities, forcible entry, ventilation, etc.

Time of attack - Timing is crucial to safe and successful operations -- ventilation vs. attack, forcible entry vs. charged hose line, etc. The bigger the attack, the longer it takes to mount it.

Our natural inclination is to focus on fire. Lacking direction, fire companies will lay hose and apply water utilizing the fastest, shortest, and most direct route. This is called the "candle-moth" syndrome. Active offensive fires will routinely push products of combustion out of the building, which is a real distraction for fire-fighting crews. However, they should resist the temptation to apply water and push the fire back through these openings. Be particularly careful when employing an elevated stream, the tendency is to put

INSTR. NOTES

TEST QUESTION: First attack must go between the victims and the fire.

TEST QUESTION: Timing is crucial to safe and successful operations.

TEST QUESTION: "Candle-moth" syndrome.

STUDENT INFO

a lid on the fire when it has vented itself and crews are mounting an interior attack. Approach fire spread with pessimism and develop decision points as to cutoff of fire spread and operations. Allow for lead time, develop timetables for abandonment of interior attack, and make predictions as to fire spread and buildup.

When there is a need to change from an offensive to defensive strategy, this information should be broadcast throughout the entire fireground. Announce the change as emergency traffic, and once you have made the decision, **DO NOT** allow interior crews to talk you out of it.

The IC must not waste time, energy and resources on lost property, particularly if there is undamaged property left to burn. Time is an extremely important factor in fire attack. The bigger the attack, the longer it takes to launch it; the deeper the attack into the interior, the longer it takes to conclude it. In reality, during a lot of big, defensive jobs with total or major involvement, water is pumped into the fire building for public relations purposes.

Property Conservation

Property conservation consist of; (1) Stopping additional loss, (2) Being certain the fire is completely out, (3) Determining fire cause and origin, and (4) Returning the occupancy to use, where possible. To achieve these objectives four major steps should be taken; (1) Evaluate damage to the overall fire area and the salvage value of surviving property, (2) Decide what property conservation operations will be required, (3) Commit the required personnel, equipment, and command, and (4) Continue to coordinate and manage property conservation efforts until loss is stopped.

Property damage can be broken into two types, primary and secondary. Primary damage is caused by the fire and products of combustion (flame, heat, and smoke). Secondary damage is caused by rescue and fire control operations. It is the damage that we, the firefighters, inflict upon the building and its contents. **ALL FIREGROUND MEMBERS ARE EXPECTED TO PERFORM IN A MANNER THAT CONTINUALLY REDUCES LOSS DURING FIRE OPERATIONS.**

INSTR. NOTES

TEST QUESTION:
When the IC decides to change from an offensive attack to a defensive attack:

Never allow interior crews to talk you out of it.

Announce the change as emergency traffic.

TEST QUESTION: Secondary loss is caused by rescue and fire control operations.

STUDENT INFO

INSTR. NOTES

FIRE STREAM MANAGEMENT

Fire stream management is the application of good common sense. However, routine daily operations tend to promote complacency. If an IC is accustomed to attacking with small handlines, chances are small handlines will be utilized regardless of fire severity. The initial on scene IC must evaluate each incident individually, based on critical factors specific to that incident. Fire stream management should be a conscious decision based on the following principles:

- Size of initial hose lines should be commensurate with incident size and magnitude.
- Life hazards - Place the first line between fire and victims, then their escape routes.
- No life hazards - Place the first line between the fire and the most severe exposure.
- Place second line to backup first line or protect secondary egress.
- Place additional lines to support attack positions.
- Offensive attack - Lines inside
- Defensive attack - Lines outside

Fire stream timing is the responsibility of the IC. Sufficient coordination must be developed between attack and support crews to maximize the effectiveness of all fireground operations. Only the IC has the ability to control the game board. He/she determines who gets what hydrants, where support operations are needed, when to write off losses, etc. It's a tough job but somebody has to do it.

When dealing with master streams there is only one rule; DO NOT COMBINE EXTERIOR AND INTERIOR ATTACKS. It is permissible to allow for the protection of fire walls and exposures but as a general rule, "When the pipe goes up, the people come out."

APPARATUS PLACEMENT

As in hose stream management, apparatus placement follows, "good common sense" approaches. However, unless the IC takes strong control at the outset, independent action may result in lost

TEST QUESTION: Fire stream management principles.

TEST QUESTION: Never combine exterior and interior attacks.

STUDENT INFO

INSTR. NOTES

opportunities. You may only get one chance at the prime ladder positions, hot hydrant, or valuable access route. As stated earlier, the IC is the controller of the game board. He/she must make conscious decisions regarding all aspects of fireground management.

Primary staging affords the IC with the opportunity to develop their game plan without premature action on the part of initial responding units. However, the IC must exercise command and control of these units or lose that built-in advantage. When placing apparatus, the IC should consider the following, accepted principles:

- Good truck locations have priority over engine spots.
- Place every piece of apparatus to take maximum advantage of its capabilities.
- Utilize only the companies that are required.
- Increase flexibility by maintaining a reserve of uncommitted companies in staging.
- Access must always be a primary consideration.

ACTION PLAN WORKSHEET

To facilitate an understanding of fireground operations, an action plan worksheet will be utilized in the performance of the static simulation process. The action plan worksheet has been developed to summarize and put into perspective overall fireground management.

ACTION PLAN WORKSHEET

I. Critical Factors

- A.
- B.
- C.
- D.
- E.

TEST QUESTION: Apparatus placement principles.

Review the action plan worksheet and discuss the categories as they relate to the student info.

Homework assignment: Have student complete the first two skull sessions in section 7; The Goodwill store and Mercury Savings. Be prepared to discuss your results with the rest of your group. Also, be prepared to work as a group Tuesday morning to develop an Action Plan for the Humbolt Hotel.

STUDENT INFO

INSTR. NOTES

II. Strategical Considerations

A. Overall Strategy

1. Offensive
2. Defensive
3. Marginal

B. Strategical Goals

1. Goal #1
 - a. tactical objective
 - b. tactical objective
 - c. tactical objective
2. Goal #2
 - a. tactical objective
 - b. tactical objective
 - c. tactical objective
3. Goal #3
 - a. tactical objective
 - b. tactical objective
 - c. tactical objective

III. ICS Positions

IV. Tactical Considerations

A. Tactical Objective 1-a

1. Task
2. Task
3. Task

B. Tactical Objective 1-b

1. Task
2. Task
3. Task

V. Resources

STUDENT INFO

INSTR. NOTES

SPECIAL CONSIDERATIONS IN LARGE OCCUPANCY FIRES

FLAME SPREAD

In many situations, the rate at which a material burns is much more important than the total amount of fuel available. Rate of burning is determined by the availability of fuel and air, and the temperature of fuel and air. Prediction of burning rate must include an estimation of material ignitability, fuel load, and key environmental factors.

Economic, social, or aesthetic considerations frequently cause changes in building practices that have an impact on fire growth. An IC must be prepared to apply the basic principles of fire growth analysis to new situations, rather than risk making outdated and misleading assumptions about buildings.

One example of a trend that has dramatically affected fire growth in modern buildings is open planning. It is a means of providing more flexible interior space by removing walls as fixed elements and replacing them with easily removable partitions. In a building so arranged, there are likely to be few inherent barriers to fire spread, and those that exist will primarily make the work of getting to the fire more difficult. Since partitions are seen as furniture, not structural components of the building, they will probably not be code regulated. They may be highly flammable, and generate a great deal of smoke and toxic products. Also, the tendency to base electrical components in these partitions poses both an ignition and electrocution hazard since panels that contain metallic components may become electrified.

SMOKE MOVEMENT

Smoke is defined by the American Society for Testing Materials as "the airborne solid and liquid particulates and gases evolved when a material undergoes pyrolysis of combustion." Smoke can spread further and often faster than flames, by rules different from those governing fire growth.

With the new type of construction, modifications to existing buildings are a simple process. How does that affect the IC ability to manage fireground activities?

TEST QUESTION: Open planning is an example of this trend towards frequent remodeling.

Stress the importance of barriers not having to follow codes because they are considered to be furniture.

TEST QUESTION: As the oxygen level decreases, the toxicity of the smoke increases.

TEST QUESTION: Because of its ability to pressurize and seep through cracks, smoke spread does not follow the same rules as fire spread.

STUDENT INFO

INSTR. NOTES

Its consequences, both in life loss and property damage, are often greater than those of fire; in fact, it is the cause of death in at least 80% of fire-related deaths. It contributes to panic and obscures vision, impeding both occupant escape and firefighting operations. In addition, it carries toxic products that can harm or kill when either concentration or exposure time exceeds allowable levels. Because its potential impact is so great, the problem of smoke movement is worth careful separate analysis in pre-fire planning. The following factors relating to smoke movement in large structures should be addressed in every pre-fire planning process.

Buoyancy

Buoyancy refers to the tendency of heated smoke to rise due to its reduced density. It causes smoke to rise to the floor above the fire. Its effect usually decreases with distance from the fire, as the temperature drops. This may cause smoke to "stall" if no other force is introduced to drive it further.

Expansion

As smoke heats, it expands in proportion to its absolute temperature and seeks to occupy a greater volume. Where this tendency to expand is restricted; however, pressure will increase, driving the smoke to make use of every available pinhole. If oxygen is suddenly introduced into such a sealed environment, an explosion is possible. Like buoyancy, expansion is mainly important in initial movement of smoke from fire. As distance increases, other factors become more significant and building air currents will take over.

HVAC

The heating, venting, air conditioning system in a building may contribute greatly to smoke movement, either as an assistant to or an enemy of life safety. Central HVAC may distribute smoke far from the fire area, or aid combustion by a constant supply of air. The system pierces fire-resistive barriers and breaks compartmentation, and is often repaired by means of "poke throughs" that are never closed. While systems differ and it is important to learn the operating principles

TEST QUESTION:
Smoke is the cause of death in at least 80% of fire-related deaths.

STUDENT INFO

INSTR. NOTES

of the particular HVAC installed in each major building, three components will be common to all:

- **Processing System** - In the processing system, returned air is mixed with outside air and processed by flowing through filters, heating/cooling equipment, and possibly humidification apparatus. It is usually installed on the same floor as mechanical equipment rooms.
- **Supply System** - In the supply system, processed air is distributed to all floors via the supply air shaft. Air diffusers in the ceiling or grills in the walls then distribute the air from the supply ducts. Fire dampers may be located in the ducts, usually where the ducts meet the supply shaft and they pass through fire-rated separations.
- **Return System** - In the return system, air flows from occupied spaces through return collectors into the plenum, then to the return shaft. It may include fire dampers where the air enters the return shaft and flows through fire-rated partitions.

When researching a particular HVAC system to determine how it will affect smoke distribution, the following checklist of questions may be helpful:

- Determine the location of the mechanical equipment room floors and zones they serve.
- Are there any special HVAC systems in the building, (Theaters, public assembly spaces, restaurants, computer rooms, stores, etc.)?
- Is there a central control of the HVAC system? What is the location?
- Determine the number of return air shafts and their location.
- Are the return air shafts common to more than one HVAC zone?

STUDENT INFO

- Are the supply and return dampers on each floor controllable from a central location?
- Is there a periphery air supply system? How is it zoned?
- Is the system protected from freeze-up when outside air below freezing temperature is drawn into the system?

On the basis of this information, you will be able to make an appropriate decision concerning how best to use the HVAC in a fire situation. If you shut down the system, you will restrict the supply of air to the fire floor, but you will also restrict the supply to other building sections where occupants may need new air. Also, smoke may still be able to move through the ducts under the influence of other building forces. You may wish to supply fresh air to every floor but the fire floor, placing the system on these floors on 100% supply with no return or exhaust. It is important to be sure that the air is in fact from the outside, not building air that may contain toxic products. System capabilities vary.

Finally, you may wish to consider placing the fire floor/occupancy on 100% exhaust mode, no supply, if the system has this capacity; most older systems do not. This would create a "pressure sandwich"—negative in the area of the fire, positive in all surrounding areas—that would aid in restricting smoke movement. You would first need to consider where the exhaust fans are located in relation to the fire. Would they pull the fire across a wide open space, increasing damage, or toward operating forces? Also, if temperatures are high enough to shut down the fire dampers, smoke spread may increase.

Smoke Management Systems

Building designs that have given careful thought to smoke management may elect passive smoke management or the active option of smoke control. A passive system includes any use of the physical arrangement of building space to facilitate smoke movement, whether through barriers, curtains, gravity venting, smoke-proof towers, smoke shafts, or smoke reservoirs. Active smoke control refers specifically to the use of air flows and pressure differences generated by

INSTR. NOTES

TEST QUESTION:
Pressure sandwich is the utilization of positive and negative air pressure by manipulation of the buildings HVAC system.

There are many HVAC systems that work on this principle. They are not only found in high-rise buildings, but large shopping malls utilize the positive negative advantages. Especially, when most of the stores inside the mall do not use solid type barriers for closing off their storefronts.

STUDENT INFO

INSTR. NOTES

mechanical fans to restrict smoke movement across given barriers. System capabilities differ as to the number of doors that may be opened without impairing effectiveness, so it is important to know the design constraints of a given system. They may be effectively used to facilitate occupant escape and firefighter access, as well as restricting spread to new areas.

NON-COMBUSTIBLE BUILDINGS

When used to designate a type of building construction, the term "noncombustible" becomes an illusion of safety that conceals the inherent danger to fire fighters that is associated with this type of construction.

Two things must be kept in mind when responding to a fire in a noncombustible building:

- The building itself will not burn, but it is likely to collapse during an interior fire.
- Although the structural components of the building will not burn, the contents will.

When a working fire occurs in a noncombustible building, you must expect sections, or all of the building, to collapse. When faced with this danger, fire fighters must get out of the building before collapse becomes imminent.

Construction

Common to noncombustible buildings is an unprotected steel frame. The roof may be supported by arched steel trusses or flat steel trusses, more commonly known as bar-joists. In some noncombustible buildings, the roof rests on steel I-beam rafters and steel purlins, the I-beam connecting the rafters to provide attachment for the roof deck.

The walls can be made of flat steel sheets-often corrugated steel in older buildings-corrugated asbestos cement board, or concrete blocks. Except when the wall is made of cement blocks, the columns are always steel. Concrete block walls may or may not have steel columns.

Utilize video tape to support the problems inherent in non-combustible buildings. The "End of the Line" video from Phoenix Fire Department is an excellent source.

If time permits, video tape concerning light-weight roof construction will also be beneficial.

STUDENT INFO

INSTR. NOTES

Obviously, the all-steel walls or those with asbestos cement board on steel framing will collapse independently of roof collapse when fire heats the steel significantly. Roof failure alone also may cause walls to collapse. When the building has unprotected steel trusses, either arched or bar-joists, expansion or twisting of the trusses can cause collapse of concrete block walls. It is important to remember that a great difference in temperature between the fire-heated interior side of a concrete block wall and the outside of the wall can cause the wall to crack, bulge, and fail.

Initial Attack

With these facts in mind, the first-in company officer at a serious fire in a noncombustible building must make some critical decisions during their initial size-up. They have to estimate the effect of the fire on the stability of the building in terms of heat being produced by the fire and the length of time it has been burning at high intensity. In some cases, they may estimate that the building will maintain its integrity for as long as 10 or 15 minutes. In other cases, the indications may be that the building is within five minutes or less of partial or total collapse.

A safe rule is that a fully involved noncombustible building is about to collapse. Keep in mind that you did not build this death trap and your first responsibility in such a situation is to protect the lives of your fire fighters. They cannot be replaced, but the building can.

The first-in officer also must realize that a working fire in a noncombustible building must be extinguished as rapidly as possible. We are not discussing the fire that can be quickly darkened down with a 1-1/2 inch line. We are considering a fire of sufficient volume to provide a challenge.

The officer must react to that challenge by putting into operation a stream that is large enough to reduce the volume of fire. While a 2-1/2 inch line, or 1-3/4 inch line, with an automatic nozzle may be adequate for some fires, the use of master stream equipment may be the first best move to take. Water damage is of no consideration when the immediate possibility is collapse of the building.

Ask students to relate experiences they have had concerning these type of structures and signs of building collapse.

STUDENT INFO

INSTR. NOTES

Looking Ahead

Noncombustible buildings are becoming more popular for industrial, warehouse and even office occupancies. As in any other building seriously involved in fire, roof ventilation is a prime need in a noncombustible building. The problem is that the time between flashover and structural collapse is so short in noncombustible buildings that the roof can already be unsafe by the time the first companies arrive.

Although the roof cannot be vented by putting men on the roof, it can be vented if your building code requires plastic skylights or automatic vents on the roof. Fire heat will quickly melt out the plastic in the skylights or cause the automatic vents to open.

Curtain boards or draft curtains act to confine the early hot gases within a limited area under the roof. By preventing mushrooming of the hot gases, heat buildup is concentrated within the curtain board area with the result that automatic devices operate earlier. Earlier activation of these devices slows fire spread and aids extinguishment.

BALLOON-FRAME CONSTRUCTION

*Excerpted from Fire Engineering/ September 1988
By George E. Lucia*

Americans are infatuated with older homes, especially the Victorian. Many people are renovating and restoring their Victorian to its original beauty, and the houses are beautiful. Graced with gingerbread trim, ornate windows, and doors, towers and bays.

The house takes its name from Great Britain's Queen Victoria, whose reign coincided with its popularity. It was during this time, circa 1845, that a new building method called "balloon framing" was developed.

In balloon-frame construction, standard two-by-four studs were assembled into frames using wire-cut nails. The studs were continuous from foundation to roof, with floors hung on the studs. This easy-to-learn, fast method of house construction replaced the complicated joinery of heavy timber framing of notched and pegged joints. Balloon framing freed houses from traditional, box-like shapes and the rigid rules of classic forms.

Ask students to relate experiences involving Victorian structures or fires in buildings containing balloon frame construction

STUDENT INFO

INSTR. NOTES

It enabled builders to construct asymmetrical shapes, projections, overhangs, and other complex forms that are typically Victorian.

As beautiful as the Victorian homes are, their balloon-frame construction pose unique problems to firefighting strategy, tactics, and procedures.

Fire Extension

The primary cause of fireground difficulties during operations on residences of balloon-frame construction is rapid and unnoticed fire spread in the void spaces. Interior wall construction used in residential Victorians and other dwellings of this time period was wood lath with plaster covering. Although plaster on lath provides good fire rating if maintained in good condition, investigations of fires in residential Victorian-style houses show that wood lath enhances the upward spread of the fire. This horizontal kindling provides fuel for spreading heat and fire in nonfirestopped walls and ceilings.

Furthermore, paper-backed insulation in these walls contributes to the fire spread and intensity. Exterior siding was installed over furring strips with paper weather barrier. This furring, along with dried interior lath, becomes a ready fuel load for any fire.

A fire that starts in or near a wall must be cut off. Always plan for the worst conditions by advancing a hoseline to each floor above the fire. Start ventilation immediately because conditions will deteriorate rapidly. Check and open any walls above and in the path of fire spread, paying close attention to areas directly above the fire origin. Keep in constant contact with the crew assigned to the attic; if unchecked, the fire is sure to show up there. A simple kitchen fire or electrical short will result in fire extension if not checked immediately.

Fire fighters can become spoiled by handling many incidents in dwellings with compartmentalized construction. In many cases, today's platform construction and stricter uniform building codes help to inhibit vertical spread. This isn't so, of course, in the Victorians. Fire spread can be rapid in these old homes employing balloon-frame construction, and the elements which give the Victorian its charming character. That being, very inaccessible towers and bays, dormers, hidden attic spaces, to name a few.

TEST QUESTION:
Rapid fire spread to void spaces is the primary concern in fires involving balloon frame construction.

STUDENT INFO

INSTR. NOTES

Original or Modernized

An important consideration in fireground strategy when dealing with Victorian construction is whether or not alterations have been made and, if so, how they will affect fire spread. Original Victorians were built with 9 to 12 foot ceilings. Homeowners may have added a drop ceiling to conserve heat or hide broken plaster. Duct work, electrical wiring, and plumbing may also have been run in this void space. Construction done without permits and proper inspections may increase the chance of fire spread through walls or void spaces.

Original Victorians contain a danger area below the second floor bathroom. While rushing to open up this area to contain fire spread around pipe chases and wall bays, beware of heavy concrete floor construction. Floor beams have been shaved out and scrap lumber nailed into place to allow the mud floor to be poured in place. Use extreme caution when operating in or below these bathroom floors when they have been exposed to fire. Local collapse may occur suddenly.

He/She Who Hesitates is Lost

Victorian residential dwellings present a special challenge to today's fire fighting forces. A safe, aggressive attack, coupled with a consistent standard operating procedure, will save these special Victorians.

- Stage additional companies or mutual aid to save time when conditions deteriorate. It's not uncommon to have more than one saw in operation while opening up.
- Recognize and understand the many different types of residential building design and construction. Fire officers must immediately take the age and type of construction into consideration while making a size-up.
- Homeowners may alter their home without permits or proper knowledge of construction. These alterations may be hiding something that you should know. Treat older residential structure fires as balloon-frame construction until you can prove otherwise.

STUDENT INFO

INSTR. NOTES

- Determine any possibility of the fire's transmittal to walls, ceilings, or voids.
- Open up and ventilate right away before conditions hide spreading void fires.
- Have handlines in ready positions along the suspected path of the fire extension.
- Provide a sufficient number of ground ladders to afford escape in the event that conditions worsen more quickly than you anticipated.
- Balloon and braced framing provide the quickest spread of fires in void spaces, but don't forget that any construction with wood lath contributes to rapid fire extension.

Meet the challenge and preserve the "Victorian Revival." These beauties can be saved, if you take the proper steps to stop them from turning into "beasts."

STUDENT INFO

INSTR. NOTES

FIREFIGHTER SURVIVAL

LIFE - THE #1 VALUE

The most basic value at stake in any emergency is life, especially human life. The firefighter must always keep this clearly in focus. The lives at stake are not only those of the public whom the fire fighters protect, but also those of the fire fighters themselves. Gone is the day when the lives of firefighters were viewed as more or less expendable. And while it is still heroic and praiseworthy to die in the line-of-duty, one cannot allow the careless disregard for the lives of the firefighters.

Therefore, firefighter survival must be of paramount concern to everyone associated with this profession. Both the officer in charge and the person on-line must value their own lives and those of their colleagues and do all in their power to protect them.

Nonetheless, fireground injuries and fatalities are probably not totally unavoidable. However, they can be reduced if professionalism increases. It can be helpful to examine data and refresh one's memory on some fundamentals of safety.

FIREGROUND INJURIES AND FATALITIES

Those injuries that occur during combative situations are usually the result of poor training and poor supervision on the fireground. The perpetuation of the "iron" firefighter image is a most probable reason for fireground injuries.

Vehicle Accidents

The importance of being "first" on the scene must be matched with consequence. At best, involved fires are difficult. Without the prompt arrival of a company of firefighters, involved fires become impossible.

Accidents that occur to fire apparatus prior to arrival create that impossible situation. At that point the fire department becomes part of the problem rather than a solution.

Utilize video tape to support sections of the firefighter survival curriculum.

STUDENT INFO

INSTR. NOTES

Falls

Most accidents involving a fall occur when, in haste, a firefighter fails to employ those proven safety procedures such as having a buttman on the ladder, tying off on the ladder, being aware of slippery conditions, or using a safety harness.

Flashover

Flashover is not well understood by firefighters. Up to now it was thought that combustible gases released during the early fire stages gathered at the ceiling, mixed with air, and suddenly ignited when they entered the flammable range. Recent tests, however, disprove this, as the following comments indicate:

"Current research shows that if this ignition of combustible gases may occur, it precedes the flashover. Flashover is now believed to be caused by thermal radiation feedback from ceiling and upper walls. When all the combustibles in the space have become heated to their ignition temperatures, simultaneously ignition occurs." (NFPA Fire Protection Handbook, 15th Ed., 1982, pp 5-48)

This is a bit different from the more traditional theory and should be remembered.

- Significant free-burning fire in a room
- High temperature
- Firefighter forced to stay low due to heat
- Vapors burning or flashing along a ceiling

Most materials will ignite at a certain temperature. The ignition temperature range for most ordinary combustibles is 400° to 1400° F. The temperature given off by a typical, well-involved fire can easily reach 800° to 1500° F.

Therefore, it is obvious, that before very long, the liberated heat is going to preheat combustible contents to their ignition temperature. At that point, everything ignites with almost explosive violence. Interior finish is not to be overlooked as a contributor to flashover.

Show current video tape involving incidents where flashover played a significant part in firefighter survival. The "Proud Bird" fire is a good example.

TEST QUESTION:
Signs of impending flashover.

STUDENT INFO

INSTR. NOTES

Many personal accounts of flashovers state that the building just "exploded in flame" moments after firefighters arrived. This is a flashover. What if the firefighters are advancing down a hall or in a room when it occurs?

Backdraft

Backdraft is another serious danger to firefighters and to the structure. It can occur in tightly closed structures. A backdraft is caused by introduction of oxygen into an oxygen-deficient atmosphere. A fire has used up all the available oxygen and is now smouldering. Basements and cellars are a common place for this to occur. The remainder of the building may be tenable or uninvolved in fire.

Fuel is present in the form of combustible fire loading. Heat is present and the temperature is high enough to raise the combustibles to their ignition temperature. If the temperature is high enough, the carbon monoxide (ignition temperature of 1128° F) will explode.

In other words, the room is hot enough to burst into flame. All it needs is oxygen introduced by the failure of a window from the effects of the fire or by a firefighter breaking or opening a door.

The signs of a backdraft condition are:

Inside the Structure

- Heavy column of hot, dense smoke swirling around with great force.
- A peculiar whistling sound of incoming air being drawn inward due to pressure differentials.
- Grayish yellow smoke.
- Sickly or intermittent flame.

Outside the Structure

- Hot glass or doors with little or no fire immediately adjacent.

TEST QUESTION:
Signs of impending backdraft and how it differs from flashover.

STUDENT INFO

INSTR. NOTES

- Warm, grayish yellow smoke emitted forcefully from cracks and small openings. Smoke may be "puffing" out of the building. The building appears to be breathing.

Prevention of a backdraft is achieved by rooftop ventilation or ventilation above the fire room. There is no urgency to break into a room or building where a backdraft condition exists. The fire is a third-stage smouldering fire and is not propagating or spreading, at this point.

Vertical ventilation will remove the excessive heat and the carbon monoxide gas. It must be performed cautiously to protect firefighters. Lines must be charged and ready to go. The ignition of ventilated carbon monoxide gas is possible when it combines with the air if the gas is at its ignition temperature and in its flammable range of 12% to 74%.

After ventilation, caution must be exercised in opening up at the fire level. Firefighters must stay low and crouched behind doors. To the side of doorways when doors are opened. This is necessary in case an explosion or flashover does occur.

Building Collapse

Another area of potentially serious injuries is building construction. In many ways, this one item is certainly highly dangerous in terms of its unexpectedness and potential consequences.

It is beyond question that older structures built many years ago are more prone to fires. Inadequate wiring, dried lumber, accumulation of paints or varnishes are just three of the contributing causes. Along with this increased fire risk are, more than likely, structural weaknesses or structural modifications.

While you can expect to find a structure weakened because of age, you probably don't know about the hidden structural changes. This would include blocked stairwells, sealed-over fireplaces, or thinly-covered duct openings in the floor. Some of this is known ahead of time through careful preplanning and the firefighter can mentally pre-

Show current video tape involving incidents where building collapse played a significant part in firefighter survival. The "Hackensack Ford" fire is a good example; Hackensack, New Jersey.

STUDENT INFO

INSTR. NOTES

pare for potential building collapse. Be alert for signs of collapse like bulging walls, or cracking, groaning, and sagging floors.

This IC must anticipate such developments as soon as possible and order personnel out of potentially dangerous situations. However, no matter how well preplanning is done or how attentive a commander might be, the unexpected can happen with a sudden fury having tragic consequences. Therefore, needless chances are to be avoided. Property is expendable--lives are not.

Lack of Protection Equipment

Without a doubt the most inexcusable cause of injuries (and fatalities) is the careless disregard of proper protective equipment. Probably the one reason many firefighters are reluctant to use proper protective equipment is a lingering sense that the macho firefighter is tough and protective equipment does not measure up to this macho image.

There is growing documentation that proper use of protective clothing and self-contained breathing apparatus is reducing firefighter injuries and life loss. Yet convincing every firefighter of this benefit is an uphill fight.

The IC who is alert and safety conscious cannot afford not to enforce good habits such as using full protective clothing and breathing apparatus at all fires. Here it is wiser to be overprotected. A bit of inconvenience from the cumbersome gear is worth its weight in gold when it means preventing burns, scalds, and smoke inhalation.

PROFESSIONALISM VERSUS INJURIES AND FATALITIES

The firefighter, led by the fire officer acting in a professional manner, will be more successful on the incident scene and experience fewer injuries. Practices which can be incorporated into daily routines to promote this professionalism are:

Show current video tape involving incidents where lack of protective equipment played a significant part in firefighter survival. "To Hell and Back" is a good example.

STUDENT INFO

INSTR. NOTES

Strong Organization Concept

A strong organization can provide necessary operating procedures that have the greatest impact on firefighter safety. A well-run department in which clear lines of authority, shared responsibility, and respect for each other, become the foundation of the proper respect and concern for life safety.

Operational Procedures

Operational procedures that are standardized, clearly written, and mandated to each department member will establish accountability. Based on these operational manuals, repetitive training in all job skills will enable the firefighter to be rational, logical, and unemotional when attacking a fire. The lack of a proper frame of mind results in haste, carelessness, and inevitably, injury.

COMMAND RESPONSIBILITY

Experience has shown, most firefighters are super-aggressive. No fire chief wants to change this attitude, however, it must be controlled on the incident scene. While firefighters are using those job skills necessary to control an incident, the IC must manage to protect the firefighter. Keeping the "team" together, emphasizing individual awareness through preplanning, and providing a "retreat" signal are just three specific management tools that promote safety and survival.

A related issue is the question of rest and relaxation. "What firefighter knows when to quit?" This question is often asked after the firefighter sustains some injury that could be directly attributed to fatigue. As this is too often the case, the IC has a most definite responsibility in providing a rest and recovery area. Firefighters who over-exert themselves are highly susceptible to severe injuries. They also thereby endanger colleagues.

INCIDENT FACTORS THAT AFFECT SURVIVAL

During major incidents, when fire suppression forces are spread over a large area, the "control factor" becomes extremely important. Often the IC may never see all of the firefighters at the incident, therefore, the IC must be responsible for and hold

TEST QUESTION:
Both a Strong Organizational Concept and Operational Procedures promote Professionalism.

STUDENT INFO

INSTR. NOTES

accountable the officers who serve in the organizational structure. When the span of control of any function leader is exceeded, the ability of that leader to provide a safe operational area fails.

When a professional approach is fostered and used on a regular basis, the likelihood of reduced casualties increases. This is the goal toward which everyone associated with firefighting must strive.

RETIRED CURRICULUM

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: _____

2. Building Description: _____

3. Units Responding: _____

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow

5. Needed Fire Flow

6. Required Personnel for GPM.

7. Required Personnel for Support.

8. Units Needed

Engines

Trucks

Chiefs

Others

Percent of Involvement			
25%	50%	75%	100%

9. Factors Present

Fixed: _____

Fire Ground: _____

10. Fire Behavior: _____

11. Strategy: _____

12. Problems Anticipated: _____

13. Hazards to Personnel: _____

13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: 700 Cannery Row - Monterey Cannery
2. Building Description: _____

3. Units Responding: BC 111, E 11, E12, E15, T 11, Medic 11

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow
5. Needed Fire Flow
6. Required Personnel for GPM.
7. Required Personnel for Support.
8. Units Needed

	Percent of Involvement			
	25%	50%	75%	100%
Engines				
Trucks				
Chiefs				
Others				

9. Factors Present
 - Fixed: _____
 - Fire Ground: _____
10. Fire Behavior: _____
11. Strategy: _____
12. Problems Anticipated: _____
13. Hazards to Personnel: _____
13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: 422 Alvarado - Underwood Apartments
2. Building Description: _____

3. Units Responding: BC 111, E 12, E14, E15, T 11, Medic 14

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow
5. Needed Fire Flow
6. Required Personnel for GPM.
7. Required Personnel for Support.
8. Units Needed

	Percent of Involvement			
	25%	50%	75%	100%
Engines				
Trucks				
Chiefs				
Others				

9. Factors Present
Fixed: _____

- Fire Ground: _____

10. Fire Behavior: _____

11. Strategy: _____

12. Problems Anticipated: _____

13. Hazards to Personnel: _____

13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: 643 Lighthouse - Godsby House Inn

2. Building Description: _____

3. Units Responding: BC 111, E 11, E14, E15, T 11, Medic 11

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow

5. Needed Fire Flow

6. Required Personnel for GPM.

7. Required Personnel for Support.

8. Units Needed

Engines

Trucks

Chiefs

Others

Percent of Involvement			
25%	50%	75%	100%

9. Factors Present

Fixed: _____

Fire Ground: _____

10. Fire Behavior: _____

11. Strategy: _____

12. Problems Anticipated: _____

13. Hazards to Personnel: _____

13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: 1200 Olmstead Road - Way Station
2. Building Description: _____

3. Units Responding: BC 111, E 11, E13, E15, T 11, Medic 14

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow
5. Needed Fire Flow
6. Required Personnel for GPM.
7. Required Personnel for Support.
8. Units Needed

	Percent of Involvement			
	25%	50%	75%	100%
Engines				
Trucks				
Chiefs				
Others				

9. Factors Present
 - Fixed: _____
 - _____
 - Fire Ground: _____
 - _____
10. Fire Behavior: _____
11. Strategy: _____
12. Problems Anticipated: _____
13. Hazards to Personnel: _____
13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: 125 Surf Way - Harbor House Apartments
2. Building Description: _____

3. Units Responding: BC 111, E 11, E13, E15, T 11, Medic 11

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow
5. Needed Fire Flow
6. Required Personnel for GPM.
7. Required Personnel for Support.
8. Units Needed

	Percent of Involvement			
	25%	50%	75%	100%
Engines				
Trucks				
Chiefs				
Others				

9. Factors Present
Fixed: _____

- Fire Ground: _____

10. Fire Behavior: _____

11. Strategy: _____

12. Problems Anticipated: _____

13. Hazards to Personnel: _____

13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: Lighthouse Ave. btwn Fountain & Grand - Block Plan
2. Building Description: _____

3. Units Responding: BC 111, E 12, E13, E15, T 11, Medic 114

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow
5. Needed Fire Flow
6. Required Personnel for GPM.
7. Required Personnel for Support.
8. Units Needed

	Percent of Involvement			
	25%	50%	75%	100%
Engines				
Trucks				
Chiefs				
Others				

9. Factors Present
 - Fixed: _____
 - Fire Ground: _____
10. Fire Behavior: _____
11. Strategy: _____
12. Problems Anticipated: _____
13. Hazards to Personnel: _____
13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: #1 Surf Way - Ocean House Apartments
2. Building Description: _____

3. Units Responding: BC 111, E 11, E13, E14, T 11, Medic 14

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow
5. Needed Fire Flow
6. Required Personnel for GPM.
7. Required Personnel for Support.
8. Units Needed

	Percent of Involvement			
	25%	50%	75%	100%
Engines				
Trucks				
Chiefs				
Others				

9. Factors Present
Fixed: _____

- Fire Ground: _____

10. Fire Behavior: _____

11. Strategy: _____

12. Problems Anticipated: _____

13. Hazards to Personnel: _____

13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: 128 19th St. - Wilson Hotel
2. Building Description: _____

3. Units Responding: BC 111, E 11, E13, E15, T 11, Medic 11

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow
5. Needed Fire Flow
6. Required Personnel for GPM.
7. Required Personnel for Support.
8. Units Needed

	Percent of Involvement			
	25%	50%	75%	100%
Engines				
Trucks				
Chiefs				
Others				

9. Factors Present
Fixed: _____

- Fire Ground: _____

10. Fire Behavior: _____

11. Strategy: _____

12. Problems Anticipated: _____

13. Hazards to Personnel: _____

13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: Olympic Apartments
2. Building Description: _____

3. Units Responding: BC 111, E 11, E12, E15, T 11, Medic 11

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow

5. Needed Fire Flow

6. Required Personnel for GPM.

7. Required Personnel for Support.

8. Units Needed

Engines

Trucks

Chiefs

Others

Percent of Involvement			
25%	50%	75%	100%

9. Factors Present

Fixed: _____

Fire Ground: _____

10. Fire Behavior: _____

11. Strategy: _____

12. Problems Anticipated: _____

13. Hazards to Personnel: _____

13. Standpipes: _____ Sprinklers: _____

STUDENT INFO

PRE-FIRE PLAN FORM

1. Building Address: 568 Lighthouse Ave. - Pacific Grove Art Center
2. Building Description: _____

3. Units Responding: BC 111, E 11, E13, E15, T 11, Medic 11

PERSONNEL/GPM DELIVERY NEEDS

4. Available Flow
5. Needed Fire Flow
6. Required Personnel for GPM.
7. Required Personnel for Support.
8. Units Needed

	Percent of Involvement			
	25%	50%	75%	100%
Engines				
Trucks				
Chiefs				
Others				

9. Factors Present
- Fixed: _____

- Fire Ground: _____

10. Fire Behavior: _____

11. Strategy: _____

12. Problems Anticipated: _____

13. Hazards to Personnel: _____

13. Standpipes: _____ Sprinklers: _____

CASE STUDY ACTIVITY

YOU WILL BE GIVEN THREE DIFFERENT CASE STUDIES WITH WHICH TO WORK. IN EACH ONE YOU WILL BE GIVEN A SCENARIO AND A PREVIOUSLY COMPLETED PRE-PLAN FOR THE LOCATION. IN WORKING THROUGH THIS MATERIAL, FOLLOW THE GENERAL OUTLINE BELOW. PLEASE COMPLETE THE FIRST TWO SCENARIOS ON YOUR OWN PRIOR TO CLASS ON TUESDAY. YOUR GROUP WILL WORK THE HUMBOLT HOTEL PROBLEM, AS ONE LARGE GROUP. BE PREPARED TO DISCUSS YOUR DECISIONS WITH THE CLASS.

1. Read the case study scenario carefully. Consult the pre-plan for this incident as you begin to work through it.
2. Diagram the fireground scene on the pre-plan. Define and label your divisions and groups.
3. Set up your Incident Command Team, recording each position on the Incident Action Guide.
4. Refer to the operations section to ascertain the initial responding units. Compile a resource status report. Resources enroute section should indicate those responding to the additional alarms you have called in.
5. Prioritize your goals and design your strategy for handling this incident. Express this as your strategic objectives.
6. For each strategic objective, identify the tactical objectives for successful completion.

Goodwill Store

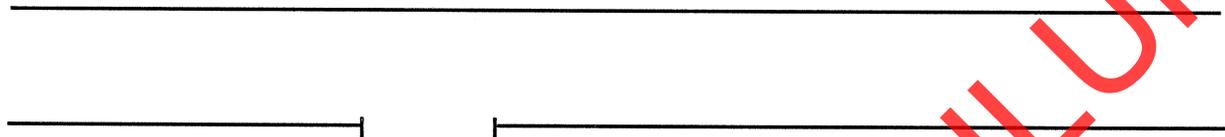
As in most modern neighborhood shopping centers, these buildings are one-story with tilt-up concrete construction, wood interior walls and wood roofs of light weight construction. The main structure is 100' long and 30' wide with a division wall separating it 40' back from the entrance doors. A common attic is shared by Goodwill, Manolios Music, and the beauty shop.

Between the theater and the goodwill store is a four hour fire wall. On the left is a one hour wall. A common concrete canopy, approximately eight feet wide, extends the length of the stores. An air conditioning unit is on the roof of the theater. Hydrants are located about 300 feet left of the theater and 200 feet into the parking lot.

It is 2:30 p.m. Saturday. The theater is holding a Kiddies Matinee Special. The stores in the center have been open since 9:00 a.m. The Goodwill Store had received a full truck load of assorted goods and boxes from another store earlier that day. This added inventory was mostly in the back storage area blocking the rear entrance.

Upon returning from lunch the manager was advised of a phone call threatening to burn down the store. At approximately 2:25 p.m. a car drove by the front of the store and tossed a fire bomb into the front door and drove away. Witnesses claimed that there were at least five customers in the store at the time of the incident. None have escaped through the front door. There are two employees on duty, including the manager, and one volunteer. Upon arrival of the first initial engine, heavy smoke is seen pouring from the front of the store.

GOODWILL STORE & SHOPPING CENTER



PARKING

RETIRED CURRICULUM

ACTION PLAN WORKSHEET

I. Critical factors

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____

II. Resources

III. ICS Postions

A. Position - _____

1. Justification - _____

B. Position - _____

1. Justification - _____

C. Position - _____

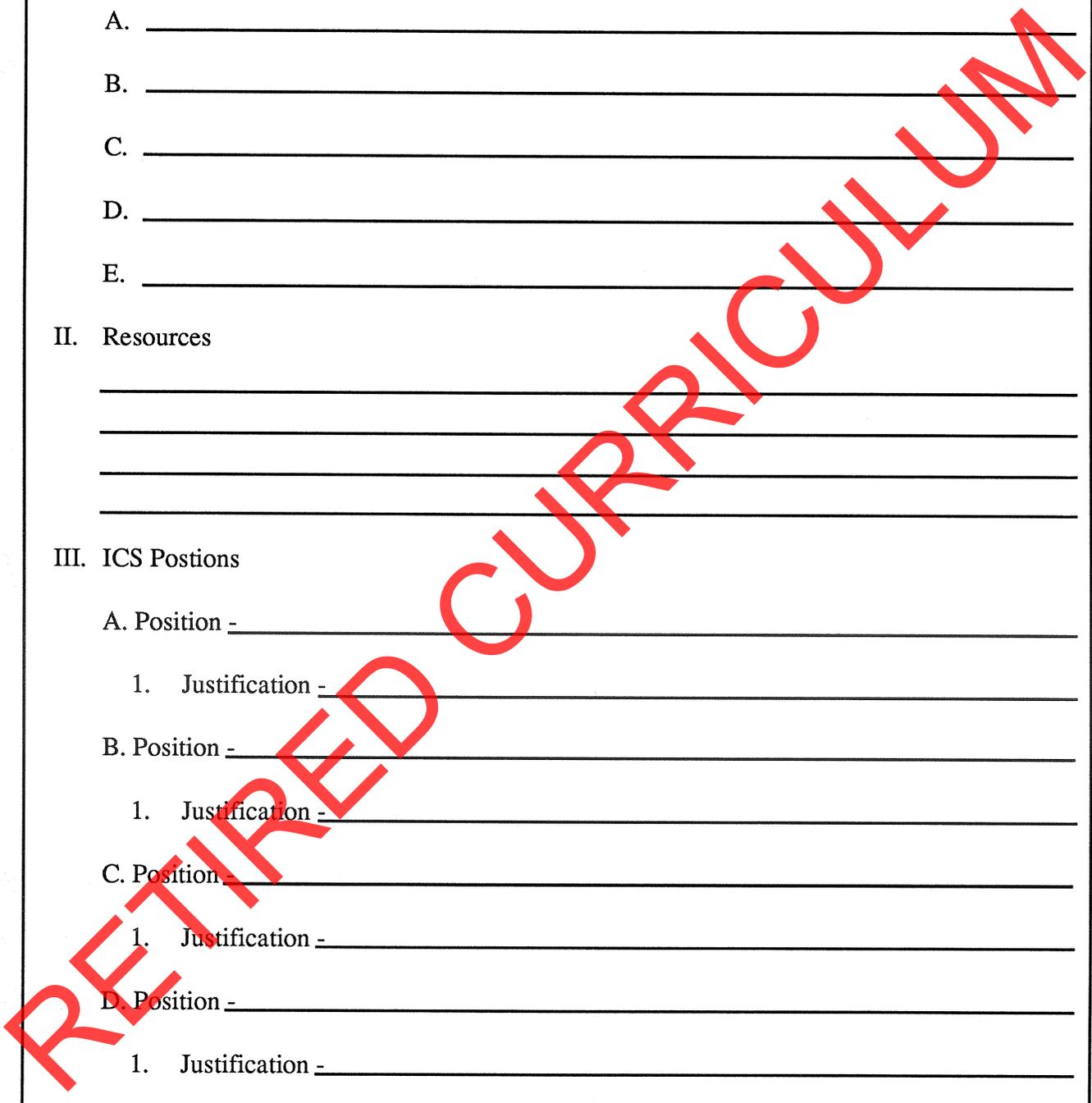
1. Justification - _____

D. Position - _____

1. Justification - _____

E. Position - _____

1. Justification - _____



IV. Strategic Goals/Tactical Objectives

A. Strategic goal #1 - _____

Tactical Objective 1a - _____

Tactical Objective 1b - _____

Tactical Objective 1c - _____

B. Strategic goal #2 - _____

Tactical Objective 2a - _____

Tactical Objective 2b - _____

Tactical Objective 2c - _____

C. Strategic goal #3 - _____

Tactical Objective 3a - _____

Tactical Objective 3b - _____

Tactical Objective 3c - _____

D. Strategic goal #4 - _____

Tactical Objective 4a - _____

RETIRED CURRICULUM

STUDENT INFO

SKULL SESSION

Tactical Objective 4b - _____

Tactical Objective 4c - _____

E. Strategic goal #5 - _____

Tactical Objective 5a - _____

Tactical Objective 5b - _____

Tactical Objective 5c - _____

F. Strategic goal #6 - _____

Tactical Objective 6a - _____

Tactical Objective 6b - _____

Tactical Objective 6c - _____

G. Strategic goal #7 - _____

Tactical Objective 7a - _____

Tactical Objective 7b - _____

Tactical Objective 7c - _____

RETIRED CURRICULUM

Mercury Savings

This occupancy is a local savings and loan. The regular banking facilities are located on the ground floor with general offices above ground level. The building measures 125 feet by 125 feet at the ground level, but only 125 x 75 feet on floors two, three and four. It is a reinforced concrete structure with drywall interior walls.

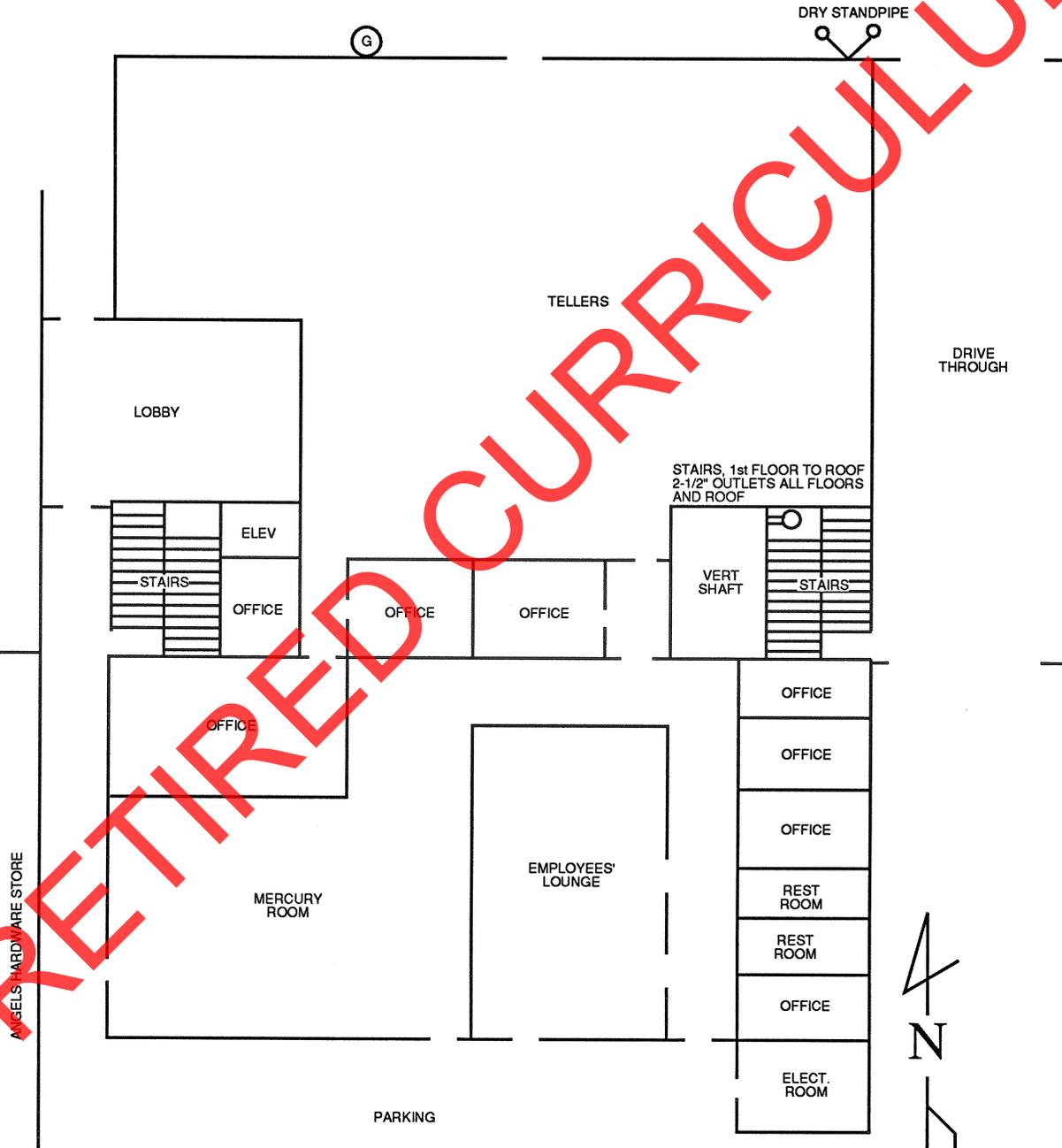
The occupancy load is 125 with about 75 on floors two, three and four. The office is acclimatized. Heating, air conditioning and purification are on system. It is non-sprinklered but has a dry standpipe system. The standpipes are in the right stairwell. Both stairwells are enclosed in two-hour walls. The available flow is 3500 gpm.

One of the third floor occupants is Instant Printing Co., a small jobber who has a full line of reproduction services from Xerox to small letter presses. About 7:00 a.m. a light fixture shorts out in a rear storage area used to stock paper and other duplicating materials, many of which are combustible. The fire is not discovered til about 9:30 by a clerk who ran an errand on his way to work. The boss usually arrives at 8:30 a.m., however, this morning he had a dental appointment.

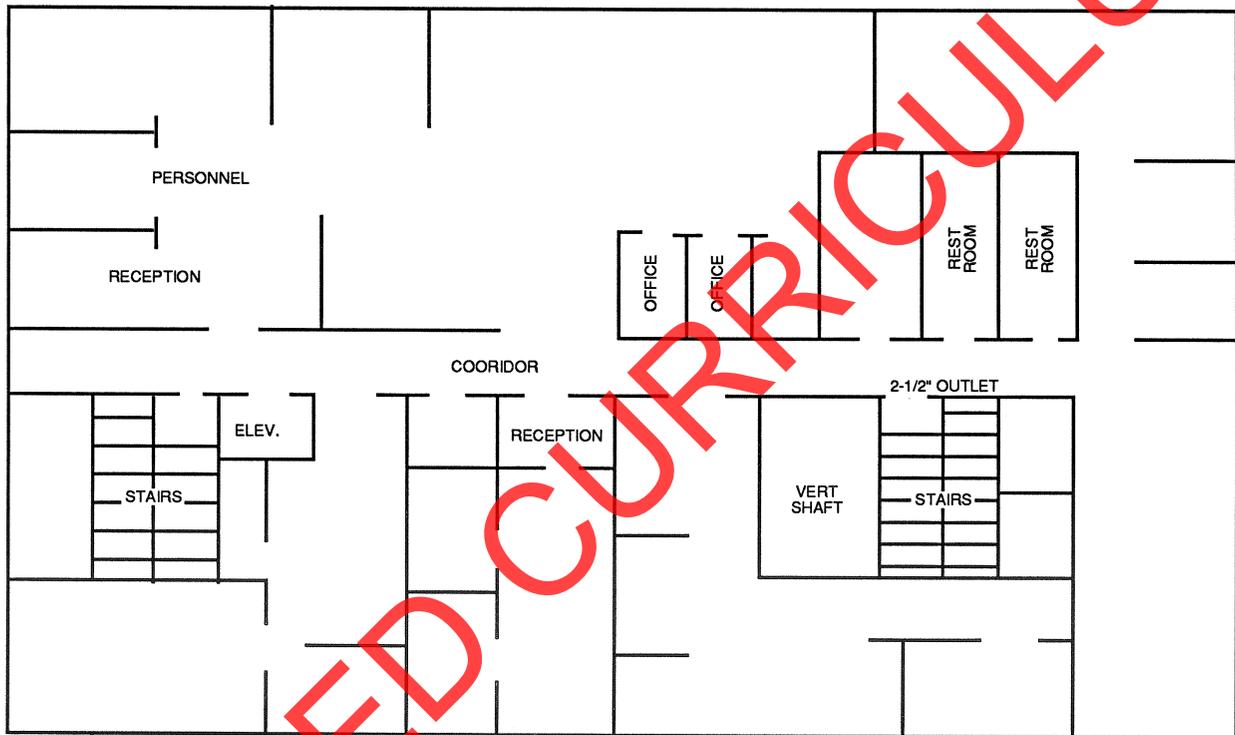
The dense smoke makes extinguishment impossible. The alert clerk notifies the fire department via 911. As the first company rolls in, it notices fire issuing from the third floor suite. Most of the buildings occupants are exiting into the parking lot.

MERCURY SAVINGS

EDINGER

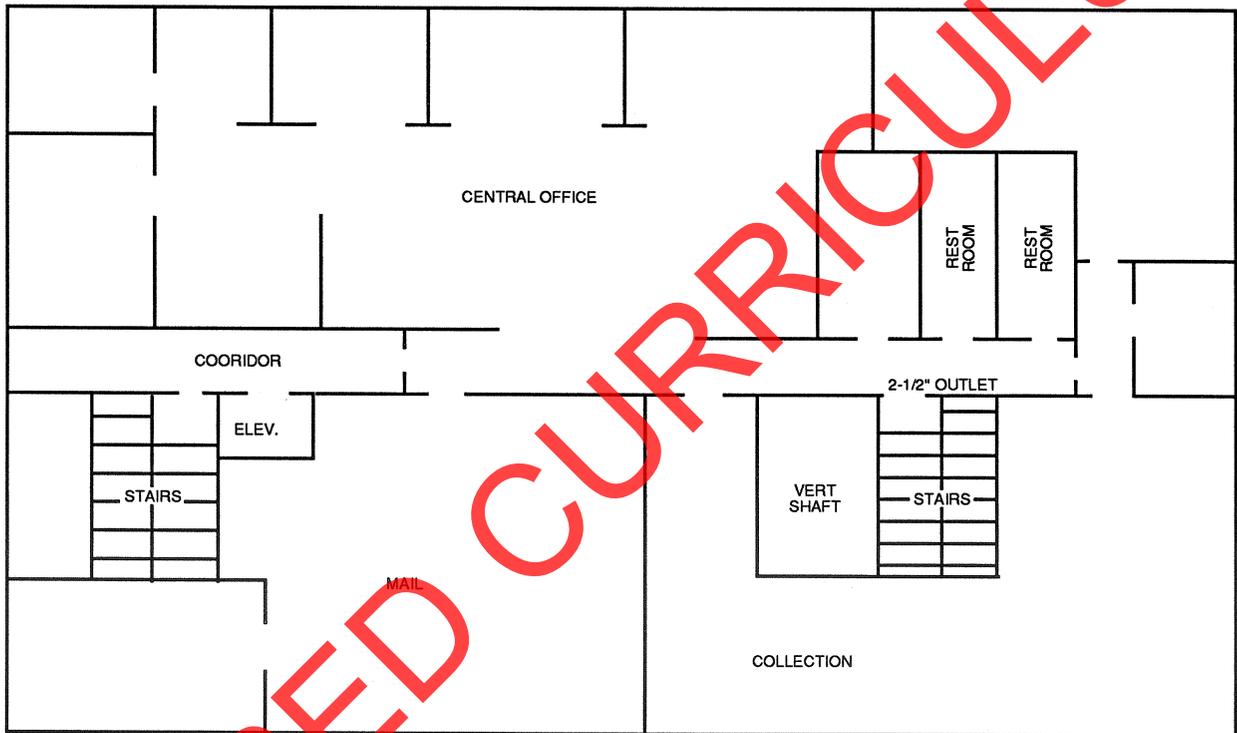


2nd and 3rd FLOOR



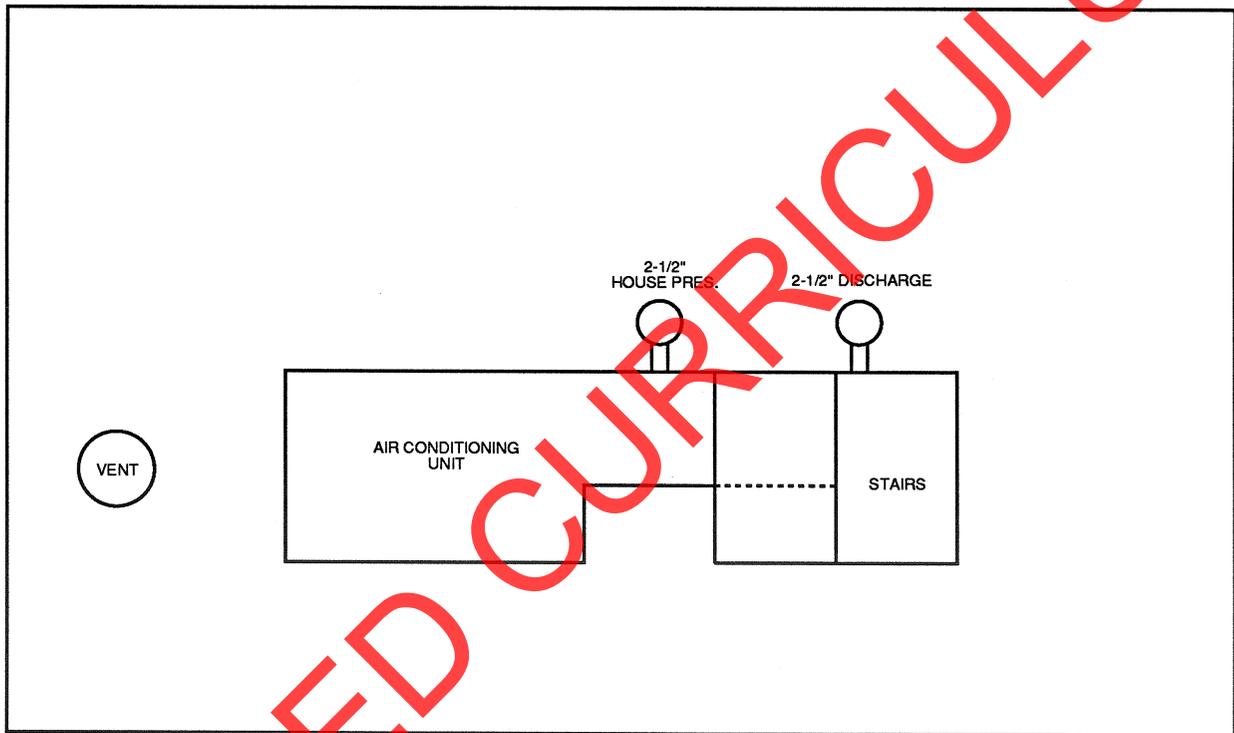
RETIRED CURRICULUM

4th FLOOR



RETIRED CURRICULUM

ROOF TOP
MERCURY SAVINGS



RETIRED CURRICULUM

ACTION PLAN WORKSHEET

I. Critical factors

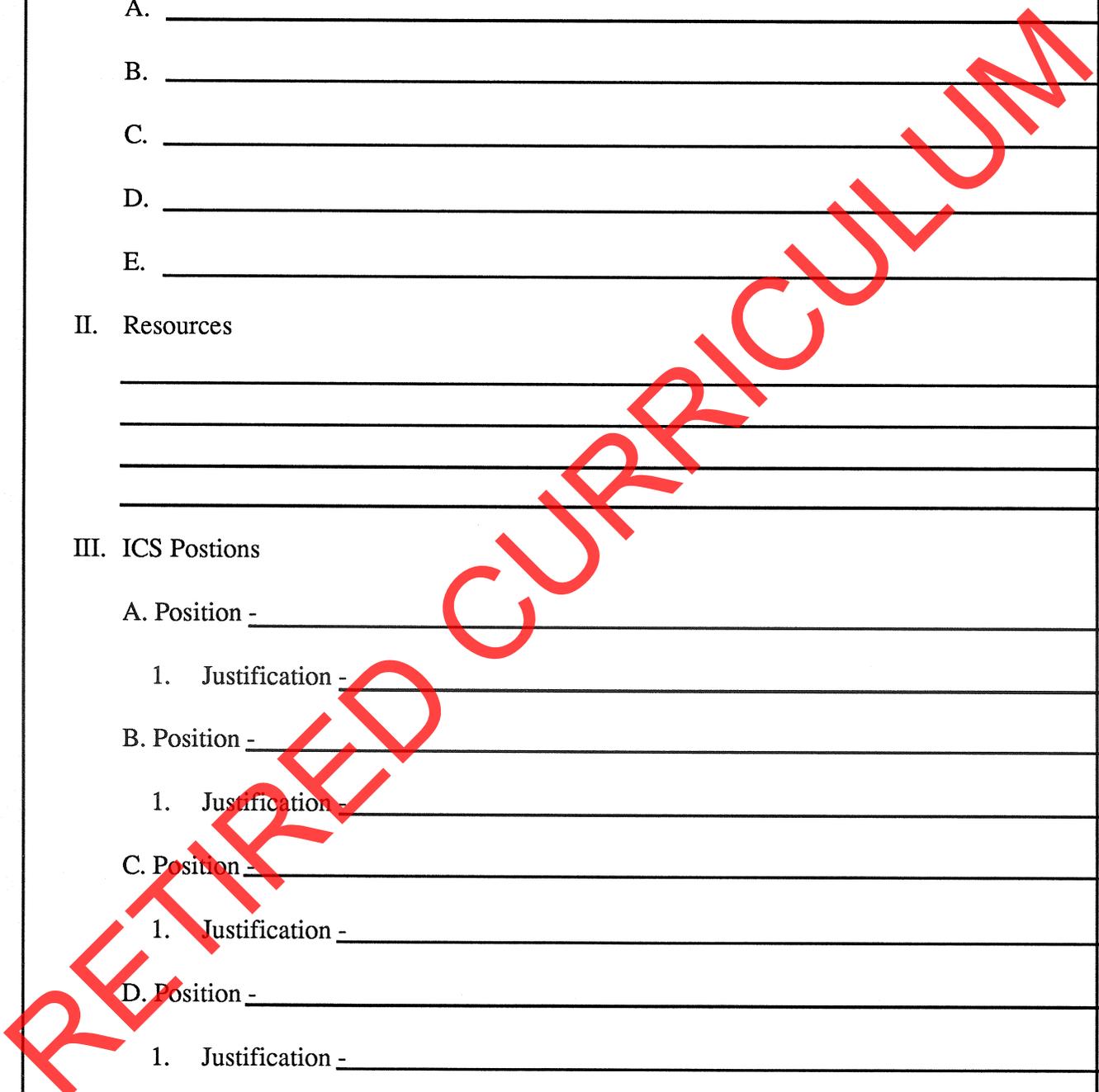
- A. _____
- B. _____
- C. _____
- D. _____
- E. _____

II. Resources

- _____
- _____
- _____
- _____

III. ICS Postions

- A. Position - _____
 - 1. Justification - _____
- B. Position - _____
 - 1. Justification - _____
- C. Position - _____
 - 1. Justification - _____
- D. Position - _____
 - 1. Justification - _____
- E. Position - _____
 - 1. Justification - _____



IV. Strategic Goals/Tactical Objectives

A. Strategic goal #1 - _____

Tactical Objective 1a - _____

Tactical Objective 1b - _____

Tactical Objective 1c - _____

B. Strategic goal #2 - _____

Tactical Objective 2a - _____

Tactical Objective 2b - _____

Tactical Objective 2c - _____

C. Strategic goal #3 - _____

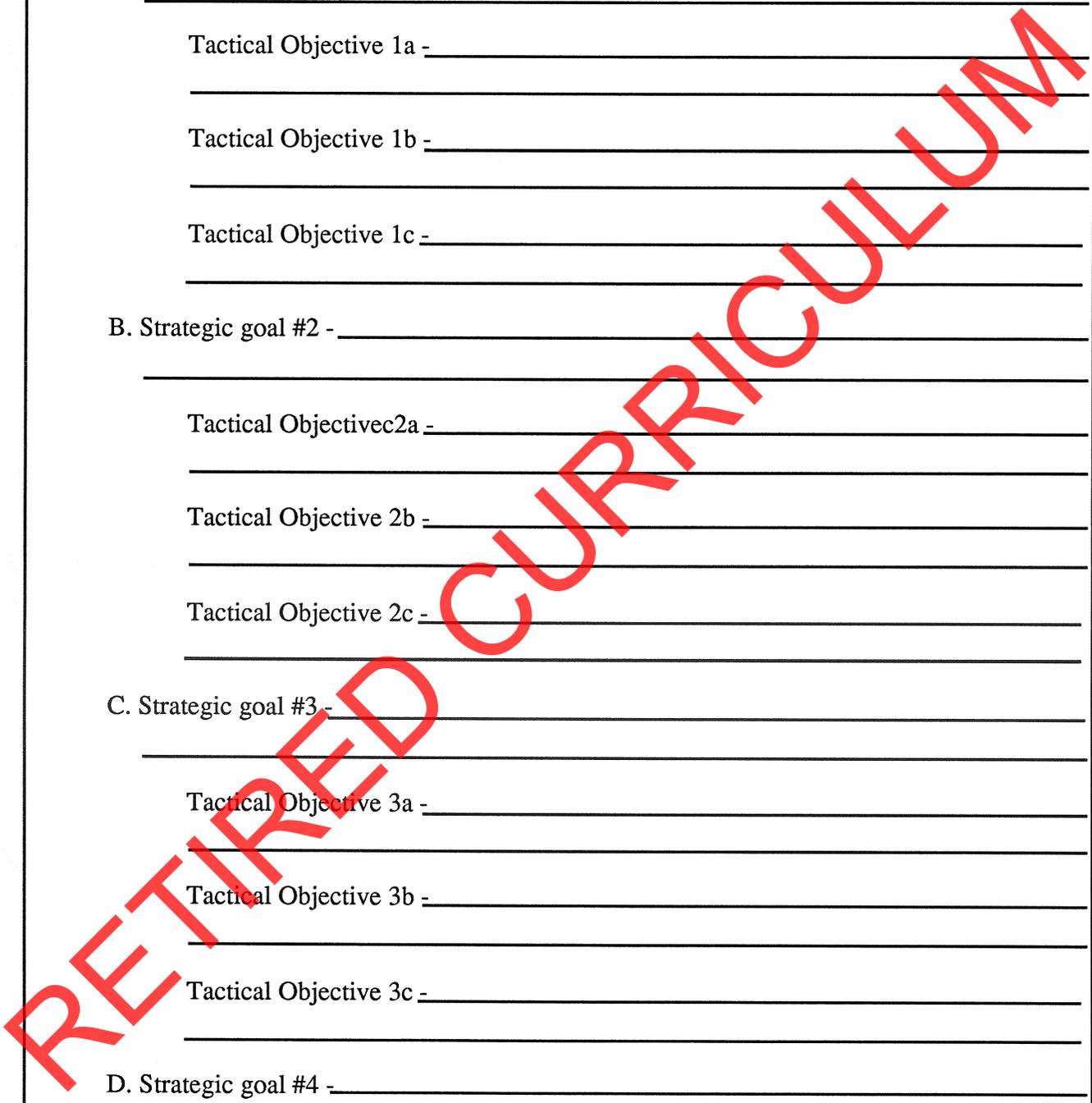
Tactical Objective 3a - _____

Tactical Objective 3b - _____

Tactical Objective 3c - _____

D. Strategic goal #4 - _____

Tactical Objective 4a - _____



STUDENT INFO

SKULL SESSION

Tactical Objective 4b - _____

Tactical Objective 4c - _____

E. Strategic goal #5 - _____

Tactical Objective 5a - _____

Tactical Objective 5b - _____

Tactical Objective 5c - _____

F. Strategic goal #6 - _____

Tactical Objective 6a - _____

Tactical Objective 6b - _____

Tactical Objective 6c - _____

G. Strategic goal #7 - _____

Tactical Objective 7a - _____

Tactical Objective 7b - _____

Tactical Objective 7c - _____

Humbolt Hotel

The Humbolt Hotel is a 1900 circa edifice with brick facing over a wooden frame structure. It measures 100 feet on the alley and 110 feet on Payne Street. The rear has a series of stores attached to it. The roof is wood with tar paper and a granulated stone covering. There is a wooden penthouse above the elevator shaft. The floor plan from the second floor up is similar. The interior stairwell is exposed from the lobby to the top floor.

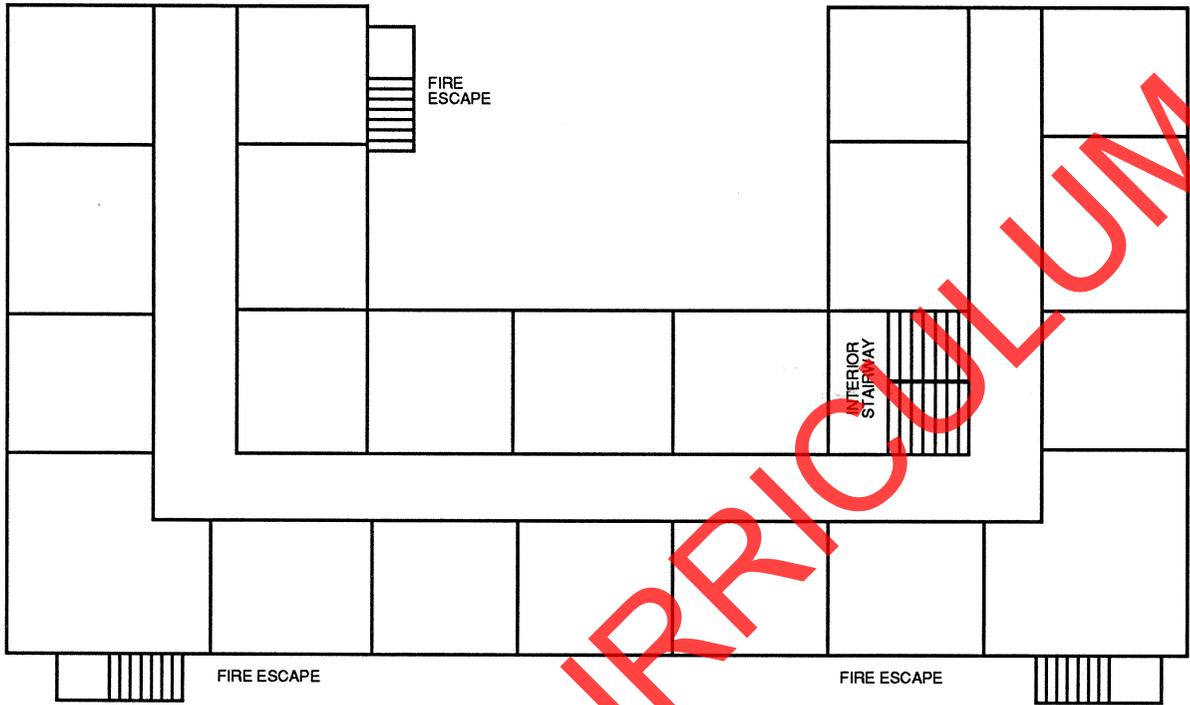
The rear fire escape descends over the one-floor main dining room and terminates on the roof of the adjoining building. The front fire escapes are accessed through hallways at two corners of each floor, where ice and vending machines are stored. All windows are double hung including those accessing the fire escapes. Standpipes are located on the exterior of the cafe and casino walls, Payne Street side. The building is not sprinklered.

The Humbolt Hotel is a haven for some 15-20 elderly residents who are on a fixed income. Many of these occupy the top floors. The hotel manager has waged an unsuccessful campaign to get many of the elderly to part with their accumulation of memorabilia and boxes stored in their rooms.

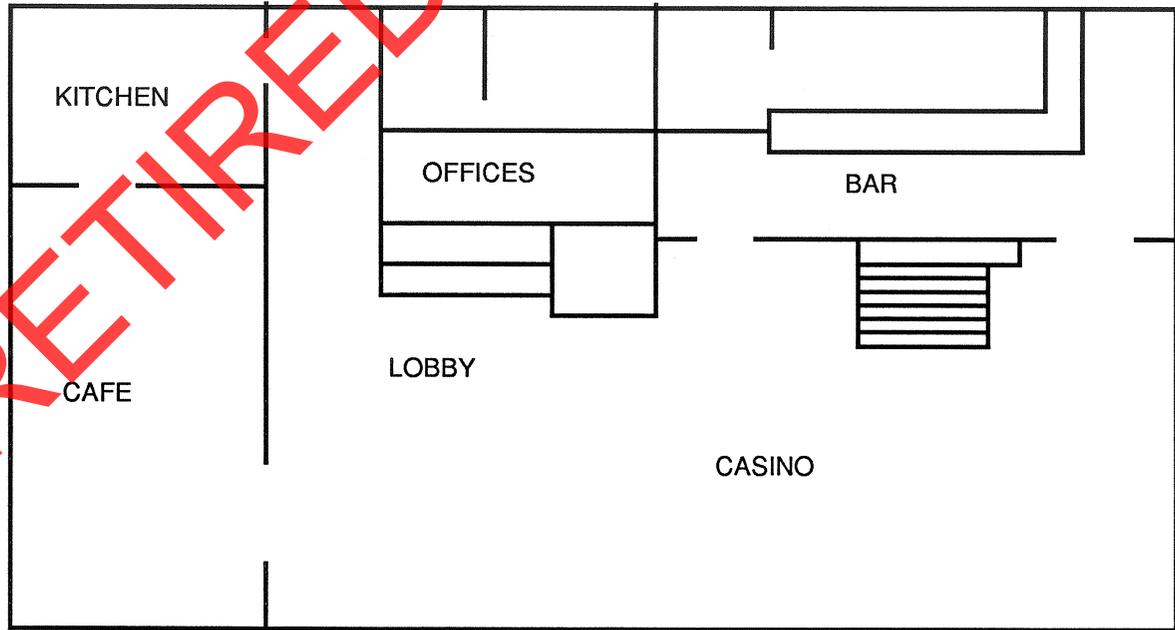
It is early morning. A resident fell asleep while smoking in bed. Another resident, smelling smoke, investigates and notices smoke seeping out from under the door to room 312. In attempting to knock, he notices that the door is very hot. He hurries down the hall calling out "FIRE," finds the inside alarm and pulls it. The desk clerk, before attempting to notify the fire department, decides to check out the alarm by going upstairs until he reaches the fire floor. He then returns to the desk to call for assistance. By then the third floor hall is dense with smoke and confused occupants.

When the fire engines arrive, the corner room is fully involved with flames shooting out the windows. Heavy smoke is also seen. Some of the residents on the fourth floor, above the fire, have opened their windows to let smoke out and heavy smoke is also seen there.

HUMBOLT HOUSE



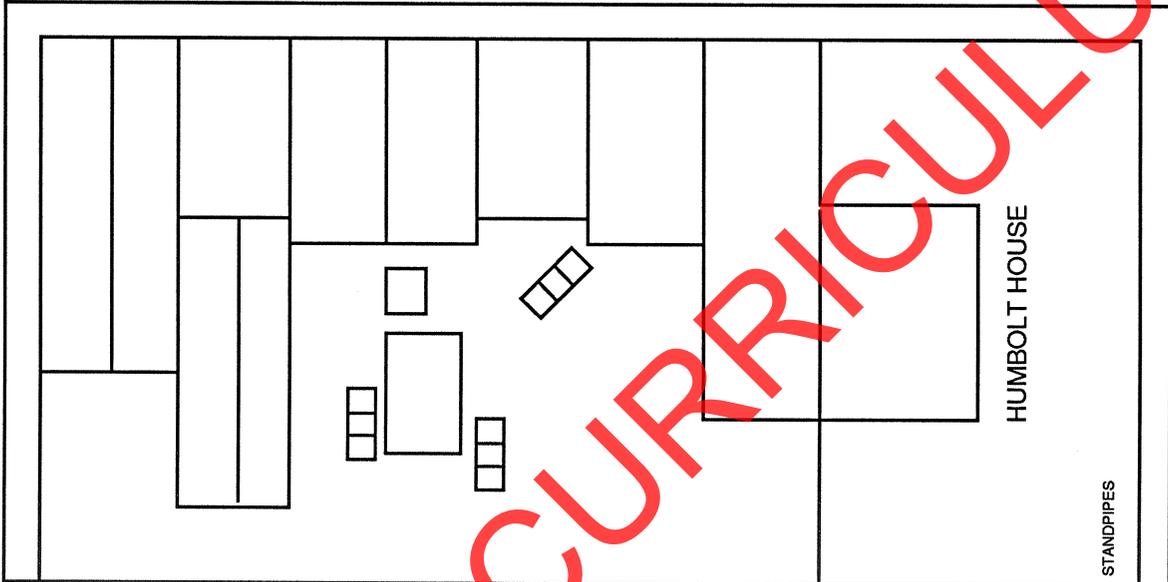
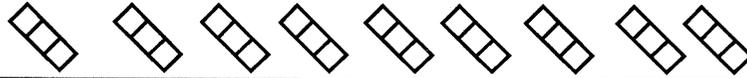
UPPER FLOORS



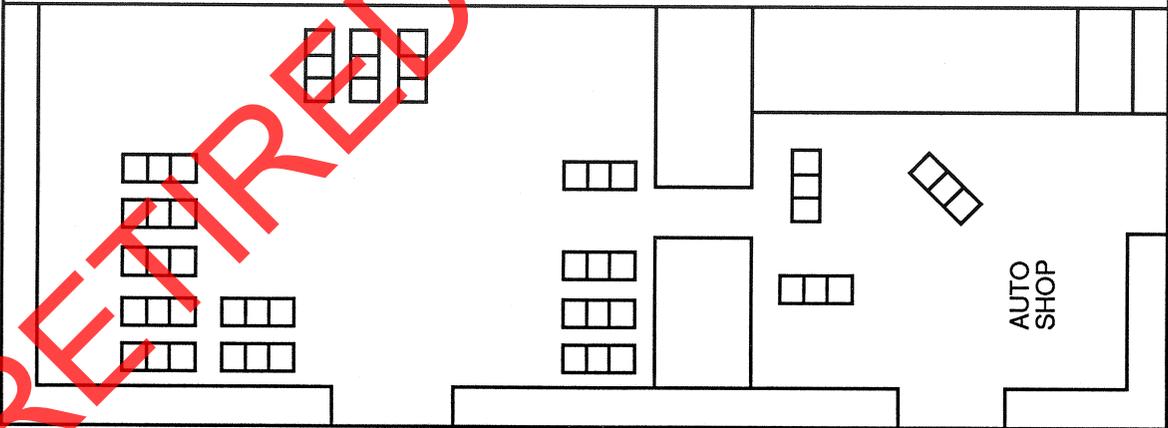
GROUND FLOOR

STUDENT INFO

SKULL SESSION



ALLEY



ACTION PLAN WORKSHEET

I. Critical factors

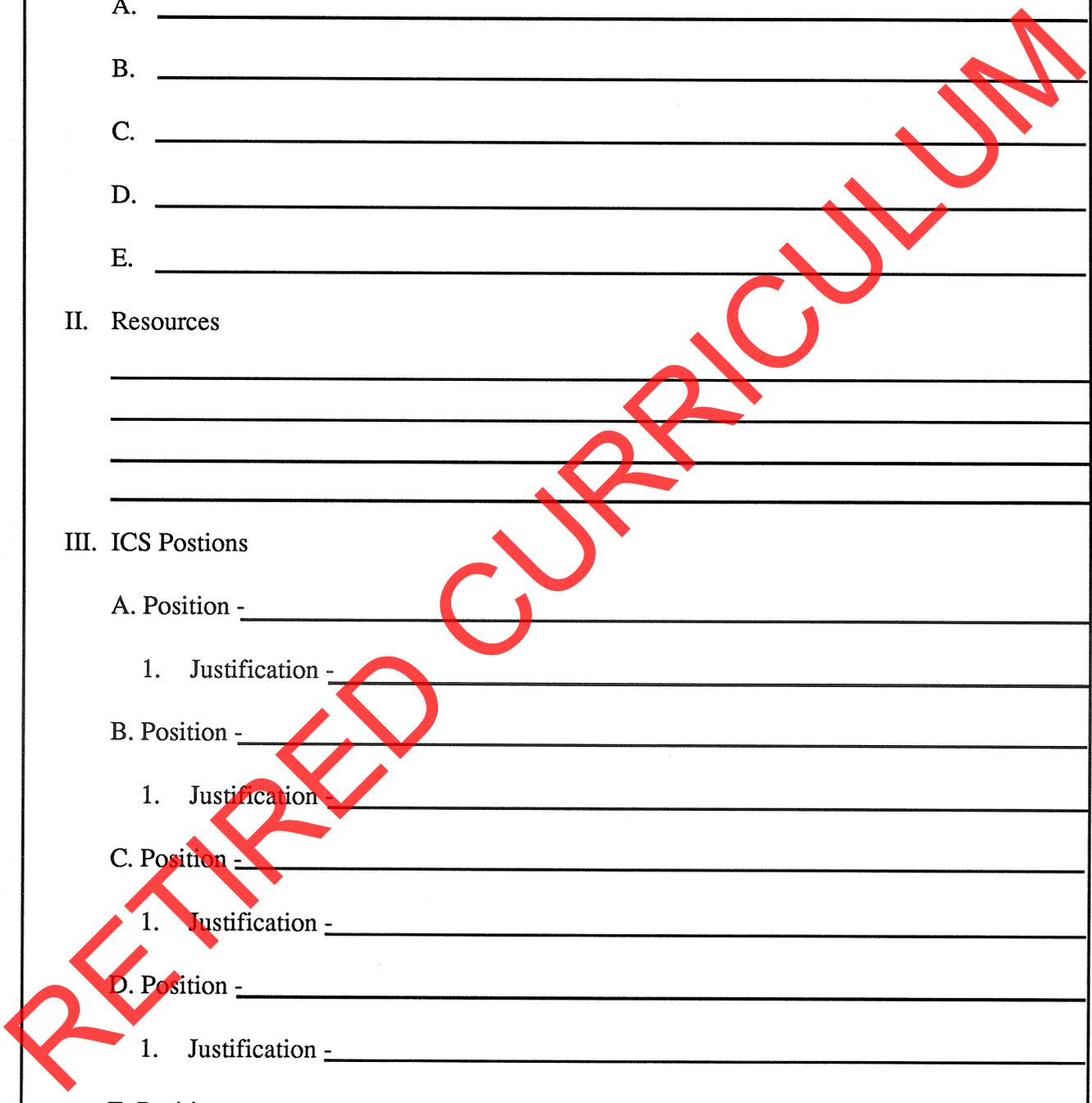
- A. _____
- B. _____
- C. _____
- D. _____
- E. _____

II. Resources

- _____
- _____
- _____
- _____

III. ICS Postions

- A. Position - _____
 - 1. Justification - _____
- B. Position - _____
 - 1. Justification - _____
- C. Position - _____
 - 1. Justification - _____
- D. Position - _____
 - 1. Justification - _____
- E. Position - _____
 - 1. Justification - _____



IV. Strategic Goals/Tactical Objectives

A. Strategic goal #1 - _____

Tactical Objective 1a - _____

Tactical Objective 1b - _____

Tactical Objective 1c - _____

B. Strategic goal #2 - _____

Tactical Objective 2a - _____

Tactical Objective 2b - _____

Tactical Objective 2c - _____

C. Strategic goal #3 - _____

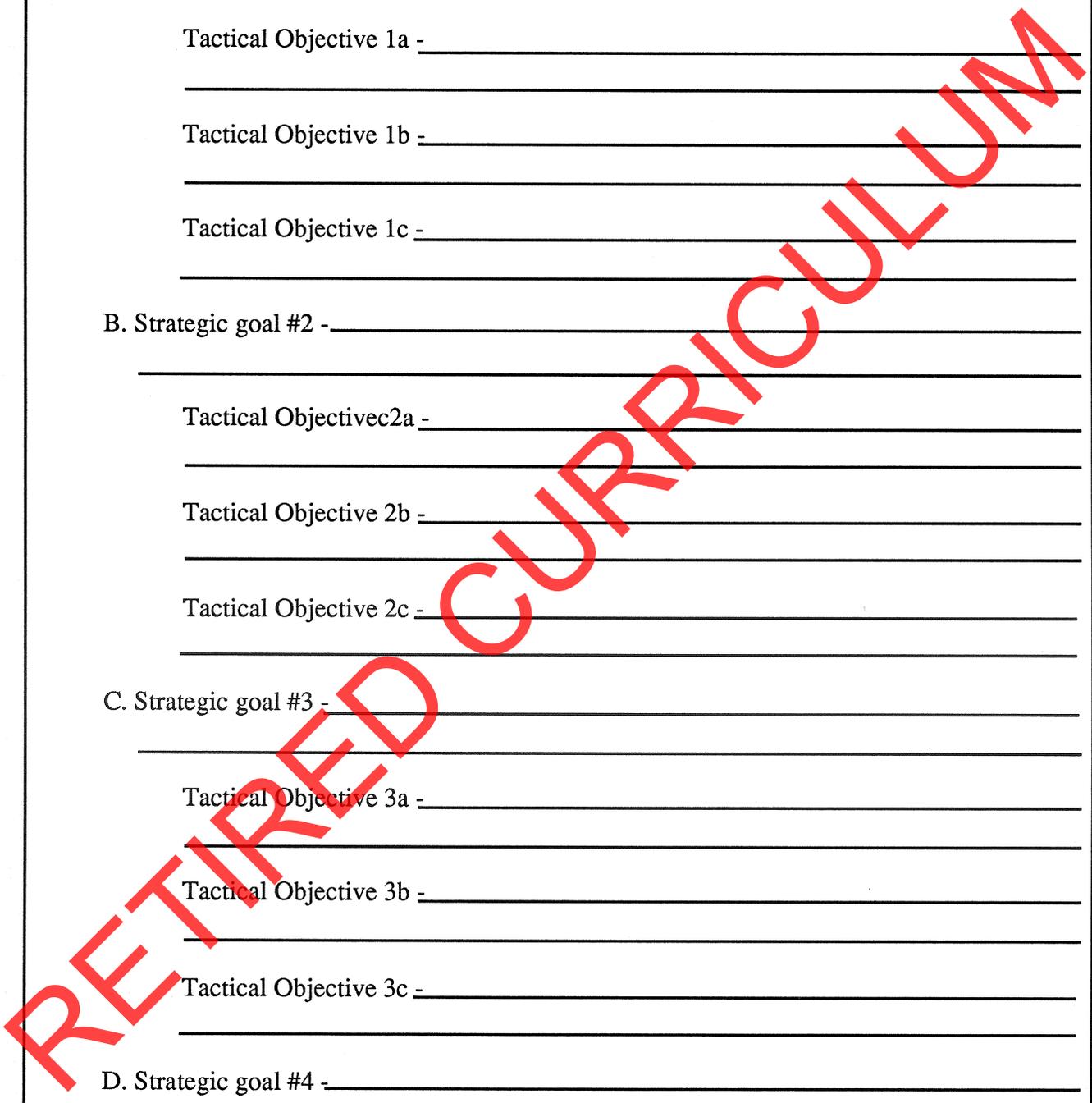
Tactical Objective 3a - _____

Tactical Objective 3b - _____

Tactical Objective 3c - _____

D. Strategic goal #4 - _____

Tactical Objective 4a - _____



STUDENT INFO

SKULL SESSION

Tactical Objective 4b - _____

Tactical Objective 4c - _____

E. Strategic goal #5 - _____

Tactical Objective 5a - _____

Tactical Objective 5b - _____

Tactical Objective 5c - _____

F. Strategic goal #6 - _____

Tactical Objective 6a - _____

Tactical Objective 6b - _____

Tactical Objective 6c - _____

G. Strategic goal #7 - _____

Tactical Objective 7a - _____

Tactical Objective 7b - _____

Tactical Objective 7c - _____

RETIRED CURRICULUM

FIRE STRIKES THE LOS ANGELES CENTRAL LIBRARY

*Excerpted from FIRE COMMAND/ October 1986
By Donald F. Anthony, Deputy Chief*

THE ALARM

At 1052 hours on April 29, 1986, an audio alarm, activated by a smoke detector, sounded in the Los Angeles Central Library. The library telephone operator called the fire department while security personnel directed employees and patrons to evacuate the building. The evacuation was completed in approximately eight minutes.

Upon receiving a telephone report that "bells are ringing," the fire department dispatched a category "B" assignment, consisting of Task Forces 3 and 9, Engine 10, Squad 4, and Battalion Chief 1. (A task force includes a two-piece engine company, a truck and 10 members.) Engine 10 arrived at 1057 hours and went to the main entrance at the north side, on Fifth Street. The company reported nothing showing. Engine 3, Squad 4, and Battalion Chief 1 arrived together on Fifth Street. Task Force 9 responded to Hope Street on the south side. Light Force 3 responded non-emergency, due to a broken siren, to Fifth Street. (A light force includes a pumper, a truck, and six members.)

The crew from Engine 10, followed by the crew from Engine 3, entered the building to investigate. They found light smoke on the third floor, and heavy smoke in one room on the northeast side of the library. From Hope Street, Engine 9 reported light smoke showing from the east end roof.

At 1111 hours, four more task forces were requested. Light Force 10, Task Force 11, Task Force 4, Engine 6, Task Force 15, and Engine 29 were dispatched. Battalion Chief Cate announced that the library incident command and the staging area would be on "Fifth Street, across from the library."

The Engine 10 firefighters were in the northeast corner of the building using a handline on the third floor. At 1114 hours, they requested help on the third floor and on the floor below. Then they backed out of the building and descended a metal ladder to the roof of a two-story wing at the east end of the building. They hoisted two 1 1/2" hose lines up to the roof from the Fifth Street side, then attacked the fire through a window, into an office and up a ramp into the seventh tier of the northeast stack of books.

Library security personnel directed Engine 9 firefighters to the fifth tier of the northeast stack. Finding fire, they used high-rise hose packs to connect to an interior standpipe. They staged an attack from the "fiction room."

Have students read through the incident and, as a group, chart the changes in the incident command. At each major change, have them draw an organizational chart identifying the IC through Divisions.

Start with a group and have them discuss the initial command structure. Then have the next group discuss their chart for the next change, and so on.

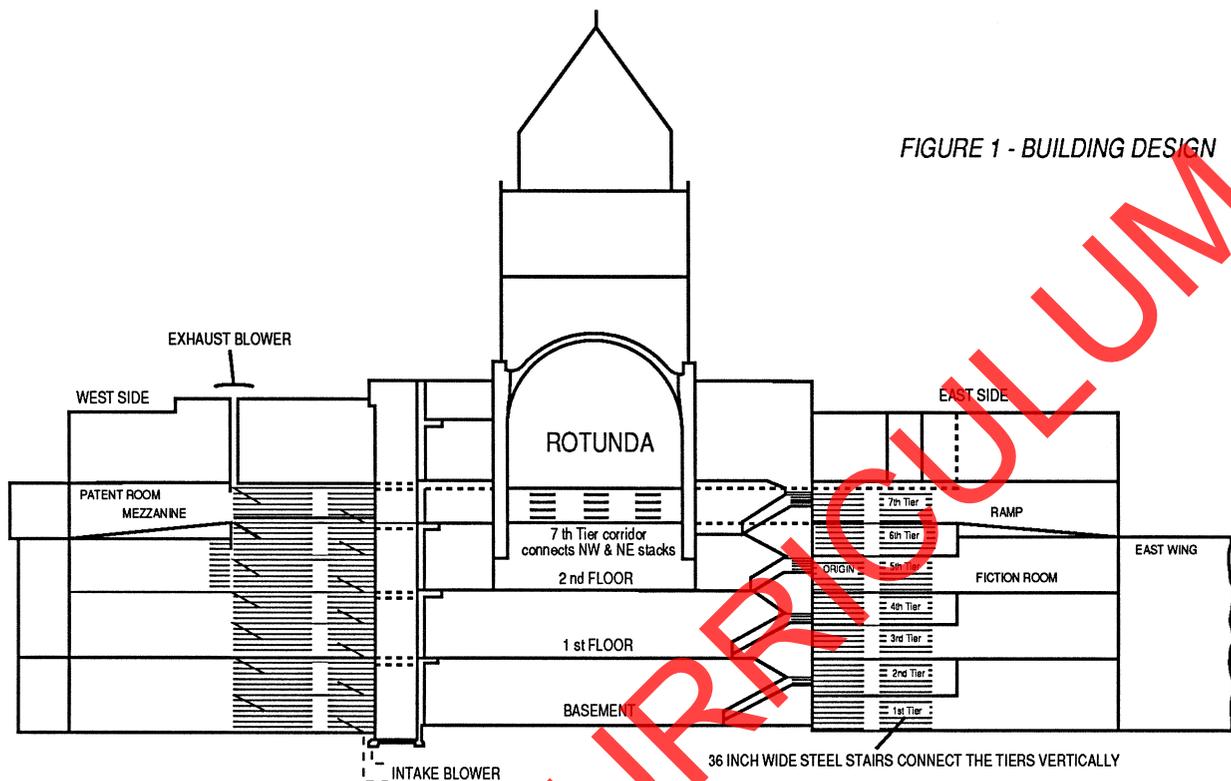


FIGURE 1 - BUILDING DESIGN

Engine 3 members checked the main alarm panel in the basement before climbing the stairs in the northeast stack. They left the stack area on the second floor to obtain a water supply, then began a fire attack up the stairs inside the stack to the sixth tier.

Ventilation Begins

Light Force 3 raised an aerial to the roof on the northeast corner, and began ventilation efforts. Light Force 9, unable to reach the building with an aerial from Hope Street, used ground ladders up to balconies on the south side. These firefighters, joined by Engine 11 firefighters, hoisted a 2-1/2" line up from the Hope street side. Proceeding to the fifth tier of the northeast stack, they used 1-1/2" and 2-1/2" lines to attack the fire up the stack stairs to the sixth tier.

Engine 203 took the hydrant on Fifth Street, and pumped into two standpipes situated on either side of the library's main entrance. Engine 9 took a hydrant on Hope Street and pumped into standpipes on the south side of the library. Engine 209 laid hose from Engine 9 to a hydrant on the southeast corner and supplied water to Engine 9. Meanwhile, Squad 4 proceeded to the second floor to help companies there advance lines up the stairs in the northeast stack area.

Incident command directed Light Force 4 to the third floor northeast stack area, where members hoisted two 1-1/2" lines up from Fifth Street. Finding no fire on the third floor, they went to the second floor roof of the east wing and joined Engin 10 firefighters in an attack from this location. Engine 11 members

STUDENT INFO

CASE STUDIES INSTR. INFO

hoisted a 2-1/2" supply line up from the Hope Street side, to supplement the interior standpipes on the second floor. Engine 11 then joined Task Force 9's fire attack in the northeast stack.

Attack from the South

Light Force 10 used the main entrance, climbed to the second floor and went up the stairs in the southeast stack to the seventh tier. These firefighters used 2-1/2" and 1-1/2" lines to attack the fire from the south side.

When Battalion 5's Chief Mello arrived, incident command requested him to reconnoiter outside the building. He found the south, west, and north sides clear, but light smoke was showing from the east end roof. Assigned to ventilation, Mello went to the third floor and tried to cross ventilate using windows and skylights.

Battalion 11's Chief Creasey, who was assigned to operations, went inside to direct firefighting operations in the northeast section of the building.

Light Force 4 raised its aerial to the roof on the northeast side. The crew then went into the building, where operations assigned this task force captain to operations inside the northeast stack.

Engine 4 firefighters laid a line from Fifth Street and Grand Avenue to the front of the library and supplied lines to members on the east end roof. These firefighters then joined Engine 6 firefighters in an attempt to bring lines down into the fire area from the third floor. Engine 6 had taken the hydrant at Fifth Street and Grand Avenue, to pump to Engine 4.

Firefighters on the third floor abandoned the attack from above when they discovered opposing lines coming in from the east wing roof and up the stack stairways from below the fire.

Arriving on the south side, Engine 29 provided a supply line to the second floor to supplement the standpipe system. Engine 29 was assigned "water control officer," to ensure that all standpipes were being supplied.

Task Force 15 arrived and raised its aerial to the roof on Fifth Street, west of the main entrance. These firefighters also were assigned to the fire attack in the northeast stack.

Salvage Companies Ordered

At 1120 hours, Bureau Commander Chief Anthony and Assistant Bureau Commander Chief Schnitker responded from headquarters. Realizing the need for salvage work, Chief Anthony ordered three fully staffed salvage companies. At 1127 hours, Chief Anthony took charge, assigned Battalion Chief Cate as plans chief, and requested five more battalion chiefs.

STUDENT INFO

CASE STUDIES INSTR. INFO

At about this time, fire attack teams on the sixth and seventh tiers in the northeast stack began to experience tremendous heat and heavy smoke. The intense heat prevented attack teams from advancing handlines. Heat build-up hampered firefighting efforts throughout operations. The library construction and complex design left no practical way to ventilate the involved areas. In addition, the building acted as a "heat sink," holding the heat long after the fire was out. These combined factors made penetration into involved areas extremely difficult. Access to the book tiers was limited to four, narrow, 36-inch-wide stairways and one window.

By 1130 hours, 22 fire companies, 8 command and staff officers, and 1 rescue ambulance were committed to the Los Angeles Central Library Fire. Battalion 7's Chief Allen arrived and established lobby control inside the main library entrance on Fifth Street.

Now the fire appeared to be contained in the northeast stack. The three major tasks were to provide ventilation, to rotate members of the fire attack teams, and to conduct salvage operations below the fire area.

Chief Lilly of Battalion 18 and Chief Dameron of Battalion 3 arrived and were assigned to logistics and salvage, respectfully.

Chief Mello's division continued efforts to ventilate. Windows and skylights were opened or broken out, with little or no positive effect. The 16-inch-thick reinforced concrete walls and 6-inch-thick reinforced concrete roof and floors, combined with the lack of vertical or horizontal passages, made ventilation almost impossible.

Salvage operations began on the first and second floors and in the first through fifth tiers in the northeast stack, beneath the fire area. Crews used polyethylene plastic and salvage covers to cover book shelves and furniture, and arranged sawdust to direct water out of the building.

When Division 1's Chief Rojo arrived, he was assigned operations and Chief Creasy was assigned fire attack. The incident was redesignated as the "Fifth Street I.C."

Chief Paramedic Fasana arrived at 1145 hours and established a medical division across from the library on Fifth Street, west of the main entrance. Medical operations were sheltered in the entrance to an underground garage.

The order to shut down the building's ventilation and electrical systems was made at 1156 hours. At about the same time, the first two firefighter injuries occurred: One suffered heat exhaustion and one had burned knees.

The department's supply and maintenance division was notified of the fire in progress, and Emergency Air 2 was ordered to respond with a full load of air cylinders. Chief Anthony directed that staff be notified of a major emergency in progress.

STUDENT INFO

CASE STUDIES INSTR. INFO

By noon, 24 fire companies, 10 command and staff officers, and 5 rescue ambulances had been assigned to the Central Library fire.

Fire in the Wall

At 1201 hours, Chief Mello reported fire in a third floor wall. His position was above the west end of a hall connecting the northeast and northwest stacks at the seventh tier level.

Firefighting efforts still were concentrated in the northeast stack area, where Chief Creasey reported that forces were experiencing serious problems caused by heat and smoke banking down due to restricted ventilation. Creasey also expressed concern about a possible flashover resulting from the tremendous heat build-up in the northeast stack.

Heat and smoke were so intense that crews had to be rotated every 15 to 20 minutes. Firefighters were taking a beating. Whenever they opened a nozzle, superheated steam drove them back.

From outside, dark smoke was visible at the center and west portions of the building. At 1225 hours, Engine 60 reported fire showing at the windows of a light shaft at the west end of the seventh tier corridor connecting the northeast and northwest stacks. This was close to the area where Chief Mello had reported fire in the wall. Chief Rojo directed an attempted fire attack at the light shaft. Light Force 3 and Task Force 35 personnel launched this attack.

More companies were ordered, including Emergency Air 88 and an air ambulance. Supply and maintenance delivered 13 blowers, 50 bags of sawdust, and 30 rolls of plastic to the scene.

Fire in the Northwest Stack

By about 1230 hours, fire had spread through the corridor connecting the northeast and northwest stacks. The sixth and seventh tiers of the northwest stack were involved in fire. Forces were directed up the stairs in the northwest stack, to attack the fire from below.

They encountered the same problems---extremely high temperatures, heavy smoke, narrow aisles and very limited access. Firefighters reported that the metal bookshelves were bright red from intense heat. Attack forces used 2-1/2" lines; meanwhile, they were protected by 1-1/2" lines. Little progress could be made, and fire attack teams had to be rotated every 10 to 15 minutes because of intense heat.

At 1241 hours, Chief Anthony requested an additional fire ground radio frequency and was assigned Channel 5. Chief Anthony gave Chief Engineer Donald Manning an update on operations. At about the same time, Chief Drummond, the fire marshal, arrived on the scene.

The medical division requested all available saline solution to the fire, for use in treating firefighters suffering burns and heat exhaustion. Assistant Chief Lucarelli and Battalion Chief DeFeo, both from supply and maintenance,

STUDENT INFO

CASE STUDIES INSTR. INFO

and were assigned logistics and lobby control, respectively. Chief Lily was reassigned to second floor staging and Chief Allen to the northeast stack area.

The ventilation division wielded sledgehammers and axes to breach the roof, but still could not open a hole large enough for effective ventilation.

Two hours into the fire, 34 fire companies, 12 command and staff officers, 1 air ambulance, and 7 rescue ambulances had been committed to the incident.

Change of Command

Between 1300 and 1330 hours, Chief Drummond became incident commander, and Chief Anthony took over operations, coordinating all firefighting. Fire had become visible in the patent room and the west end of the building. Fire now extended almost 300 feet across the entire second floor, having traveled from the northeast stack through the connecting hall into the northwest stack, and out the window on the west end.

Chief Anthony and Chief Rojo toured the building interior, assessing the situation and developing further attack plans. The decision was to alternate between the use of heavy streams to cool the fire and the use of an interior attack to extinguish it.

The need to open up walls and roofs with jackhammers became even more apparent. At 1314 hours, Heavy Utility 27 was requested, as well as a second helicopter for observation purposes.

The fire in the northeast stack area was being controlled. Only spot fires and deep-seated hot spots remained. But the connecting hallway, with temperatures of 2000°F to 2500°F, was untenable, even for firefighters in full protective gear.

Tiers Collapse

Far from being controlled, the fire in the northwest stack area raged until it led to the collapse of the sixth and seventh tiers. Chief Anthony called an operations planning meeting and divided the building into four quadrants, each including a stack and approximately one-fourth of the building. Placed in command of the quadrants were Chief Rojo, the northwest quadrant; Chief Vega, assisted by Chief Allen, the northeast quadrant; Chief Creasey, the southeast quadrant; and Chief Mello, the southwest quadrant.

At 1344 hours, forces were removed from the northwest quadrant so that Engine 29 and Truck 75 could begin a heavy stream attack. A portable monitor was used in the east end of the connecting hallway, to cool the area and to prevent heavy streams from pushing the fire back. Despite the portable monitor and the use of handlines, the connecting hall remained too hot to work in for several more hours.

STUDENT INFO

CASE STUDIES INSTR. INFO

The coordinated attack, alternating between exterior heavy streams and interior handlines, continued until about 1400 hours. By then, any fire that could be reached with exterior heavy streams had been knocked down.

An interior attack in the northwest stack resumed, using 2-1/2' and 1-1/2" handlines. Companies advanced from the patent room on the west, the southwest stack from the south and up the stairs of the northwest stack. Temperatures in the connecting hall still prevented an attack from the east. Companies continued to be rotated every 15 minutes.

The attack was maintained until utility forces could use jackhammers to ventilate the stack area through the third floor. Meanwhile, five task forces were requested to provide emergency relief to attack crews.

Chief Allen called a knockdown on the northeast stack, where fire had been stopped from entering the southeast stack. Between 1430 and 1500 hours, the fire attack continued in the northwest stack. Extreme heat and limited access slowed progress, but between 1500 and 1530 hours, all fire spread was stopped and the only remaining fire was limited to the northwest stack. Finally, 7 hours and 38 minutes after the alarm was received, a knockdown was declared in the Los Angeles Central Library fire at 1630 hours.

TRIPLE TRAGEDY IN DETROIT

Excerpted from FIRE COMMAND / July 1987

*by Thomas J. Klem, Director; Fire Investigations and Applied Research
Division*

BACKGROUND

Over the past 25 years, Detroit, like many other major cities, has experienced a substantial population decline. The current estimated population of the 139-square-mile city is 1.2 million, nearly half its one time peak. This has resulted in numerous abandoned commercial and residential properties throughout the city. The city began an aggressive program to remove the buildings that constitute a hazard, and since 1986 an estimated 3000 buildings have been demolished.

The building of fire origin once had housed the Motor City Wiping Company, but had been abandoned by its owners for years. Reportedly, the city had reclaimed the property in an attempt to collect back taxes and was involved in a legal process to have the building demolished. Citizens had lodged complaints about the building, and several "minor" fires had occurred in the building.

Access to the building could be gained easily, and the remaining clothing and cloth materials made the building appealing to the vagrants who frequented it. Apparently in an attempt to keep warm, they had set several small fires that required fire department response. Recognizing the potential danger, the first due fire companies updated their prefire plan for the building. During one of these inspections, a fire officer inside the poorly illuminated building was startled by an equally startled vagrant warming himself by a small fire.

At the time of the fire the temperature was 40°F, with winds out of the north/northwest at a velocity of 10 mph. The temperature dropped steadily throughout the afternoon; wind direction and velocity were relatively stable.

The Detroit Fire Department has 1265 firefighters and officers. The firefighting division is organized into nine battalions having 42 engines, 28 trucks and 6 squads.

THE BUILDINGS

The Motor City Wiping Cloth Company, at one time, occupied several interconnected buildings covering about one-half of the roughly 425-by-675-foot city block area defined by Hancock and Lawton Avenues, Jeffries Freeway and the railroad tracks to the south (see diagram). Along Jeffries Freeway, a narrow perpendicular access road separated this occupancy from the adjacent occupied warehouse to the south. A 25-foot common separation distance between buildings extended east for nearly 100 feet, at which point it opened into

Have students read through the incident and, as a group, identify the critical factors present in this fire. Have them develop an "Incident Action Plan," as the first arriving B/C. Realizing that the situation has already escalated to the problem of trapped firefighters.

Lead a discussion on what they would have done differently if they were the first-in captain.

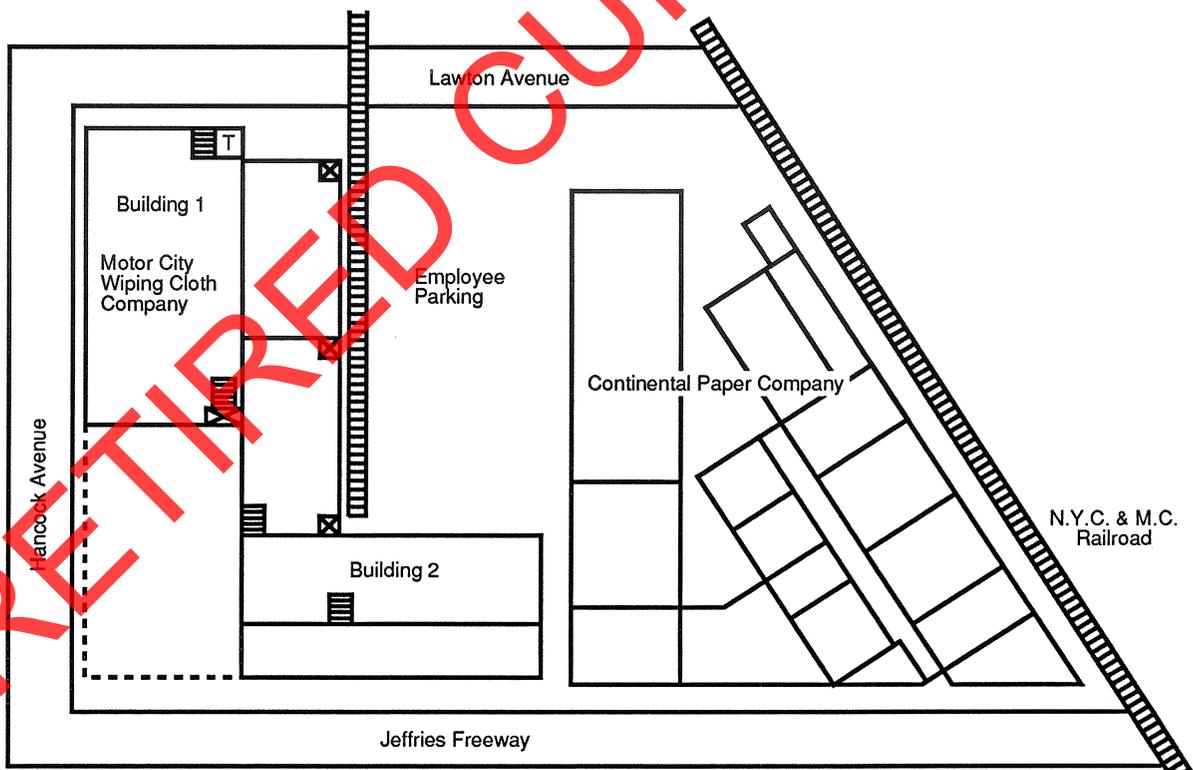
STUDENT INFO

CASE STUDIES INSTR. INFO

an unpaved area used as an employee parking area. The separation between the buildings at this location was approximately 170 feet. Employees of the Continental Paper Company and the company's distribution trucks used the access road. An abandoned railroad spur formerly used to ship and receive goods ran along the south side of the Motor City Wiping Cloth Company.

It appears that the interconnected structure may once have been two separate buildings. Building 1, at the northern most portion of the complex, was of a different construction type than Building 2 and had an independent water supply line for automatic sprinklers. In the approximately 20-foot space that once would have separated the buildings, several elevators, stairways and two access bridges joined all levels of the structures and allowed for a flow of goods between the buildings. To provide for fire segregation, fire doors were installed at openings between the buildings; however, it was reported that some were not in place at the time of the fire. During prefire planning, the firefighters were able to move freely, without obstruction, between the buildings. Post-fire observations of the intact Building 1 also revealed a lack of adequate horizontal and vertical fire barriers.

Building 1



STUDENT INFO

CASE STUDIES INSTR. INFO

Built in 1915, Building 1 was a four-story, fire-resistive structure with poured concrete floors and support columns, and a ceiling height on each floor of 12 feet. The building had numerous exterior openings on all sides and on each floor level, and window openings comprised more than 80 percent of the outside walls. There were signs of external and internal deterioration, portions of the structural concrete were crumbling, and reinforcing bars were exposed.

The contents of the 120-by-230-foot structure consisted of clothing and cloth materials in various states of arrangement and large, 4-by-8-foot wooden bins distributed throughout the building. It appears that the operation process once consisted of receiving the cloth materials from collection points, where they would be transferred to the large wooden bins. The materials then would be baled and stored within the complex until shipped to customers. Reportedly, four men were necessary for the relocating or moving the bales. Baled material ready for shipment could be relocated by using the two large service elevators. Bales could be transferred on service equipment installed between Buildings 1 and 2. The baled storage usually was stacked up to within 18 inches of the ceiling. Examination of the structure after the fire revealed that substantial amounts of the baled materials remained on all floor levels. Some bales had been split open and the cloth material was spread over the floor. The heat release rate would differ substantially between stacked bales and those that had been split open. Further, because of the arrangement of the wooden materials that comprised the bins, they would have a high heat release rate.

Fire protection for the building at one time had consisted of two 6-inch dry pipe automatic sprinkler systems. Because the building had been abandoned, the automatic sprinkler system was not in service. As noted, openings between buildings were protected with fire doors. However, some doors were missing, and there were unprotected floor to floor service elevator shaft openings.

Building 2

Determined to be the building of fire origin, Building 2 was an L-shaped, three-story structure with a basement that partially abutted Building 1 along its south side for a distance of approximately 225 feet long and nearly 85 feet wide. A 12-inch fire wall was provided on all floor levels approximately 30 feet from the front exterior wall. Openings in the wall at one time had been provided with fire doors. In this front portion of the building, stored materials were not as plentiful as beyond the fire wall.

The most common type of construction in this building was ordinary, although portions may have been qualified as mill or heavy timber construction. There was some evidence of unprotected noncombustible construction as well. The building had tongue-and-groove wood flooring over wood sub-flooring. Masonry fire walls, including the one previously mentioned, divided the building into four separate fire areas. Numerous window openings were provided on all levels and sides of the building, but many windows, especially on the south side, were broken or had been boarded up. This building, too, was used to store baled clothing and cloth materials. It also was provided with a dry pipe automatic sprinkler system, supplied by an 8-inch lead-in and an in-yard, 50,000-gallon, gravity storage tank. The system was inoperative at the time of the fire.

STUDENT INFO

CASE STUDIES INSTR. INFO

Continental Paper and Supply Company

The Continental Building complex was an occupied warehouse. The company supplied paper and some janitorial supplies throughout the metropolitan area. The northernmost portion of the building was separated from the abandoned warehouse by the 25-foot-wide access road. Because of the diagonal direction of the adjacent railroad line to the property, the 132,337-square-foot structure was pie-shaped. It consisted of 21 buildings of various sizes and shapes, which, it appears, could have been built at separate times. The construction types varied, ranging from unprotected noncombustible to heavy timber or mill construction. Fire walls segregated adjoining buildings from one another. It was impossible to determine the operating condition or the presence of fire doors due to the total destruction of the property.

All except three of the buildings were one- or two-story structures. The three northernmost buildings nearest to the abandoned warehouse were three-story. Most of the buildings had masonry exterior bearing walls. Those located along Jeffries Freeway had the entire front portion including window openings covered with metal siding. Numerous window openings were present along the entire 310-foot-long northern section of the building, and one-third of the roof over this section had been raised 7 feet to allow natural illumination on the third floor.

The building was fully protected by several dry pipe automatic sprinkler systems supplied from a single 6-inch lead-in from a main at Jeffries Freeway. A total of eight systems, ranging in size from 4 inches to 6 inches, with dry-pipe valves were distributed throughout the complex. It could not be determined in the system operated during the fire.

FIRE INCIDENT

At 3:05 p.m., the Detroit Fire Department's Alarm Headquarters received a report that smoke was issuing from an abandoned warehouse on Jeffries Freeway. Apparently an employee of the Continental Paper Company spotted the smoke from the employee parking lot and reported the fire. Smoke was not reported to be heavy at the time of discovery. However, due to the number of boarded-up windows, a severe fire could have been developing within the building.

The alarm center sounded Box 382 and dispatched Engines 10, 34, and 5, Ladder 9, Squad 4 and Battalion Chief 5. An officer and three firefighters manned each piece of equipment. Engine 10, Squad 4 and Ladder 9 arrived on the scene at approximately 3:10 p.m. Under standard attack procedures, an attack crew of six firefighters (two officers and four firefighters) in full protective gear was formed from the first arriving apparatus. This crew entered the building along Jeffries Freeway and went up to the third floor, where a "wisp" of smoke was seen. A masonry fire wall separated the front third of this side of the building from the remainder of the building. This front portion was relatively clear of large quantities of baled materials, so the crew moved freely along this area to the southwest portion, where a large opening existed in the fire wall.

STUDENT INFO

CASE STUDIES INSTR. INFO

An officer noticed three separate fires burning beyond the fire wall. He described two small fires near the fire wall and a third at some distance that involved seven to eight bales of material. The officer ordered a 1-1/2" attack line brought to the third floor. During the few moments that the attack line was being advanced and positioned, conditions within the building quickly deteriorated. The officer immediately recognized the danger and ordered everyone out of the building. The attack crew began to move quickly toward the stairway they had used to gain access to the third floor. Before they could locate the stairway, however, fire erupted through the opening in the fire wall, and products of combustion extended over their heads, out-racing them to the stairway. In the front portion of the building, visibility and tenability were lost rapidly, requiring the crew members to scramble for their lives.

Other firefighters outside on Jeffries Freeway saw the fire travel from window to window in seconds. Two of the trapped crew eventually were able to locate the stairway and to escape from the building without injury. The other four members were positioned at various window locations awaiting rescue. While a ground ladder was being raised to one crew member's position, severe heat forced another firefighter to release his grip, and he began to fall. During the fall, he apparently hit a projection from the building and landed on the ground head-first. The first firefighter came down the ground ladder to safety.

The two remaining crew members were in window openings at the northwest portion of the building. An alert pump operator from Engine 10 directed the wagon pipe into a window opening where one firefighter had taken refuge. This kept flames away from this crew member until the firefighters outside could raise a ground ladder to his position. While this rescue was in progress, the severe fire forced the remaining firefighter to jump from the building. His fall was broken by a large telephone cable, and he survived.

The first crew member who was forced to abandon his position at the window was an officer. He was transported to the hospital in an arson division squad car. At the hospital, the officer was pronounced dead a result of severe head and back injuries sustained in the fall. The remaining three crew members sustained burns, fractures and other injuries but survived the rapid progression of the fire.

Within 30 minutes of the initial attack, the fire progressed to five alarms, ultimately bringing 125 firefighters and 24 pieces of equipment to the scene. The fire in the Motor City Wiping Cloth Company became so severe that first responding apparatus had to be relocated away from the radiant heat.

At this time, all firefighting efforts at the building of origin reverted to heavy stream appliances. Because of the severe conditions within minutes of flashover, the fire spread from the building of origin to that portion of the Continental Paper Company that was within 25 feet.

Ignition of the Continental Building was first detected along its roof line. Firefighters used heavy appliances in an attempt to prevent the fire from extending into the paper and supply warehouse. A ladder pipe assembly was positioned in front of the Continental Building near the access road. Massive quantities of water effectively reduced fire spread in this portion of the building.

STUDENT INFO

CASE STUDIES INSTR. INFO

However, flying brands, strong winds and severe radiation ignited other portions of the building, especially the northernmost portion where access for large volume water application was limited. As fire spread into the paper company, firefighters positioned handlines around the entire perimeter of the warehouse. During the early stage of fire spread to this structure, firefighters took positions along the roof in an attempt to prevent extension. As the fire progressed, other firefighters were committed to similar positions. These attempts continued for nearly three hours after the initial fire alarm.

At approximately 6:00 p.m., an officer and two firefighters were working a handline on the third floor of the three-story, northernmost portion of the warehouse. They had taken the handline into the building and were positioning themselves close to a fire wall that subdivided this portion of the building. Apparently they were attempting to apply water beyond the fire wall onto the burning structure on the other side. One firefighter left the position to advance additional hose. At that moment, the fire wall collapsed and the two remaining men and resulted in the cave-in on the floors below. In the collapse, the two firefighters fell to the first floor and were buried under tons of rubble. The third firefighter was not injured.

In an attempt to prevent fire from engulfing the two buried men, as well as the fire personnel who had been summoned to the area, hose lines were applied to the area of the rubble. Firefighters dug through the rubble by hand for approximately 1-1/2 hours before they could extricate the downed officer and firefighter. They were transported to the hospital, where they were pronounced dead from injuries sustained in the collapse.

Eventually, the fire consumed the entire block, with the exception of Building 1, which sustained only minor fire damage at locations immediately exposed to the severe radiation from building 2.

Tragically, three firefighters were killed and ten others were injured battling this large group fire.

STUDENT INFO

INCIDENT COMMAND SYSTEM

- **PROVIDES FOR STANDARD PRINCIPLES UPON WHICH TO BUILD AN EFFECTIVE COMMAND STRUCTURE.**
- **PROVIDES STANDARD PROCEDURES FOR ESTABLISHING AND TRANSFERRING COMMAND.**
- **IDENTIFIES COMMAND RESPONSIBILITY AND OPTIONS.**
- **INSTITUTED WHENEVER THREE (3) OR MORE UNITS ARE INVOLVED. (1-9)**
 - **FORECAST FOR MULTIPLE COMPANIES BEYOND IC'S CONTROL**
 - **EXISTING ON-SCENE COMPANIES EXCEEDS IC'S CONTROL**
 - **COMPLEX INTERIOR OPERATIONS**
 - **FRAGMENTED TACTICAL POSITIONS**
 - **CLOSE COMPANY CONTROL AND COORDINATION**
- **ICS RECOMMENDED SPAN-OF-CONTROL IS FIVE (5) COMPANIES. (1-10)**

STUDENT INFO

ICS POSITIONS

- **INCIDENT COMMAND - Incident Name**
- **STAGING AREAS - Geographical Name**
- **BRANCHES - Numerical or Functional**
- **DIVISIONS - Alphabetical, Geographical, Numerical**
- **GROUPS - Functional only, Operates on the Entire Fireground. (1-10)**
- **ICS POSITIONS CAN BE FILLED BY CHIEF OFFICERS, COMPANY OFFICERS, OR ANY DEPARTMENT OR CIVILIAN PERSONNEL AS DESIGNATED BY THE IC. (1-10)**

STUDENT INFO

ESTABLISHING COMMAND

- **UNIT IDENTIFICATION**
- **REPORT ON CONDITIONS**
 - **BUILDING DESCRIPTION** - Occupancy, Size, Arrangement, Construction, and Correct Address
 - **OBVIOUS CONDITIONS** - Nothing Showing, Smoke Showing, Fire Showing
- **DETERMINATION OF RESOURCES NEEDED**
- **OPERATING MODE** (1-11)
 - **INVESTIGATING** - Personnel utilize portable radio and investigate conditions.
 - **ATTACK** - Situations which dictate immediate action and require the officer to commit themselves to the interior attack. (1-12)
 - **COMMAND** - Situations that call for principally command actions by virtue of size, complexity or potential.
- **ASSIGNMENT OF RESPONDING UNITS**

STUDENT INFO

TRANSFER OF COMMAND (1-12)

- **MEET FACE-TO-FACE**
- **GENERAL SITUATION STATUS**
- **DEPLOYMENT AND ASSIGNMENTS OF OPERATING COMPANIES**
- **APPRAISAL OF ADDITIONAL RESOURCES NEEDED**

PRIMARY STAGING

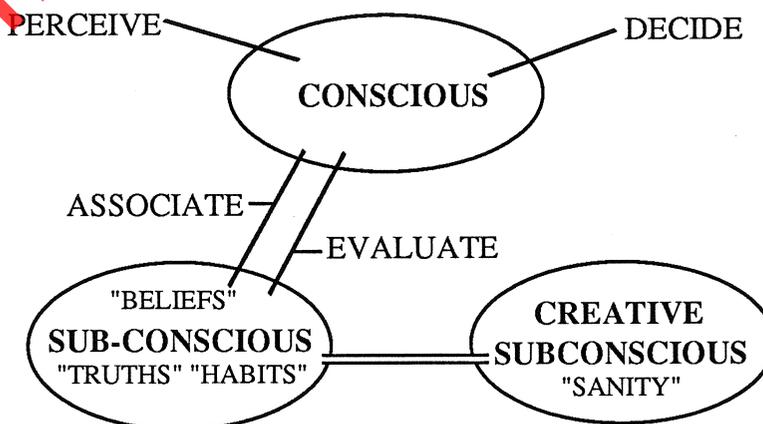
- **APPLIES TO INITIAL ALARM ASSIGNMENTS (1-12)**
- **FIRST-IN COMPANY SETS UP AT BEST OPERATING POSITION**
- **TRUCK COMPANY TAKES POSITION TO BEST UTILIZE THEIR EQUIPMENT (1-12)**
- **CHIEF OFFICER RESPONDS IN TO TAKE OVER COMMAND IF NECESSARY**
- **ALL OTHER UNITS STAGE IN DIRECTION OF TRAVEL, UNCOMMITTED, ONE BLOCK AWAY**
- **ONLY EXCEPTION - FIRST-IN COMPANY IN ATTACK MODE OVERRIDES UNIT STAGING (1-13)**

STUDENT INFO

ABSENCE OF COMMAND

- INAPPROPRIATE ACTIONS
- LACK OF COMMAND AND CONTROL
- LACK OF COORDINATION
- POOR PLANNING
- DISORGANIZATION
- BREAKDOWN IN COMMUNICATIONS
- UNSAFE ACTIONS (2-1)

MENTAL PROCESS



STUDENT INFO

DECISION MAKING

- **WILLING TO MAKE DECISIVE DECISIONS**
- **BASED ON FACTS NOT ASSUMPTIONS**
- **OPEN AND FLEXIBLE APPROACH**
- **DELEGATION**
- **STANDARD PROCEDURES**
- **PRIORITIZATION**
- **OPEN ENDED AND EXPANDABLE ABLE TO BUILD UPON**
- **FORECAST CONDITIONS**
- **UTILIZES DELEGATED INFORMATION MORE THAN VIEWED**
- **TIMELY, ACCURATE, LOCALIZED, SPECIFIC, & DIRECTED**
- **INCREASES OPTIONS BY ACTING (2-4)**
- **DOES NOT EXCEED MENTAL CAPACITY**

STUDENT INFO

COMMAND AND CONTROL

- **CONTROL DESIGNED WITH RESULTS IN MIND**
- **SELECTIVE DEMOCRACY**
- **MANAGES STRESS, DIVIDES UP PROBLEM(2-4)**
- **REQUIRES DECISIONS BY THOSE RESPONSIBLE**
- **NOT DISTRACTED BY VISUAL CONDITIONS**
- **SITUATION SEEN IN LABORATORY TERMS (2-4)**
- **SITUATION IS ENEMY ORIENTED**
- **STATIONARY COMMAND**
- **COMMAND TIME TRADE-OFF (2-4)**
- **LONE RANGER MANAGEMENT**
- **DELEGATES DETAILS**
- **MID-POINT MANAGEMENT, ASSUMES ACTIONS ALREADY TAKEN (2-5)**
- **ACTIONS, RESULTS OF CONSCIOUS DECISIONS**
- **SCARCE RESOURCE MANAGEMENT (2-5)**

STUDENT INFO

EVALUATION AND REVIEW

- **RESULTS / PERFORMANCE ORIENTED (2-5)**
- **INTEGRATION IN MANAGEMENT APPROACH**
- **WILLING TO MAKE BOTH STRATEGIC AND TACTICAL DECISIONS**
- **UTILIZES PROGRESS REPORTS FOR REVISION OF ACTION PLAN**
- **ACCEPTS MISTAKES NOT SITUATIONS**
- **EXPECTATIONS EQUAL TO ABILITY**
- **DEVELOPS ALTERNATIVE ACTION PLAN**
- **IDENTIFIES NATURE AND RATE OF DETERIORIZATION**
- **WILLING TO REDEPLOY**
- **POSITIVE AND SUPPORTIVE LEADERSHIP**
- **REPORTS ARE RELATIVE TO REPORTERS ABILITY AND OPERATIONAL AREA**

STUDENT INFO

INCIDENT COMMANDER PERSONAL CHARACTERISTICS

- **ABILITY**
- **TRUST, POWER, RESPECT AND CONFIDENCE**
- **WILLING TO MANAGE NOT ACT**
- **CONTROLS TEMPER**
- **HIGH PSYCHOLOGICAL ENDURANCE**
- **SANITY MAINTENANCE - FIRE/CLINICAL,
SELF/PHILOSOPHICAL (2-7)**
- **GOOD LISTENER**
- **RISK TAKER**
- **RESOURCE ALLOCATOR**
- **SETS POSITIVE EXAMPLE**
- **REALIZES LIMITATIONS**
- **DOES THE RIGHT THING**
- **ACCEPTS RESPONSIBILITY FOR MISTAKES**

STUDENT INFO

FIREGROUND FACTORS

- **EIGHT (8) BASIC CATEGORIES**
 - **BUILDING**
 - **FIRE**
 - **OCCUPANCY**
 - **LIFE HAZARD**
 - **ARRANGEMENT**
 - **RESOURCES**
 - **ACTIONS**
 - **SPECIAL CIRCUMSTANCES (3-3)**
- **KEYS TO FIREGROUND MANAGEMENT ARE:**
 - **WHICH ARE CRITICAL TO THIS INCIDENT**
 - **WHAT IS THEIR PRIORITY**

STUDENT INFO

FIREGROUND FACTORS (Cont.)

- **THREE (3) WAYS TO GATHER INFORMATION**
 - **VISUAL - WHAT THE IC CAN SEE (3-3)**
 - **RECONNAISSANCE - WHAT OTHERS CAN SEE (3-3)**
 - **PRE-FIRE PLANNING - FORECASTING OF POSSIBLE CRITICAL FACTORS (3-3)**
- **FIXED FACTORS (3-4)**
 - **WEATHER**
 - **OCCUPANCY**
 - **TYPE OF CONSTRUCTION**
 - **SIZE OF THE BUILDING**

THE MAJOR ACTIVITY ON THE FIREGROUND IS THE PROCESS OF REDUCING THE SEVERITY OF CRITICAL FACTORS. (3-4)

STUDENT INFO

STRATEGICAL CONSIDERATIONS

- **THREE (3) TYPES OF OVERALL STRATEGY**
 - **OFFENSIVE**
 - **DEFENSIVE**
 - **MARGINAL - OFFENSIVE/DEFENSIVE, DEFENSIVE/OFFENSIVE**
- **CRITERIA FOR DECISION**
 - **FIRE EXTENT AND LOCATION**
 - **FIRE EFFECT**
 - **SAVABLE OCCUPANTS**
 - **SAVABLE PROPERTY**
 - **ENTRY AND TENABILITY**
 - **VENTILATION PROFILE**
 - **RESOURCES (3-5)**
- **SUFFICIENT RESOURCES MUST BE ON-SCENE IN ORDER FOR AN OFFENSIVE ATTACK TO BE AN OPTION. (3-5)**

STUDENT INFO

TACTICAL CONSIDERATIONS

- **PRIORITIES - IN ORDER OF CONSIDERATION (3-6)**
 - **RESCUE** - Activities required to protect occupants.
 - **FIRE CONTROL** - Activities required to prevent the forward progress of the fire.
 - **PROPERTY CONSERVATION** - Activities required to stop or reduces additional property damage.
- **ALL CLEAR - RESCUE IS COMPLETED AND PRIMARY SEARCH ACCOMPLISHED. (3-6)**

RESCUE

- **CATEGORY OF VICTIMS**
 - **ALREADY OUTSIDE** - Those trying to get outside through conventional means as well as those already outside. (3-7)
 - **TRYING TO GET OUTSIDE** - Experiencing difficulties in their attempt to save themselves. (3-7)
 - **STILL INSIDE** - Unaware, Trapped, Overcome, or Otherwise unable to save themselves.

STUDENT INFO

RESCUE (Cont.)

- **ALL INITIAL FIREGROUND OPERATIONS MUST BE STRUCTURED AROUND THE PRIMARY SEARCH UNTIL AN "ALL CLEAR" IS RECEIVED. (3-8)**
- **UNTIL THE PRIMARY SEARCH IS COMPLETED AND AN "ALL CLEAR" IS RECEIVED, THE IC CANNOT PROCEED TO THE NEXT TACTICAL PRIORITY OF FIRE CONTROL. (3-8)**
- **BASIC APPROACH BY STAGE OF FIRE**
 - **NOTHING SHOWING - No life hazard, "All Clear" still required.**
 - **SMOKE SHOWING - Fire control efforts extended simultaneously with rescue operations.**
 - **FULLY INVOLVED - Immediate entry and primary search impossible, secondary search.**
- **LIFE SAFETY IS THE MOST URGENT REASON FOR CALLING ADDITIONAL ALARMS. (3-9)**
- **RESCUE OPERATIONS ARE THE MOST DIFFICULT AND DESPERATE OF ALL FIREGROUND ACTIVITIES. (3-9)**

STUDENT INFO

FIRE CONTROL

- **BASIC OFFENSIVE PLAN**
 - TAKE COMMAND
 - FIRST LINE - Fast aggressive interior attack.
 - DO PRIMARY SEARCH
 - PROVIDE SUPPORT ACTIVITIES
 - SECOND LINE - Backup first or cover the rear.
 - PROVIDE CONTINUOUS WATER SUPPLY
 - QUICKLY EVALUATE SUCCESS AND REACT
 - OPERATING POSITION - Interior from the unburned side.
- **BASIC DEFENSIVE PLAN**
 - TAKE COMMAND
 - EVALUATE FIRE SPREAD - Write off loses.
 - IDENTIFY KEY TACTICAL POSITIONS - Save unburned.
 - PRIORITIZE FIRE STREAMS
 - PROVIDE ADEQUATE SUPPLY OF PUMPED WATER
 - MAKE RAPID DETERMINATION OF RESOURCES
 - OPERATING POSITION - Outside, protecting exposures.

STUDENT INFO

FIRE CONTROL (Cont.)

- **FIRST ATTACK MUST GO BETWEEN THE VICTIMS AND THE FIRE. (3-11)**
- **LOCATION/POSITION OF ATTACK - How are you going to gain access for offensive attack or apply fire streams for defensive attack?**
- **SIZE OF ATTACK - Number of hose lines, size, and personnel needed to operate.**
- **SUPPORT FUNCTIONS - Each individual attack requires its own set of support activities; forcible entry, ventilation, etc.**
- **TIME OF ATTACK - Timing is crucial to safe and successful operations. The bigger the attack, the longer it takes to mount it. (3-11)**
- **"CANDLE-MOTH" SYNDROME - Lacking direction, fire companies will lay hose and apply water utilizing the fastest, shortest, and most direct route. (3-11)**
- **CHANGE OFFENSIVE TO DEFENSIVE ATTACK**
 - **ANNOUNCE AS EMERGENCY TRAFFIC (3-12)**
 - **DON'T LET INTERIOR CREWS CHANGE YOUR MIND (3-12)**

STUDENT INFO

PROPERTY CONSERVATION

- **CONSISTS OF:**
 - **STOPPING ADDITIONAL LOSS**
 - **MAKING SURE FIRE IS OUT**
 - **DETERMING CAUSE AND ORIGIN**
 - **RETURNING OCCUPANCY TO USE**
- **PRIMARY DAMAGE**
 - **PRODUCTS OF COMBUSTION - Flame, Heat, and Smoke. (3-12)**
- **SECONDARY DAMAGE**
 - **RESCUE AND FIRE CONTROL - Ventilation, water application, etc. (3-12)**

ALL FIREGROUND MEMBERS ARE EXPECTED TO PERFORM IN A MANNER THAT CONTINUALLY REDUCES LOSS DURING FIRE OPERATIONS.

STUDENT INFO

FIRE STREAM MANAGEMENT

- **SIZE OF INITIAL LINE SHOULD BE COMENSURATE WITH INCIDENT SIZE AND MAGNITUDE (3-13)**
- **LIFE HAZARDS - PLACE FIRST LINE BETWEEN FIRE AND VICTIMS, ESCAPE ROUTES (3-13)**
- **NO LIFE HAZARDS - PLACE FIRST LINE BETWEEN THE FIRE AND THE MOST SEVERE EXPOSURE (3-13)**
- **PLACE SECOND LINE TO BACKUP FIRST OR PROTECT SECONDARY EGRESS (3-13)**
- **PLACE ADDITIONAL LINES TO SUPPORT ATTACK POSITIONS (3-13)**
- **OFFENSIVE ATTACK - LINES INSIDE (3-13)**
- **DEFENSIVE ATTACK - LINES OUTSIDE (3-13)**
- **DO NOT COMBINE EXTERIOR AND INTERIOR ATTACKS (3-13)**

STUDENT INFO

APPARATUS PLACEMENT

- **GOOD TRUCK LOCATIONS HAVE PRIORITY OVER ENGINE SPOTS (3-14)**
- **PLACE EVERY PIECE OF APPARATUS TO TAKE MAXIMUM ADVANTAGE OF ITS CAPABILITIES (3-14)**
- **UTILIZE ONLY THE COMPANIES THAT ARE REQUIRED (3-14)**
- **INCREASE FLEXIBILITY BY MAINTAINING A RESERVE OF UNCOMMITTED COMPANIES IN STAGING (3-14)**
- **ACCESS MUST ALWAYS BE A PRIMARY CONSIDERATION (3-14)**

THE IC MUST TAKE STRONG CONTROL AT THE OUTSET, INDEPENDENT ACTION MAY RESULT IN LOST OPPORTUNITIES. YOU MAY ONLY GET ONE CHANCE AT THE PRIME LOCATIONS THAT MAXIMISE THE UNIQUENESS OF PARTICULAR PIECES OF APPARATUS.

STUDENT INFO

ACTION PLAN

- **CRITICAL FACTORS**
- **STRATEGICAL CONSIDERATIONS**
 - **OVERALL STRATEGY**
 - **STRATEGICAL GOALS**
 - **TACTICAL OBJECTIVES**
- **ICS POSITIONS**
- **TACTICAL CONSIDERATIONS**
 - **TACTICAL OBJECTIVES**
 - **TASK**
- **TACTICAL CONSIDERATIONS**

STUDENT INFO

FLAME SPREAD

RATE OF BURNING

- **AVAILABILITY OF FUEL AND AIR**
- **TEMPERATURE OF FUEL AND AIR**

PREDICTION OF:

- **MATERIAL IGNITABILITY**
- **FUEL LOAD**
- **KEY ENVIRONMENTAL FACTORS**

OPEN PLANNING (4-1)

- **FLEXIBLE INTERIOR SPACE**
- **FEW INHERENT BARRIERS**
- **PARTITIONS CREATE TOXIC PRODUCTS**

STUDENT INFO

SMOKE MOVEMENT

FOLLOWS RULES DIFFERENT FROM THOSE GOVERNING FIRE SPREAD (4-1)

RESPONSIBLE FOR AT LEAST 80% OF FIRE RELATED DEATHS (4-2)

AS OXYGEN LEVEL DECREASES, TOXICITY OF SMOKE INCREASES (4-2)

PRESSURE SANDWICHES ARE CREATED BY HVAC SYSTEMS, ALLOWING THE FIRE AREA TO EXHAUST NEGATIVE PRESSURE WHILE SURROUNDING AREAS ARE IN POSITIVE PRESSURE (4-4)

NON-COMBUSTIBLE BUILDINGS

THE BUILDING ITSELF WILL NOT BURN, BUT IS LIKELY TO COLLAPSE

ALTHOUGH STRUCTURAL COMPONENTS WILL NOT BURN, THE CONTENTS WILL

STUDENT INFO

CONSTRUCTION

- **UNPROTECTED STEEL**
- **LIGHTWEIGHT ROOF CONSTRUCTION**

INITIAL ATTACK

- **BUILDING MAY COLLAPSE WITHIN 10 TO 15 MINUTES**
- **CONSIDER THE USE OF MASTER STREAMS EARLY**

BALLOON-FRAME CONSTRUCTION

PRIMARY CAUSE OF FIREGROUND DIFFICULTIES IS RAPID AND UNNOTICED FIRESREAD IN THE VOID SPACES (4-8)

BE AWARE OF POSSIBLE FIRE SPREAD TO HIDDEN DORMERS AND INACCESSIBLE TOWERS OR ATTIC SPACES

MODERNIZED VICTORIANS MAY HAVE DROP CEILINGS

STUDENT INFO

STANDARD OPERATING PROCEDURES

- **STAGE ADDITIONAL COMPANIES**
- **RECOGNIZE AND UNDERSTAND THE PROBLEMS CREATED BY BALLOON-FRAME CONSTRUCTION**
- **BEWARE OF HIDDEN ALTERATIONS**
- **CHECK FOR SPREAD TO VOID SPACES**
- **OPEN UP AND VENTILATE IMMEDIATELY**
- **HAVE HANDLINES READY**
- **BE AGGRESSIVE**

STUDENT INFO

FIREFIGHTER SURVIVAL

PRIMARY RESPONSIBILITY OF THE INCIDENT COMMANDER

CAN BE REDUCED IF PROFESSIONALISM INCREASES

FLASHOVER (5-2)

- **SIGNIFICANT FREE-BURNING**
- **HIGH TEMPERATURE**
- **FIREFIGHTER FORCED TO STAY LOW**
- **VAPORS BURNING OR FLASHING ALONG THE CEILING**

BACKDRAFT (5-3)

INSIDE THE STRUCTURE

- **HEAVY COLUMN OF HOT DENSE SMOKE**
- **WHISTLING SOUND OF INCOMING AIR**
- **GRAYISH YELLOW SMOKE**
- **SICKLY OR INTERMITTENT FLAME**

STUDENT INFO

OUTSIDE THE STRUCTURE

- **HOT GLASS OR DOORS**
- **WARM, GRAYISH YELLOW SMOKE**

BUILDING COLLAPSE

**PRIMARY CONCERN OF THE INCIDENT
COMMANDER**

LACK OF PROTECTIVE EQUIPMENT

EVERYONES RESPONSIBILITY

NO EXCUSE

PROFESSIONALISM (5-5,6)

STRONG ORGANIZATIONAL CONCEPT

STANDARD OPERATIONAL PROCEDURES

COMMAND RESPONSIBILITY

**THE IC MUST MANAGE TO CONTROL THE
INHERENT NATURE OF AGGRESSIVE
FIREFIGHTERS**

OVERHEAD
TRANSPARENCY
MASTERS

RETIRED CURRICULUM

ICS POSITIONS

- INCIDENT COMMAND - Incident Name
- STAGING AREAS - Geographical Name
- BRANCHES - Numerical or Functional
- DIVISIONS - Alphabetical, Geographical, Numerical
- GROUPS - Function Only, Operate on the Entire Fireground

NOTE: POSITIONS CAN BE FILLED BY ANYONE, NOT JUST BY RANK

INCIDENT COMMAND SYSTEM

- Standard Principles upon which to Build an Effective Command Structure
- Standard Procedure for Establishing and Transferring Command
- Identifies Command Responsibility and Options
- Instituted Whenever Three or More Units are Involved

INCIDENT COMMAND SYSTEM

- Multiple Company Operations
- Span of Control (FIVE TO ONE)
- Complex Interior Operations
- Fragmented Tactical Positions
- Close Company Control & Coordination

OPERATING MODES

- **INVESTIGATING** - Personnel Utilize Portable Radio & Investigate Conditions
- **ATTACK** - Situations which Dictate Immediate Action & require the Officer to commit themselves to the Interior Attack
- **COMMAND** - Situations that call for Principally Command Actions by Virtue of Size, Complexity or Potential

PRIMARY STAGING

- Initial Alarm Assignment
- First-in Engine sets up at Best Operating Position
- Truck takes Position to Best Utilize Equipment
- Chief in Position to Assume Command
- All Others, Stage One Block Away, Direction of Travel

EXCEPTION - Pass Command or First in Officer Overrides

ABSENCE OF COMMAND

- Inappropriate Actions
- Lack of Command & Control
- Lack of Coordination
- Poor Planning
- Disorganization
- Breakdown in Communications
- Unsafe Actions

DECISION MAKING

- Willing to be Decisive
- Based on facts
Not Assumptions
- Open & Flexible Approach
- Delegation
- Standard Operating Procedures
- Prioritization

DECISION MAKING

- Open Ended - Expandable
- Forecast Conditions
- Utilizes Delegated Information more than Viewed
- Timely - Accurate - Localized - Specific - Directed
- Increases Options by Acting
- Does Not Exceed Mental Capacity

COMMAND & CONTROL

- Control Designed with Results in Mind
- Selective Democracy
- Manages Stress, Divides Problem
- Requires Decisions by Those Responsible
- Not Distracted by Visual Conditions
- Situation Seen in Laboratory Terms
- Situation is Enemy Oriented

COMMAND & CONTROL

- Stationary Command
- Command Time Trade Off
- Lone Ranger Management
- Delegates Details
- Mid Point Management - Assumes Already Taken
- Actions - Results of Conscious Decisions
- Scarce Resource Management

EVALUATION & REVIEW

- Results / Performance Oriented
- Integration in Management Approach
- Willing to Make Both Strategic & Tactical Decisions
- Utilizes Progress Reports for Revision of Action Plan
- Accepts Mistakes *not* Situations
- Expectations Equal to Ability

EVALUATION & REVIEW

- Develops Alternative Action Plans
- Identifies Nature & Rate of Deteriorization
- Willing to Redeploy
- Positive & Supportive Leadership
- Reports are Relative to Reporters Ability & Operational Area

INCIDENT COMMANDER PERSONAL CHARACTERISTICS

- Ability
- Trust - Power - Respect - Confidence
- Willing to Manage Not Act
- Controls Temper
- High Psychological Endurance
- Sanity Maintenance: Fire - Clinical;
Self - Philosophical

INCIDENT COMMANDER PERSONAL CHARACTERISTICS

- Good Listener
- Risk Taker
- Resource Allocator
- Sets Positive Example
- Realizes Limitations
- Does the Right Thing
- Accepts Responsibility for Mistakes -
Especially in Critiques

FIREGROUND FACTORS

- Building
- Fire
- Occupancy
- Life Hazard
- Arrangement
- Resources
- Actions
- Special Circumstances

KEYS TO FIREGROUND MANAGEMENT:

- Which are Critical
- What is Their Priority

FIREGROUND FACTORS

THREE WAYS TO GATHER INFORMATION

- Visual - What the IC can See
- Reconnaissance - What Others can See
- Pre-Fire Planning - Forecasting of Possible Factors

FIREGROUND FACTORS

FIXED FACTORS

- Weather
- Occupancy
- Type of Construction
- Size of the Building

The Major Activity of the Fireground is the Process of reducing the Severity of Critical Factors

STRATEGICAL CONSIDERATIONS

- Offensive
- Defensive
- Marginal - Offensive / defensive:
Defensive / Offensive

RETIRED CURRICULUM

STRATEGICAL CONSIDERATIONS

CRITERIA FOR DECISION

- Fire Extent & Location
- Fire Effect
- Savable Occupants
- Entry & Tenability
- Ventilation Profile
- Resources

Sufficient Resources Must be on Scene in
Order for an Offensive Attack to be an
Option

TACTICAL CONSIDERATIONS

PRIORITIES - IN ORDER OF CONSIDERATION

- **RESCUE** - Protect or Removing Occupants
- **FIRE CONTROL** - Preventing the Forward Progress of the Fire
- **PROPERTY CONSERVATION** - To Stop or Reduce Additional Property Damage

RESCUE

CATEGORY OF VICTIMS

- Already Outside
- Trying to get Outside
- Still Inside

All Initial fireground Operations Must be Structured Around the Primary Search Until an "All Clear" is Received

Until a Primary search is Completed and "All Clear" is Received, IC Cannot Proceed to next Tactical Priority - Fire Control

RESCUE

Life Safety is the Most Urgent Reason for Calling Additional Alarms

- Most Difficult & Desperate of all Fireground Activities
- Safety of Firefighters a Prime Consideration
- "Big Picture" not Ricky Rescue
- Team - Plan - Communications - Alternatives
- Be Decisive or Options Diminish

FIRE CONTROL

BASIC OFFENSIVE PLAN

- Take Command
- First Line - Fast Aggressive Interior Attack
- Primary Search
- Provide Support Activities
- Second Line - Backup First & Rescue
- Provide Continuous Water Supply
- Quickly Evaluate Success & React
- Operating Position - Interior from Unburned Side

FIRE CONTROL

BASIC DEFENSIVE PLAN

- Take Command
- Evaluate Fire Spread
- Identify Key Tactical Positions
- Prioritize Fire Streams
- Provide Adequate Supply of Water
- Rapid Determination of Resources
- Identify Operating Positions

RETIRED CURRICULUM

FIRE CONTROL

- First Line Between Victims & Fire
- Attack Lines Between Fire & Where its Going
- Unburned to Burned Direction
- Attack to Drive Fire Out of Building
- Support Attack - Entry, Ventilation
- Bigger the Attack, Longer Time to Set Up
- Avoid Candle-Moth Syndrome
- Offensive to Defensive, use "EMERGENCY TRAFFIC"

PROPERTY CONSERVATION

- Stopping Additional Loss
- Making Sure Fire is Out
- Determine Cause & Origin
- Return Occupancy to Use
- Primary Damage - Fire / Smoke
- Secondary Damage - Rescue & Fire Control

All Members are Expected to Operate in a Manner to Continually Reduce Loss

FIRE STREAM MANAGEMENT

- Size Equal to Magnitude & Potential
- Life Hazard First
- Between Fire & Where its Going
- Second Line Backup & Protect Exits
- Support Attack Positions
- Offensive - Inside
- Defensive - Heavy Lines Outside

Do Not Combine Interior & Exterior

APPARATUS PLACEMENT

- Truck Locations Have Priority
- Take Advantage of Capability
- Utilize Only Companies as Required
- Increase Flexibility by Staging
- Access Always a Primary Consideration

IC Must Take Strong Control at the Outset,
You May Only get One Chance at Optimum
Locations

ACTION PLAN

- Critical Factors
- Strategic Considerations: Overall - Goals
- ICS Positions
- Tactical Considerations: Objectives - Tasks
- Resources
- Timeframe

FLAME SPREAD

- Rate of Burning
- Fuel -Oxygen - Temperature
- Predictions: Fuel Load - Ignitability - Toxic
- Fire Spread: Vertical - Interior - Barriers - Arrangement of Fuel

TRANSFER OF COMMAND

- Meet Face to Face
- General Situation status
- Deployment & Assignments of Operating Companies
- Appraisal of Additional Resources Needed