The Maryland Fire and Rescue Institute of the University of Maryland is the State’s comprehensive training and education system for all emergency services.

The Institute plans, researches, develops, and delivers quality programs to enhance the ability of emergency service providers to protect life, the environment, and property.
Lesson 1-2: Program Orientation

Student Performance Objective

- Given information from discussion, handouts, and reading materials, the student will be able to describe the course expectations, structure, schedule, and assignments.

Overview

- Activity 1-2-1: Student Introductions and Expectations
- Program Explanation
- Taxonomy of Educational Objectives
- Individual and Group Research Projects
- Job Performance Requirements
- Group Work
- Peer Evaluations
- Activity 1-2-2: Team Building; Activity 1-2-3: Introduction to Blue County Valley; Activity 1-2-4: Final Project

Activity 1-2-1

- Student introductions and expectations
  - Name
  - Organization
  - Title
  - Years of experience
  - Positions held
  - Expectations from the class

Program Explanation

- Selection criteria
  - Certified FO II
  - Documentation of training

Are YOU committed to successful completion of the course?

Program Explanation

- Performance levels
  - The Fire Officer III course
    - Meets the NFPA 1021 standard, Chapter 6
    - Requires strong written and verbal skills
    - Assumes proficiency at the college level or post-graduate level
    - Is academically and personally challenging
Program Explanation

- Development strategy
  - Promotes equity, trust, and academic performance
  - Presents a broad perspective on fire service administration and professional development

- Benefits
  - Develops effective management and leadership skills
  - Cultivates team development

Program Explanation

- The course exposes students to a range of issues and skills
  - Creativity, innovation, and marketing
  - Organizational dynamics
  - Safety and compliance issues
  - Tactical problem-solving

Taxonomy of Educational Objectives

Cognitive

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation

Writing
Organized Speech
Problem-solving
Judgments
Conclusions

Most Important Levels

Affective

Origination
Receiving
Responding

Adaptation
Complex Overt Response
Organization
Valuing

How the operational effectiveness of a chief officer is determined

Psychomotor

Characterization by Value
Perception
Set
Mechanism
Guided Response

Individual and Group Research Projects

- Requirements
  - Submit work in one electronic copy and one electronic copy
  - Make additional electronic copies to share with other groups
  - Be sure to include a PowerPoint presentation

Requirements

- Submit work in one electronic copy and one electronic copy
- Make additional electronic copies to share with other groups
- Be sure to include a PowerPoint presentation
Individual and Group Research Projects

- Expectations
  - Work must be of professional quality
  - The work must be the individual's or group's own original work
  - Satisfactory completion of the course depends on the quality of the work
  - Grading is as follows:
    - Final Project: 40%
    - Homework: 30%
    - Peer review: 30%

Job Performance Requirements

- What is a JPR?
  A JPR is a statement that describes a specific job task to be performed, lists the items necessary to complete the task, and defines measurable or observable outcomes and evaluation areas for a specific task.

  Source: NFPA / Dr. David Hooten, Ph.D. 1995

Group Work

- Expectations
  - Fire Officer III is designed to bring course participants together, as individuals and decision-making groups, to collectively solve organizational problems.
  - Group leadership will rotate among the group members throughout the various activities.

Peer Evaluations

- Members of a group are expected to contribute to the overall group project.
- Members of a group will complete and submit a peer evaluation form with each activity.
  - Appendix A in the Student Manual
Activity 1-2-2

- Team Building
  - When I first enter a new group, I feel...
  - On my job, my greatest strength is...
  - A personal weakness that I am trying to improve on is...
  - I have previously had a good/bad experience working in a group when...

Activity 1-2-3

- Introduction to Blue Valley County
  - Review Appendix D
  - Capture critical information
  - Be prepared to discuss the information found

Activity 1-2-4

- The Chief Officer’s Role in Managing System Resources: Planning, Organizing, Directing, and Controlling (Final Project)
  - Activity 1-2-4 is due at the beginning of Session 20-1

Activity 1-2-4

- Research project elements include
  - Mission statement
  - Phased implementation
  - Organization
  - Hiring plan
  - Employee benefits
  - Professional development program
  - Training program
  - Recruiting and retention program

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will understand the course expectations, structure, schedule, and assignments.
Review

- Activity 1-2-1: Student Introductions and Expectations
- Program Explanation
- Taxonomy of Educational Objectives
- Individual and Group Research Projects
- Job Performance Requirements
- Group Work
- Peer Evaluations
- Activity 1-2-2: Team Building; Activity 1-2-3: Introduction to Blue County Valley; Activity 1-2-4: Final Project
Lesson 2-1: Measuring Service Delivery Capability, Part I

Student Performance Objective
Given information from discussion, handouts, and reading materials, the student will be able to identify types of disaster events, natural and man-made; describe variables that affect response to an incident; describe the incident timeline for assessing departmental responses to incidents; discuss performance measures, indicators and descriptors; describe customer-driven response goals; and discuss a methodology for analyzing response times and options for improvement.

Overview
- Hazard Analysis
- Variables Affecting Response
- Incident Timeline Critical Points and Intervals
- Performance Measures
- Customer-Driven Response Goals
- Response Time Analysis
- Activity 2-1-1: Response Time Analysis

Hazard Analysis
- There is always the potential for jurisdiction-wide disaster caused by a number of events
- Each jurisdiction should perform a hazard analysis to determine hazards that it faces and the likelihood of occurrence

Hazard Analysis
- Step 1: Identify hazards
  - Natural hazards
  - Civil disorders, power failures, urban fire hazards
  - National security hazards
  - Target hazards

Hazard Analysis
- Step 2: Determine the probability that this hazard will occur
  - Low hazard—unlikely
  - Moderate hazard—possible
  - High hazard—likely
Hazard Analysis

Step 3: Determine if this hazard is a significant threat to the population
- Low-frequency/high-risk hazards
- High-frequency/low-risk hazards

Hazard Identification Matrix

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Probability of Occurrence</th>
<th>Number of Population Affected in Thousands</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unlikely (1 pt)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible (2 pts)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Likely (3 pts)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unlikely (1 pt)</td>
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<td></td>
<td>Possible (2 pts)</td>
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<tr>
<td></td>
<td>Possible (2 pts)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Likely (3 pts)</td>
<td></td>
</tr>
</tbody>
</table>

Step 4: Conduct a vulnerability assessment
- Evaluate five factors
  - Potential danger to people; economic impact; environmental impact; social impact; political impact
- Rate the vulnerability as low, moderate, or high
- Reconsider the priority of each hazard based on vulnerability

Vulnerability Assessment Matrix

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Potential danger or harm to people</th>
<th>Economic Impact</th>
<th>Environmental Impact</th>
<th>Social Impact</th>
<th>Political Impact</th>
<th>Total Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (1 pt)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low, Moderate</td>
</tr>
<tr>
<td></td>
<td>Moderate (2 pts)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Moderate</td>
</tr>
<tr>
<td></td>
<td>High (3 pts)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>High</td>
</tr>
</tbody>
</table>

Each category will be rated from 1 to 3 points
- A total of 5 to 8 points = low vulnerability; 9 to 11 = moderate vulnerability; 12 to 15 = high vulnerability
- If the "Potential danger or harm to people" score is 3, the vulnerability ranking should be moderate or high regardless of the computed score

Step 5: Determine the risk priorities
- Fill out the Risk Rating Matrix, determining the risk rating by multiplying the “probability of occurrence” by the “vulnerability”
- Classify the hazards facing your community

Risk Rating Matrix

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Probability of Occurrence</th>
<th>Vulnerability</th>
<th>Risk Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unlikely (1 pt)</td>
<td>Low (1 pt)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Possible (2 pts)</td>
<td>Moderate (2 pts)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Likely (3 pts)</td>
<td>High (3 pts)</td>
<td></td>
</tr>
</tbody>
</table>

Key:
- 9 points = High risk
- 6 points = Moderate risk
- 4 points = Low risk
- 1 point = Very low-risk
Variables Affecting Response

- Variables departments can control
  - Training
  - Staffing
  - Equipment
  - Skill proficiency

Variables Affecting Response

- Variables that departments cannot control
  - Nature of the disaster
  - Amount of destruction
  - Geographic location
  - Number of buildings and people impacted
  - Availability of mutual aid
  - Travel time to the scene

Incident Timeline Critical Points and Intervals

Detection Time | Alarm Time | Answer Time | Dispatch Time | Turnaround Time | Travel Time | Setup Time | Control Time | Recovery Time

Performance Measures

- Indicators of service efforts
  - Monetary, e.g., per capita
  - Non-monetary, e.g., FTEs

- Indicators of service accomplishments
  - Outputs
  - Outcomes

- Indicators that relate service efforts to accomplishments
  - Amount of input to output
  - Amount of input to outcomes
  - Productivity or efficiency indexes
Performance Measures

- Descriptors and indicators for fire and EMS services
  - Primary population served
  - Square miles served
  - Service area description
  - Median age of structures
  - Demographic characteristics
  - Median household income
  - Percentage below poverty level

Performance Measures

- Fire suppression indicators
  - Total responses to fire calls
  - Fire calls responded to within five minutes
  - Structure fires by outcome
  - Firefighter fire-related injuries
  - Firefighter fire-related deaths
  - Civilian fire-related injuries
  - Civilian fire-related deaths
  - Special operations

Performance Measures

- EMS Indicators
  - EMS response time (F-I interval)
  - Percent of patients in full cardiac arrest who have a pulse upon delivery to a medical facility
  - Collection rates of billed EMS

Performance Measures

- Service providers descriptors
  - Total operating expenditures
  - Services provided
  - Number of stations
  - Staff by type (career or volunteer)

Performance Measures

- Community risk reduction indicators
  - Total hazards
  - Total inspected occupancies
  - Percent of total inspected occupancies experiencing fires
  - Total dollar value lost to fire
  - Cost of community risk reduction efforts
  - Structure fires by occupancy type
  - Deaths by occupancy type
  - Arson fires

Performance Measures

- EMS descriptors
  - Method of service provision for EMS
  - Calls requiring EMS
Customer-Driven Response Goals

- **End outcome:** reduce fire and life losses
  - Fires can result in death or injury to firefighters and to civilians
  - Fires can cause loss of property, income, and tax revenues
  - EMS calls can result in various rates of patient morbidity and mortality

Customer-Driven Response Goals

- **Intermediate outcomes:** critical response time components
  - Based on the premise that prompt arrival results in reduced losses
    - Data is more readily obtainable
    - Enough data is available to provide meaningful and valid results
    - Components are easy to analyze over time

Customer-Driven Response Goals

- **Customer-based response time goals**
  - Fire response time goals
  - EMS response time goals
  - Recommendation for customer-based response time goal for system response time (C-I interval):
    - First arriving BLS unit: four minutes
    - ALS unit: eight minutes
    - First arriving firefighting unit: four minutes
    - All first alarm units: ten minutes

Response Time Analysis

- **Methodology**
  - Use a graduated scale of time intervals
  - Compare existing response time patterns (baseline) to established goals
  - Set objectives and targets for improving the system

Response Time Analysis

- **Options for improving response time**
  - Detection time: Citizen CPR
  - Alarm time: Citizen 9-1-1 training
  - Call processing time: Modifying procedures
  - Turn-out time: Training
  - Travel time: Improvement of road networks
  - Set-up time: New procedures
  - Control time: Crew training
  - Recovery time: New technology

Activity 2-1-1

- **Response Time Analysis**
**Student Performance Objective**

Given information from discussion, handouts, and reading materials, the student will be able to identify types of disaster events, natural and man-made; describe variables that affect response to an incident; describe the incident timeline for assessing departmental responses to incidents; discuss performance measures, indicators and descriptors; describe customer-driven response goals; and discuss a methodology for analyzing response times and options for improvement.

**Review**

- Hazard Analysis
- Variables Affecting Response
- Incident Timeline Critical Points and Intervals
- Performance Measures
- Customer-Driven Response Goals
- Response Time Analysis
- Activity 2-1-1: Response Time Analysis
Lesson 3-1: Measuring Service Delivery Capability, Part II

Student Performance Objective

- Given information from discussion, handouts, and reading materials, the student will be able to describe the components of the critical control elements, describe various tools useful in analyzing current activities and future requirements, and demonstrate evaluative methods for analyzing data.

Overview

- Critical Control Elements
- Analytical Tools
- Activity 3-1-1: The Evaluative Method

Critical Control Elements

- Planning for a successful outcome for a response
- Pre-fire planning
  - Construction
  - Floor plans
  - Fire protection systems
  - Occupancy types
  - Hazards
  - Water supply
- Data collection and analysis
Analytical Tools

- Types of analytical tools
  - Forecasting
  - Inventory models
  - Queuing theory
  - Linear programming

Activity 3-1-1

- The Evaluative Method
Activity 3-1-1

- Forecasting Model
  - (Estimated population (in hundreds) × 0.094) + (Estimated number of dwellings (in hundreds) × 0.004) – 0.102 = Estimated number of calls
  - Note: This formula is valid only for the historical data used to develop it.

Activity 3-1-1

- Forecasting Model
  - Example: For 2013, the population estimate is 86,211 and the number of dwellings is estimated at 33,921. Given this, what is the expected number of calls for 2013?
  - (86,211 × 0.094) + (33,921 × 0.004) – 0.102 = 8.104 + 0.136 – 0.102 = 8.138 or 8,138 calls

Activity 3-1-1

- Queuing Model
  - Arrival rate of calls ÷ (Utilization factor × Average service rate) = Number of stations
  - Example: For 2013, the estimated number of calls is 8,138.

Activity 3-1-1

- Queuing Model: Given that the average service time is 40 minutes per call and the community’s utilization goal is 20%, how many stations are needed for 2013?
  - Arrival rate of calls = 8,138 calls ÷ 8760 hours in a year
  - • Arrival rate is 0.929 calls per hour
  - Service rate for calls per hour = 1 ÷ (40 minutes ÷ 60 minutes)
  - • Service rate is 1.5 calls per hour
  - 0.929 ÷ (0.2 × 1.5) = 3.097 or 3 stations

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to describe the components of the critical control elements, describe various tools useful in analyzing current activities and future requirements, and demonstrate evaluative methods for analyzing data.
Lesson 4-1: An Overview of Budget Development, Preparation, Budgeting, and Auditing Practices and Procedures

Student Performance Objective

- Given information from discussion, handouts, and reading materials, the student will be able to identify functions, types, and formats of the budget process; describe revenue sources, steps in the budget process, intergovernmental considerations, and aspects of budget administration; explain the purpose of budget controls, methods of budget control, and commonly used budget controls; describe the purpose, categories, types, methods, and standards of auditing; and formulate a budget and analyze a case study provided.

Overview

- Functions, Types, and Formats of a Budget
- Revenue Sources Available
- Steps in the Budget Process
- Intergovernmental Considerations
- Budget Administration
- Budget Controls
- Auditing
- Activity 4-1-1: Formulate a Budget
- Activity 4-1-2: Case Study: Bluffco Fire Department

Functions, Types, and Formats of a Budget

- **Budget**
  - The development and execution of a plan for effective use of financial resources for a fiscal period.

Functions, Types, and Formats of a Budget

- **Functions**
  - Control: The expenditure of public tax dollars or private donations requires financial accountability.
  - Management: Managing the tax dollars allocated by the budget is the process by which an organization accomplishes its plans.
  - Planning: Elected officials break down the overall plan into smaller objectives and assign them to appropriate departments.

Functions, Types, and Formats of a Budget

- **Types**
  - Operating budget
    - Salaries
    - Expendable materials
    - Station maintenance
    - Utilities
  - Capital budget
    - Land
    - Fire and EMS stations
    - Apparatus
    - Computers
    - SCBA
Functions, Types, and Formats of a Budget

- **Formats**
  - Lump sum: Funding is provided for all expenses for the year in a lump sum.
  - Line item: The budget is organized with specific category of expenditure authority by expense type.
  - Performance: Funding is provided based on performance objectives for each unit.
  - Classical program: Funding is provided as a lump sum to major operational units.
  - Zero-based: Funding must be determined or justified for major decision units each year.

Revenue Sources Available

- **Federal Grants**
  - Superfund Amendment Reauthorization Act, Department of Transportation, the Federal Emergency Management Agency, Homeland Security, and SAFER Grants

- **State Grants**
  - Maryland Fire, Rescue and Ambulance Fund (State 508 Fund), Volunteer Company Assistance Fund, Maryland Emergency Management Agency, and Maryland Institute for Emergency Medical Services System

- **Local Revenues**
  - Property taxes, piggyback income taxes, permit and licensing fees, bond revenues, EMS service fees, special taxing districts, user charges, 9-1-1 fees, local fundraising, private corporations, and cost recovery

Steps in the Budget Process

- Analyze current program operation
- Evaluate the cost of desired new programs
- Review current budget to decide where changes must be made to match expenses with revenues
- Consider demographic and inflationary factors that will affect the cost of future service delivery

Steps in the Budget Process

- Constantly review staffing levels for methods to improve operational and administrative efficiency
- Track revenue, expenses, and operational information closely
- Establish regular long-range planning for capital outlays
- Sell the benefits of the plan to those with approval authority
- Deliver completed budget through proper channels

Budget Administration

- The process of disseminating the chief’s operational and financial plans to achieve organizational objectives using financial resources provided.
Budget Administration

- Aspects of budget administration
  - Communication of specific financial and operational objectives to each person who has expenditure authority or who is charged with meeting goals

Budget Administration

- Aspects of budget administration
  - Spending plan: It is important to match expense timing with operational and budget plans
  - Annual review and training:
    - Spending authority and limits
    - Petty cash procedures
    - Competitive bid requirements
    - Accounts payable procedures

Budget Controls

- The purpose of budget controls
  - Controls ensure compliance with objectives, priorities, and appropriations and provide guidance to those with expenditure authority

Budget Controls

- There are two methods of budget controls
  - Traditional budget control methods measure expenditures against the budgeted goal on a periodic basis
  - Motivational budget control methods provide rewards or punishments for the manager’s performance against budgeted goals

Budget Controls

- Line item accounting
  - A budget is established for each item regardless of size or cost
  - Every expenditure is charged against the appropriate budget item and the remaining balance is indicated

Budget Controls

- Line item accounting
  - Is easy to develop and understand
  - Is user and accounting friendly
  - Allows for a large amount of management control
  - Limits a manager’s spending authority to the encumbered amount by item
  - May not be easy to change
Budget Controls

- Budget accounting reports
  - Monthly reports describe how the department is performing against the approved budget.
  - Reports show the remaining balances unexpended and encumbered in each account by line item.
  - Reports should be accurate and timely.
  - Computer-based expenditure and account-based tracking is now common.

Budget Controls

- Percentage deviation reports
  - Provide operating personnel and budget controllers with line item data of two kinds
    - The dollar amount expended or encumbered to date
    - A comparison of the rate of expenditure against the expected percentage to be expended
  - Can be misleading if expenditures are cyclical

Budget Controls

- Allotments
  - The allotment system divides the budget into monthly or quarterly allotments
    - One cannot exceed the amount for the given period
  - Allotments can be very difficult to manage when seasonal variations occur

Budget Controls

- Position controls
  - Budgetary controls for personnel services are by position classifications
  - Position controls require establishing accurate staffing and salary levels
  - Overtime and fringe benefits are controlled by dollar limits through separate accounts

Budget Controls

- Purchase order and contract award review
  - Provides a routing system to review requisitions before final approval
  - Uses an additional layer of bureaucracy
  - Requires personnel making requisitions to work closely with the purchasing agent

Budget Controls

- Performance statistics review
  - Budget authority is given in terms of production units
  - Measures must take into account the flaws in reporting
    - Operational
    - Seasonal outputs and expenditures
    - Time lags
  - Statistics can be used for comparative analysis
Budget Controls

- Review of specific expenses
  - Some expenses are singled out and require further review and justification
  - Specific expenses are frequent targets for political attacks
  - Travel expenses are a good example of expenses frequently reviewed

Budget Controls

- Other controls
  - Can be written policy that assures that requirements, procedures, and authorizations are recommended and published
  - Can be regular reviews of departmental business practices
  - May be separation of duties to ensure that more than one person is included in the authorization protocol and the audit trail

Auditing

- Auditing is the examination of records to verify information in order to
  - Safeguard public funds and assets
  - Protect the public trust
  - Guard against purposeful mismanagement or criminal misconduct
  - Assist managers with cost containment
  - Provide peace of mind

Auditing

- Two general audit categories
  - Compliance: Determines if the organization or individual department is following prescribed procedures and laws
  - Operational or procedural: Reviews organizational operating procedures and methods, with a focus on efficiency and effectiveness

Auditing

- Audit types
  - Fiscal or financial audits
  - Management audits
  - Program audits
  - Performance audits

Auditing

- A state highway department’s appropriation to purchase road salt

- Financial Audit
  - Checks purchase and payment records

- Management Audit
  - Checks product location, adequacy, and vendor selection

- Program Audit
  - Determines if resource buying is appropriate

- Performance Audit
  - Examines alternatives to department operations
Auditing

- Methods of initiating an audit
  - Internally
  - Externally

Internally

Externally

$,

Standards of documented performance for financial audits
- Generally Accepted Accounting Practices (GAAPs)
- Frequency of auditing
  - Annually or fiscally-based from a statistical sampling
- Documents normally required and reviewed
  - Statement of financial position
  - Income statement
  - Statement of changes in financial position
  - Notes to the financial statements

Activity 4-1-1

- Formulate a Budget

Activity 4-1-2

- Case Study—Bluffco Fire Department

Student Performance Objective

- Given information from discussion, handouts, and reading materials, the student will be able to identify functions, types, and formats of the budget process; describe revenue sources, steps in the budget process, intergovernmental considerations, and aspects of budget administration; explain the purpose of budget controls, methods of budget control, and commonly used budget controls; describe the purpose, categories, types, methods, and standards of auditing; and formulate a budget and analyze a case study provided.

Review

- Functions, Types, and Formats of a Budget
- Revenue Sources Available
- Steps in the Budget Process
- Intergovernmental Considerations
- Budget Administration
- Budget Controls
- Auditing
  - Activity 4-1-1: Formulate a Budget
  - Activity 4-1-2: Case Study: Bluffco Fire Department
Student Performance Objective

Given information from discussions, handouts, and reading materials, the student will be able to describe the bid process and identify the four commodity types and purchasing methods; describe the importance of comprehensive and accurate bid specifications and identify bid specification requirements; describe legal requirements; identify aspects of vendor relations; describe cost-reduction opportunities and methods to enhance the relationship between purchasing agents and a fire service organization; and develop the process for soliciting and awarding competitive bids.

Overview

- The Competitive Bidding Process
- Commodity Types
- Purchasing Methods
- Bid Specification Importance
- Bid Specification Requirements
- Legal Requirements
- Vendor Relations
- Cost-Reduction Opportunities
- Methods for Enhancing Purchasing Relationships
- Activity 6-1-1: Development of the Competitive Bid Process

The Competitive Bidding Process

- Purchasing Specifications
  - Purchasing specifications are an accurate and complete description of the commodity.
  - Purchasing specifications are contained in a formal document that outlines the terms and conditions of the procurement.
  - Specifications must receive approval from management or authorities.
  - Vendors are solicited to submit bids through advertising.
  - Contractor and vendor selection is based on eligibility and response to the solicitation.

Commodity Types

- Expendable items
- Property and equipment
- Capital items
- Services
Purchasing Methods
- Petty Cash
- Bank Draft
- Blanket Accounts
- Purchase Orders

Bid Specification Importance
- CLEAR
- CONCISE
- COMPLETE
- SPECIFICATIONS

Bid Specification Requirements
- Bid specifications
  - Need to be as simple as possible
  - Should refer to brand names
  - Should be flexible to allow “equals”
  - Should emphasize functional or performance characteristics

Bid Specification Requirements
- Bid specifications
  - Should state accurate delivery details
  - Should state the results to be achieved
  - Should include bid evaluation criteria
  - Should state sampling requirements

Legal Requirements

In Maryland, specifications must:
- Permit maximum completion and prevent favoritism
- Prevent competitive advantages by avoiding proprietary (lock-out) specifications
- Comply with disclosure regarding noise level, energy use, and recycled material content

Legal Requirements

Specifications must (continued)
- Emphasize functional or performance criteria
- Describe the objective criteria for evaluating bids
- Consider “equals” that use salient characteristics
Legal Requirements

- Local legal considerations
  - Performance bond
  - Vendor advisors
  - Legal review
  - Affirmative action laws

Legal Requirements

- Legal defensive measures
  - Record of events and documents
  - Independent bid evaluation

Vendor Relations

- Vendors are a valuable source of information based on constant awareness of product specifications and market factors
- Commission-based motivation must be taken into account
- Excessive contact may prevent objectivity and impartiality

Cost-Reduction Opportunities

Purchasing Approaches

- Total replacement: May be advantageous for some commodities where total replacement rather than unit replacement would save money
- Total cost: Incorporates consideration of all associated and ongoing expenses
- Life cycle replacement: Based on a known life expectancy

Cost-Reduction Opportunities

Cooperative purchasing agreements

- Can allow entities to combine purchasing power
- Can result in substantial benefits from consolidated agreements
  - Lower costs, standardized equipment, development time
  - Can have some disadvantages
    - Compromise, extends time frames, lack of control, larger purchases than desired
  - Need written agreement among cooperatives
  - Can be achieved by piggybacking onto contracts

Cost-Reduction Opportunities

Financing opportunities

- Short-term loans: Provide ready cash but high interest rates
- Cash reserves: Are often used for purchasing capital items or apparatus
- Bonds: Are commonly used for capital items but place a long-term obligation on the borrower
- Lease-purchases: Are commonly used for replacement of equipment
Cost-Reduction Opportunities

- Other methods of reducing cost
  - Timely invoice payment that may qualify for a rebate
  - Referral sales to other customers
  - Using demonstrators or off-the-shelf items that may provide substantial savings

Methods for Enhancing Purchasing Relationships

- Recognize primary factors that introduce delay and frustration into the purchasing process
- Prevent conflict and frustration in purchasing
  - Familiarize purchasing agents with your operation
  - Provide a sample photograph of the item
  - Explain specification compliance requirements
  - Provide sources of supply and vendor contacts
  - Establish a firm required date when the item is needed
  - Identify future purchasing plans

Activity 6-1-1

- Development of The Competitive Bid Process

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to describe the bid process and identify the four commodity types and purchasing methods; describe the importance of comprehensive and accurate bid specifications and identify bid specification requirements; describe legal requirements; identify aspects of vendor relations; describe cost-reduction opportunities and methods to enhance the relationship between purchasing agents and a fire service organization; and develop the process for soliciting and awarding competitive bids.

Review

- The Competitive Bidding Process
- Commodity Types
- Purchasing Methods
- Bid Specification Importance
- Bid Specification Requirements
- Legal Requirements
- Vendor Relations
- Cost-Reduction Opportunities
- Methods for Enhancing Purchasing Relationships
- Activity 6-1-1: Development of the Competitive Bid Process
Lesson 7-1: The Chief Officer’s Role in Managing Human Resources

Student Performance Objective
- Given information from discussion, handouts, and reading materials, the student will be able to document the important factors and elements of a human relations program and apply them to the process of personnel assignments, hiring of members, developing policies and procedures for promotions, and professional development, based on a given scenario.

Overview
- Planning and Scheduling
- Aspects, Benefits, Strategies, and Uses of Delegation
- The Hiring Plan
- The Promotion System
- Professional Development
- Activity 7-1-1: Phased Implementation of a Combination Fire Service Organization

Planning and Scheduling

Types of Planning and Scheduling

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Planning versus emergency response
- Strategies to mitigate the emergency response factor
  - Research the busiest times for emergency response
  - Have engines cooperate to cover calls
  - Break projects into small tasks
  - Plan projects before beginning to ensure all necessary materials are available
Aspects, Benefits, Strategies, and Uses of Delegation

- Aspects of delegation
  - Levels
    - Chief officers
    - Company officers
  - The chief officer is still responsible for the outcomes
  - Delegation does not relieve the person to whom the task is delegated of having accountability

- Benefits of delegation
  - Frees up time for the chief officer
  - Provides professional development opportunities
  - Uses additional brainpower and ideas
  - Promotes teamwork
  - Empowers the team
  - Encourages buy-in

- Delegation strategy guidelines
  - What are some strategies for delegating tasks?

- Uses of delegation
  - What tasks should you not delegate?
  - What tasks should you delegate?

The Hiring Plan

- Develop the hiring plan in conjunction with the organization’s overall strategy to support the department’s goals and objectives
- Perform job analyses for each position
The Hiring Plan

- Establish health standards and develop implementation policies
- Establish policies for hiring new employees without experience and for hiring experienced personnel to a recognized standard

The Hiring Plan

- Items to address in a hiring plan
  - Community demographics
    - An organization has an ethical and moral responsibility to be a part of the community and a responsibility to recognize the need for change with the community's demographic population

The Hiring Plan

- Items to address in a hiring plan (continued)
  - Diversity
    - Failure to establish diversity goals and not adequately planning to implement a diversity plan
      - May cause the department to lose support from under-represented citizens
      - Can result in lawsuits, challenges, and indecisiveness

The Hiring Plan

- Compliance issues
  - Fair Labor Standards Act of 1938
  - Equal Pay Act of 1963
  - Civil Rights Act of 1964
  - Age Discrimination in Employment Act of 1967
  - Occupational Safety and Health Act of 1970
  - Equal Employment Opportunity Act (EEO)
  - Equal Employment Opportunity Commission of 1972

The Hiring Plan

- Compliance issues (continued)
  - Local and State Laws
    - Maryland Occupational Safety and Health (MOSH) Act
    - Article 49B of the Annotated Code of Maryland
    - Maryland Governor’s Executive Order 01.01.1933.16

The Hiring Plan

- Compliance issues (continued)
  - The Rehabilitation Act of 1973
  - Immigration Reform and Control Act of 1986
  - Polygraph Protection Act of 1988
  - Americans with Disabilities Act of 1991
  - Family Medical Leave Act of 1993
  - Civil Rights Act of 1991
  - Uniform Guidelines on Employee Selection
The Promotion System

- Establish a promotion system that meets the unique needs of the organization
  - Include those methods that will identify individuals who possess the desired traits, abilities, and personality
  - Include measures that assure compliance with all laws and regulations
  - Ensure a system that does not create artificial barriers and biases

The Promotion System

- Establish a promotion system that meets the unique needs of the organization (continued)
  - Build in security to maintain the integrity of the process
  - Ensure the support and confidence of the candidates
    - Include participation of incumbents where practical
    - Be open to scrutiny and observation
    - Encourage input and comment from participants if the promotion system is a closed system

The Promotion System

- Develop promotion tests
  - Design and construct the tests
  - Entrust test design and construction to individuals who are knowledgeable (experts in the field)

The Promotion System

- Design and construct the tests
  - Ensure the scope and nature of any testing process is commensurate with the position, scope of work, and level of the assignment
  - Review the appropriate position description and classification
  - Identify the duties and responsibilities, and where this position fits into the organization
  - Identify the organization’s expectations
  - Clearly delineate and document all these parameters

The Promotion System

- Design and construct the tests
  - Use an appropriate testing format
    - Written tests (e.g., multiple-choice)
    - Non-traditional written tests (e.g., essay)
    - Panel interviews
    - Assessment centers
    - Officer candidate schools
    - Review of performance evaluations
    - Practical skills testing
    - Combination tests
The Promotion System

- Develop a candidate preparation and notification system
  - Publishing requirements for participants
  - Notice of the testing program
  - Resource and study materials
  - Test administration

The Promotion System

- Validate the promotion process
  - Define the relationship between testing and position needs
  - Test for validity

The Promotion System

- Establish an evaluation method for promotion
  - Election by membership
    - Election by membership primarily takes place in volunteer organizations

The Promotion System

- Election by membership (continued)
  - A person may be promoted as a result of
    - Personality or popularity
    - Longevity
    - Experience
    - Past or current performance
  - Many organizations use a combination of factors, including requisite training and experience

The Promotion System

- Appointment by the Chief or a governing board
  - Appointment by the Chief or a governing board takes place in the traditional fire service

The Promotion System

- Appointment by the Chief or a governing board (continued)
  - A person may be promoted as a result of
    - Longevity
    - Experience
    - Personality or popularity
  - A chief or board may select competitive testing and performance evaluations
The Promotion System

- Promotion methods
  - Competitive testing and performance evaluation
  - Is found primarily in career-oriented organizations
  - Is based on a formalized policy for the qualification and evaluation of promotion candidates

The Promotion System

- Competitive considerations
  - Past performance
  - Written test performance
  - Oral interview board performance
  - Assessment center performance

The Promotion System

- Important points to consider
  - A system of organizational accountability
  - Review of promotion policy to eliminate any discriminatory practices
  - The NFPA 1201 standard Developing Fire Protection Services for the Public

Professional Development

- Elements
  - Continuing education
  - Access to various career paths
  - Participation in task force or committee work

Professional Development

- Professional development or training?
  - Training can be a quick fix for small problems or needs
  - Professional development is part of a long-term training plan

Professional Development

- Nontraditional professional development opportunities
  - In-house training programs
  - Online courses
  - Correspondence or home study courses
  - Coaching
  - Conferences and workshops
  - On-the-job training
  - Mentoring
  - Co-op programs
  - Executive loan programs
  - Volunteer opportunities
Professional Development

- Mentoring versus coaching
  - Mentoring focuses on the professional development and advancement of high achievers
  - Coaching focuses on performance improvement

Mentor selection guidelines
- Experienced firefighters are excellent choices
- Mentoring can be on a voluntary or required basis
- The mentor
  - Should not be the protégé’s immediate manager
  - Should have many years of experience in the area he or she is mentoring in
  - Should be observant, a good listener, able to empathize with others, and a good communicator

The mentoring process
- Choose a motivated protégé that is a top performer who desires a higher position
- Create a personal development action plan that reflects goals, costs, resources, and limitations
- Put the plan in action

Hold the protégé responsible for outcomes
- Review the plan periodically, update and evaluate the plan’s effectiveness
- Give recognition when he or she succeeds

Activity 7-1-1

Phased Implementation of a Combination Fire Service Organization

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to document the important factors and elements of a human relations program and apply them to the process of personnel assignments, hiring of members, developing policies and procedures for promotions, and professional development, based on a given scenario.
Review

- Planning and Scheduling
- Aspects, Benefits, Strategies, and Uses of Delegation
- The Hiring Plan
- The Promotion System
- Professional Development
- Activity 7-1-1: Phased Implementation of a Combination Fire Service Organization
Lesson 9-1: Departmental Administration—Records and Data Repository Systems

Student Performance Objective
- Given information from discussion, handouts, and reading materials, the student will be able to describe the development, maintenance, and evaluation process relating to an organization’s record-keeping system, and apply its components to a given scenario.

Overview
- Information Management
- Effective Uses of Information
- Fire Service Reports and Records
- Effective Information Management Systems
- Types of Information Management Systems

Overview
- Uses of Information Management Systems
- Maintenance and Evaluation of an Information Management System
- Common Problems
- Improving Information Management Systems
- Activity 9-1-1: Model Plan for the Implementation of an Information Management System

Information Management Versus
- Planning
- Controlling
- Dispensing
- Generating
- Evaluating
- Preserving
- Processing

GOOD DATA SUPPORTS GOOD DECISION MAKING

Effective Uses of Information
- Keys to good information management
  - Knowing why the information is being collected and its use
  - Knowing how the information is processed
  - Knowing how the information is presented
Effective Uses of Information

- Functions of an effective information management system
  - Describing and documenting the community fire problem
  - Developing comprehensive long-range plans
  - Decision-making, policy-setting, and implementing procedural changes
  - Planning and setting priorities for future fire protection needs

Effective Uses of Information

- Functions of an effective information management system
  - Supporting budget requests
  - Demonstrating the need for local ordinance passage
  - Evaluating fire inspection and code enforcement programs
  - Evaluating public education programs

Effective Uses of Information

- Functions of an effective information management system
  - Scheduling non-emergency activities
  - Scheduling staffing and personnel needs
  - Demonstrating the need to upgrade levels of service
  - Determining training needs
  - Preparing inter-organizational correspondence

Fire Service Reports and Records

- Incident or activity reports
- Budgetary and financial reports
- Personnel records
- Building and inspection records and reports
- Risk management reports
- Apparatus and equipment records

Effective Information Management Systems

- Purposes of an effective information management system
  - Collect information
  - Record information
  - Retrieve information
  - Consolidate information
  - Evaluate information
  - Store information

Effective Information Management Systems

- The fire officer’s ability to make effective decisions is directly related to both the quantity and quality of the information available.
Need for Effective Information Management Systems

Types of Information Management Systems

- Simple systems
  - Have large storage space
  - Are slow
  - Are transportable
  - Are inexpensive
  - Can be operated with no special skills

- Stand-alone computer systems
  - Require less space
  - Are faster than simple systems
  - Are subject to power failure
  - Require some expertise
  - Have various levels of complexity
  - Vary in cost
  - Have access to multiple files simultaneously

- Networked computer systems
  - Are faster than stand-alone systems
  - Have access to multiple files simultaneously
  - Cost well in excess of a stand-alone system
  - Have various levels of complexity
  - Require a high level of expertise to maintain

Uses of Information Management Systems

- Training
- Correspondence
- Operations
- Fire Prevention Activities
- Records Management
- Maintenance and Evaluation of an Information Management System
  - Screen all information for accuracy and completeness
  - Update existing data
  - Determine the life cycle of files
Maintenance and Evaluation of an Information Management System

- Produce data output as required
- Establish a back-up procedure
- Address these issues and others in policies and procedures

System performance evaluation
- Determine if the system is operating as expected
  - Speed
  - Output
  - Ease of use
  - Maintenance

Maintenance and Evaluation of an Information Management System

- System performance evaluation
- Determine if the system is efficient
  - Organization
  - Function
  - Feedback from users
  - Determine if new applications or new technology would increase efficiency

Identify and recommend possible changes
- Upgrading, replacing, or expanding hardware
  - New and more powerful processing systems
  - New and more versatile input and output devices

Identify and recommend possible changes
- Considering inclusions in system reorganization
  - Cross referencing
  - Maintaining legacy systems
  - Reducing steps for accessing the system
Common Problems

- Misinterpretation of Reported Data
- Data Storage Issues
- Impact of Decisions to Collect Information
- Duplicate Reports
- Temporary Reports
- Collecting Nonessential Information

Improving Information Management Systems

- Follow a logical sequence in collecting data
- Establish a centralized record-keeping system
- Train users of the system
- Use modern technology and techniques
- Establish record retention and disposal schedules
- Conduct periodic evaluations of all reports and records

Activity 9-1-1

- Model Plan for the Implementation of an Information Management System

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to describe the development, maintenance, and evaluation process relating to an organization’s record-keeping system, and apply its components to a given scenario.

Review

- Information Management
- Effective Uses of Information
- Fire Service Reports and Records
- Effective Information Management Systems
- Types of Information Management Systems

Review

- Uses of Information Management Systems
- Maintenance and Evaluation of an Information Management System
- Common Problems
- Improving Information Management Systems
- Activity 9-1-1: Model Plan for the Implementation of an Information Management System
Lesson 10-1: Risk Management, Safety, and Health Programs—The Chief Officer’s Role in Managing and Monitoring Accidents and Injuries

Student Performance Objective

- Given information from discussion, handouts, and reading materials, the student will be able to identify the importance of risk management, safety, and health programs; define risk management and related terms; identify the elements of a safety and health program; describe the purpose, factors to evaluate, and areas to examine in a safety audit program; describe an implementation process for a risk management, safety, and health program; and develop an accident and injury prevention program.

Overview

- The Importance of a Risk Management, Safety, and Health Program
- Risks and Risk Management
- Elements of a Safety and Health Program
- The Safety Audit Program
- The Implementation Process for a Risk Management, Safety, and Health Program
- Activity 10-1-1: Accident and Injury Prevention Program
- Video: Chicago Fire Department—Everyone Goes Home

The Importance of a Risk Management, Safety, and Health Program

- Parameters to review in the risk management process
  - Community risk
  - Significant life safety problems
  - Built-in protection systems
  - Large commercial or industrial complexes
  - Transportation of hazardous materials
  - Potential for accidents

Risks and Risk Management

- Risk
  - The potential for loss or the probability of an event that causes damage, injury, or some other type of adverse consequence

Adopt an official written departmental occupational safety and health policy

Develop a safety and health program

Performs a safety audit

The fire department is responsible for compliance with all applicable laws and legal requirements with respect to member safety and health.
Risks and Risk Management

- Risk management
  - Protecting an organization’s resources
    - Employees
    - Recipients, users and the public
    - Facilities
    - Equipment
    - Financial assets

Risks and Risk Management

- The risk management process
  - Identify the risk(s)
  - Evaluate the risk(s)
  - Obtain consensus on risk controls
  - Implement risk controls
  - Monitor risk controls
  - Initiate changes as needed

Risks and Risk Management

- Elements of a risk management plan
  - Administration
  - Facilities
  - Training
  - Vehicle operations
  - Protective clothing
  - Equipment
  - Operations: Emergency and non-emergency
  - Other related activities

Risks and Risk Management

- Categories of risk management plans
  - Pre-emergency risk management: Responsibility of the fire department Health and Safety Officer (HSO)
  - Emergency scene risk management: Responsibility of the Incident Safety Officer (ISO)

Risks and Risk Management

- Terms to be familiar with
  - Safety program
  - Accident
    - Accident causes
    - Preventable accident
    - Non-preventable accident
  - Personal Injuries
  - Occupational hazards
  - Health hazards
  - Occurrences
  - Severity

- Risk management plans have five parts
  1. Identifying risk
  2. Evaluating risk
  3. Establishing priorities
  4. Controlling risk
    - Risk avoidance
    - Control measures
    - Risk transfer
  5. Monitoring risk
Elements of a Safety and Health Program

1. Organizational development
2. Organizational attitudes and behavioral management
3. Goal-oriented programs
4. A safety policy statement
5. Accurate record keeping and data monitoring
6. Inspections and investigations
7. Special review committees
8. Adequate resources
9. Safety and health training components

Elements of a Safety and Health Program

- Organizational development
  - Assess a department's ability to adjust to dynamic conditions
  - Gather information from members and management

- Goal-oriented programs
  - Goals are points toward which the collective efforts of the organization aim
  - Objectives are points that direct the minds and activities toward the goal
    - To be achieved in a given time span
  - Goals and objectives must be specific, measurable, attainable, realistic, and timely

- A safety policy statement
  - Stresses concern
  - Provides a safe and healthy work environment
  - Pledges top management's support
  - Sets priorities
  - Stresses compliance
  - Stresses that safe working conditions and methods are the prime focus

- Accurate record keeping and data monitoring
  - Provides information to conduct an objective evaluation of the program
  - Provides data on accident, injury and illness rates
  - Identifies specific causal factors
  - Creates interest in safety
  - Provides data about specific safety problems
Elements of a Safety and Health Program

- Inspections and investigations
  - Objects for inspections
    - PPE
    - Response apparatus
    - Rope rescue systems
    - Equipment
    - Facilities
    - Uniforms and work apparel
  - Grounds
  - Living areas
  - Work areas
  - Work practices in the station

Elements of a Safety and Health Program

- Special review committees perform the following functions
  - Create and maintain interest in safety
  - Establish an accident and injury prevention program
  - Determine if there are unsafe conditions or practices
  - Recommend actions to remedy unsafe conditions or practices

Elements of a Safety and Health Program

- Special review committees
  - Formulate and adopt safety and health regulations
  - Ensure that the adopted rules and regulations are publicized and enforced
  - Provide a forum of open discussion

Elements of a Safety and Health Program

- Adequate resources
  - Be sure to
    - Adequately fund safety staff positions and programs
    - Clearly delineate responsibilities for safety officers
    - Establish safety goals needed to support the mission statement

Elements of a Safety and Health Program

- Safety and health training components
  - Identify training needs
  - Gain support of management

The Safety Audit Program

- The safety audit program
  - Improves and refines existing programs
  - Examines the internal mechanism for informational flow
  - Determines the level of accountability for safety
  - Includes policies, procedures, practices, and regulations
The Safety Audit Program

- Factors to be evaluated
  - Effectiveness of a safety committee
  - Established goals
  - Meaningful operational budget
  - Identification of external resources
  - Involvement of members
  - Assessment of exposure to hazards
  - Established post-incident procedures
  - Review of safety training program
  - Review of emergency response plan

The Implementation Process for a Risk Management, Safety, and Health Program

- Conduct a needs identification and assessment
- Set goals and objectives
- Form project teams
- Identify alternatives or specific solutions

The Implementation Process for a Risk Management, Safety, and Health Program

- Develop a draft plan
- Submit the draft plan to the AHJ for adoption
- After adoption, identify implementation strategies
- Review and update the plan at regular intervals

Activity 10-1-1

- Development of an Accident and Injury Prevention Program

Student Performance Objective

- Given information from discussion, handouts, and reading materials, the student will be able to identify the importance of risk management, safety, and health programs; define risk management and related terms; identify the elements of a safety and health program; describe the purpose, factors to evaluate, and areas to examine in a safety audit program; describe an implementation process for a risk management, safety, and health program; and develop an accident and injury prevention program.
Review

- The Importance of a Risk Management, Safety, and Health Program
- Risks and Risk Management
- Elements of a Safety and Health Program
- The Safety Audit Program
- The Implementation Process for a Risk Management, Safety, and Health Program
- Activity 10-1-1: Accident and Injury Prevention Program
- Video: Chicago Fire Department—Everyone Goes Home
Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to identify building construction types and occupancy classifications; identify detection and suppression systems and alarm signaling systems; describe factors that affect the spread of fire, heat, and smoke; describe the impact of fire inspection programs and the chief officer’s role in fire prevention and inspection; and describe codes and standards development, pre-incident planning, and planning community fire defenses.

Overview

- Building Construction
- Occupancy Classifications
- Fire Detection and Suppression Systems
- Alarm Signaling Systems
- Factors Affecting Fire, Heat, and Smoke Spread
- The Impact of Fire Inspection Programs

Overview

- The Chief Officer’s Role in Fire Prevention and Inspection
- Codes and Standards Development
- Pre-incident Planning
- Planning Community Fire Defenses
- Activity 12-1-1: Written Plan for Target Hazard

Building Construction Types

- Fire resistive (Type I)
- Noncombustible (Type II)
- Ordinary construction (Type III)
- Heavy timber (Type IV)
- Wood construction (Type V)

Building Construction Types

- Height and area limitations
  - Type of construction
  - Occupancy classification
Occupancy Classifications

- Public assembly
  - Class A—greater than 1,000 persons
  - Class B—301 to 1,000 persons
  - Class C—50 to 300 persons

- Educational
  - Assembly areas
  - Office areas
  - Dormitories

- Institutional
  - Detention and correctional facilities
  - Health care facilities
    - Hospitals
    - Nursing homes
    - Convalescent facilities
  - Board and care homes and group homes

- Residential
  - Hotels, motels, and transient boarding houses
  - Apartments, condos, and non-transient boarding houses
  - One- and two-family dwellings

- Business
  - Medical and dental offices
  - Insurance offices
  - Real estate offices

- Industrial and Manufacturing
  - Low-hazard: Products or processes present little fire hazard and typically will not support self-propagating combustion
  - Moderate-hazard: Will burn with an average rapidity or give off considerable volumes of smoke
  - High-hazard: Product or process fire hazards exceed moderate hazard limitations
Occupancy Classifications

- **Storage**
  - Storage
    - Used for sheltering goods and merchandise
  - Mercantile
    - Used for the display and sale of merchandise

Special properties
- Cooling towers
- Sheds
- Agricultural buildings
- Tanks

Fire Detection and Suppression Systems

- **Detection systems**
  - Occupant notification
  - Fire department notification
  - Suppression system activation
  - Equipment shutdown

- **Suppression systems**
  - Sprinklers: Total or partial
  - Gaseous: Special hazard
  - Fixed

Alarm Signaling Systems

- **Bells and Horns**
  - **Advantages**
    - Bells are recognizable
    - Adults and children have practiced fire drills and know how to respond
    - There is good sound penetration
  - **Disadvantage**
    - Occupants may be complacent

- **Voice Evacuation**
  - **Advantages**
    - The voice may have a calming effect
    - Voice evacuation is used for general evacuation or a specific action based on fire location
    - Voice evacuation may employ coded language to avoid panic
  - **Disadvantages**
    - The voice may be inaudible
    - There may not be enough speakers
    - There may be misunderstanding due to language barriers
    - Repeated alarms may lead to complacency
Alarm Signaling Systems

- Americans with Disabilities Act (ADA) Requirements
  - Visual signaling devices
  - Areas of refuge with fire department notification systems

Factors Affecting Fire, Heat, and Smoke Spread

- Type of Construction
  - Noncombustible
    - Construction, remodeling, or building use may compromise fire protection applications

Factors Affecting Fire, Heat, and Smoke Spread

- Type of Construction
  - Noncombustible
    - Time and atmospheric conditions may affect structural members or their connectors
    - Changes during the building’s life may compromise noncombustible construction

Factors Affecting Fire, Heat, and Smoke Spread

- Fire Protection Features
  - Compartmentalization
  - Maintenance
  - Alarm and smoke control systems
  - Contents

Factors Affecting Fire, Heat, and Smoke Spread

- Building Use and Occupancy
  - Size and layout of the building
  - Number of occupants and their familiarity with the building
  - Occupant and staff training
  - Contents
  - Special hazards
  - Fire protection features and reliability
  - Fire department access
The Impact of Fire Inspection Programs

- Fire inspection programs cover two basic domains:
  - New construction
  - Existing buildings
- To ensure that systems function as intended, regularly scheduled maintenance is necessary
  - Sprinkler system maintenance
  - Fire alarm system maintenance

The Impact of Fire Inspection Programs

- Reduction of risks of fire and limiting fire growth through inspection
  - Maintenance of equipment and appliances
  - Housekeeping practices
  - Storage arrangements
  - Hazards eliminated or confined
- Items that contribute to loss of life
  - Means of egress not code compliant
  - Improper fire protection separation assemblies

The Impact of Fire Inspection Programs

- During inspections, the fire department should be looking for items that could unnecessarily contribute to loss of life
  - Means of egress compliance
  - Fire protection separation assemblies

The Impact of Fire Inspection Programs

- Inspections have several benefits
  - Fire insurance costs can be minimized
  - Increased community awareness may take place
  - Personnel will gain knowledge about buildings in the jurisdiction
  - Fire service personnel have the opportunity to meet building owners and operators

The Chief Officer’s Role in Fire Prevention and Inspection

- Legal responsibility
- Community responsibility
- Departmental responsibility

Codes and Standards Development

- National Codes and Standards
  - Codes and standards are updated on a regular cycle
  - The board appoints committees
  - Input is received from members and the public
  - Committees review input
  - Draft proposals are published for comment
  - Committees reconvene to consider comments
  - Committees submit final proposal for adoption
Codes and Standards Development

**STATE and LOCAL ADOPTION**

- State and local agencies review national codes and standards for amendments
- The AHJ can amend as it sees fit
- Amended codes and standards are published for comment
- After resolution of public comment issues, the jurisdiction adopts the final document

Pre-incident Planning

- Plans should be
  - Uniform
    - Predetermined format
    - Consistent terminology
  - Generic: For use in all situations
  - Manageable: appropriate amount of information

Pre-incident Planning

Plan elements

- Occupancy type
- Special hazards
- Fire protection features
  - Fire alarms
  - Sprinklers
  - Standpipes
  - Fire walls
  - Water supply

Pre-incident Planning

- Plans assist the incident commander
  - In effective utilization of resources
  - In making informed decisions for a safer and more efficient operation
  - In using resources to limit damage from fire, heat, smoke, and water
  - In providing for the safe evacuation of the occupants

Planning Community Fire Defenses

- The three phases of master planning
  1. The pre-planning phase
     - Obtain commitments
     - Form committees
     - Assemble estimates and schedules
  2. The planning phase
     - Gather and analyze data
     - Set goals and objectives
     - Determine an acceptable level of fire protection service
     - Identify alternatives
     - Construct the plan
  3. The implementation phase
Planning Community Fire Defenses

- Planning process elements
  - The mission statement
  - An environmental evaluation
  - Organizational factors
  - The objectives of the organization
  - The implementation
  - Continuous review and evaluation

Planning Community Fire Defenses

- Fire Risk Analysis
  - The community fire protection system
  - The community at risk
  - The fire suppression capability
  - The unprotected risk
  - Strategies to consider

Activity 12-1-1

- Written Plan for Target Hazard

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to identify building construction types and occupancy classifications; identify detection and suppression systems and alarm signaling systems; describe factors that affect the spread of fire, heat, and smoke; describe the impact of fire inspection programs and the chief officer’s role in fire prevention and inspection; and describe codes and standards development, pre-incident planning, and planning community fire defenses.

Review

- Building Construction
- Occupancy Classifications
- Fire Detection and Suppression Systems
- Alarm Signaling Systems
- Factors Affecting Fire, Heat, and Smoke Spread
- The Impact of Fire Inspection Programs

Review

- The Chief Officer’s Role in Fire Prevention and Inspection
- Codes and Standards Development
- Pre-incident Planning
- Planning Community Fire Defenses
- Activity 12-1-1: Written Plan for Target Hazard
Student Performance Objective

- Given information from discussion, handouts, and reading materials, the student will be able to develop a community risk reduction program that includes strategies for marketing the program, a listing of available community resources that will enhance and improve awareness, strategies to reduce fires and injuries, and components of a citizens advisory committee.

Overview

- Demographic Profile
- Strategies for Community Outreach
- Developing Community Resources
- Strategies to Reduce Fires and Injuries
- Components of a Citizens Advisory Committee
- Activity 14-1-1: Community Risk Reduction Program

Demographic Profile

- Ethnicity
- Race
- Primary language spoken
- Gender
- Socio-economic status
- Religion
- Disability
- Household types

Demographic Profile

- Information resources
  - U.S. Department of Labor
  - Local public school systems
  - Local libraries
  - City or county personnel offices
  - Fire marshal's office
  - Local Chamber of Commerce
  - Local planning and zoning departments
  - City or county health departments

Demographic Profile

- Collect fire death and injury data
  - The number of fire deaths
  - The number of fire injuries
  - Location of the fire deaths
  - Location of the fire injuries
Demographic Profile
- Determine trends
  - Target areas or communities (hot spots)
  - Language and social custom variables
  - Socio-economic status
  - Special concerns for disabled (institutional and non-institutional)
  - Racial influence
  - Ethnic influence
  - Effects of non-traditional versus traditional households

Strategies for Community Outreach
- Identify and contact community groups, leaders, and elected officials
- Attend the community organization's meeting
- Advise groups and officials of the purpose of departmental programs
- Advise groups and officials of fire death and injury data

Strategies for Community Outreach
- Inquire about the effectiveness of departmental programs in meeting the community's needs
- Inquire about the community's knowledge of services the department delivers
- Solicit the community's input and their participation for the action plan
- Schedule a follow-up meeting to review the action plan

Developing Community Resources
- Fraternities and sororities
- Local or national association of Latino elected officials
- Links, Inc.
- NAACP
- Urban League
- Religious organizations
- Civic associations
- Ethnic barber shops and social clubs
- Ethnic media
- Local community improvement associations
- Service clubs
- Insurance companies

Developing Community Resources
- Professional fire organizations
- International Association of Hispanic Firefighters
- International Association of Black Professional Firefighters
- Women in the Fire Service Association
- Professional fire organizations
- International Association of Hispanic Firefighters
- International Association of Black Professional Firefighters
- Women in the Fire Service Association

Strategies to Reduce Fires and Injuries
- Establish a mentoring program
- Establish a cadet program
- Build community rooms in new stations
- Establish open house community days
- Establish a volunteer home inspection program
- Establish a citizens' CPR training program
Strategies to Reduce Fires and Injuries

- Print public information and literature in diverse languages
- Establish a ride-along program
- Establish a community visit schedule
- Utilize culturally diverse personnel as presenters
- Establish education programs, scholarship funds and citizens’ advisory committees

Strategies to Reduce Fires and Injuries

- Implementing the action plan
  - Schedule a meeting with target community groups to update them on progress
  - Provide a timeline for implementation with goals and objectives
  - Provide time for the community to review the plan
  - Reassure the group that their continual input is essential
  - Revise the plan as needed

Components of a Citizens’ Advisory Committee

- The committee can assist with establishing the vision and goals of the department
- The committee will become an advocate for the department
- The committee will represent all cultures and segments of the community

Components of a Citizens' Advisory Committee

- Possible subcommittees
  - Youth programs
  - Fire safety education
  - Political action
  - Scholarship

Activity 14-1-1

- Community Risk Reduction Program

Student Performance Objective

- Given information from discussion, handouts, and reading materials, the student will be able to develop a community risk reduction program that includes strategies for marketing the program, a listing of available community resources that will enhance and improve awareness, strategies to reduce fires and injuries, and components of a citizens advisory committee.
Review

- Demographic Profile
- Strategies for Community Outreach
- Developing Community Resources
- Strategies to Reduce Fires and Injuries
- Components of a Citizens' Advisory Committee
- Activity 14-1-1: Community Risk Reduction Program
Lesson 16-1: Incident Planning and Multi-Agency Involvement

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to explain the elements of an action plan; describe strategic decision-making and the roles various agencies have in supplying resources; explain types of command structures consistent with the principles of the incident management system; and describe the Emergency Operations Center (EOC) and the fire department's roles and responsibilities in an EOC.

Overview

- Elements of an Action Plan
- Strategic Decision-Making
- Agencies as Valuable Resources
- Command Structures
- Emergency Operations Centers
- Fire Department Roles and Responsibilities in an EOC

Elements of an Action Plan

- An action plan is an organized course of action that addresses all phases of incident control within a specified time
- An action plan
  - Is based on problems identified during size-up
  - Is the incident commander's solution to problems

Elements of an Action Plan

- When fully developed and implemented, the action plan will address
  - Actions required
  - Means of accomplishments

Elements of an Action Plan

- Components of an action plan
  - Strategic goals
  - Tactical goals
  - Organizational structure
  - Personnel safety
Strategic Decision Making

- The 8-Step Method
  1. Recognize and define the problem
  2. Collect all data
  3. Analyze the information
  4. Develop alternatives
  5. Select the best alternative
  6. Implement the solution
  7. Monitor results
  8. Take corrective action

Strategic Decision Making

- Step 1. Recognize and define the problem.
  - What is the problem?
  - Where is it?
  - When did it first occur?
  - Why did it occur?
  - How big is it?

Strategic Decision Making

- Step 2. Collect all data.
  - Obtain all facts
  - Do not make assumptions
  - Ask questions
    - Open-ended
    - Close-ended
    - Reflective
  - Invite opinions and input

Strategic Decision Making

- Step 3. Analyze the information.
  - Review collected data
  - Discard irrelevant information
  - Correlate pertinent data
  - Define the purpose of analysis
    - Form a basis for predicting outcome(s)
    - Prioritize problem(s)
    - Determine if other information is necessary

Strategic Decision Making

  - Develop alternatives even if the solution is obvious
  - Formulate possible alternatives and predict the outcome for each

Strategic Decision Making

- Step 5. Select the best alternative.
  - Risk involved
  - Cost involved
  - Time available
  - Resources available
  - Reaction to solution

The best solution is the best outcome with the least amount of risk, using the least resources.
Strategic Decision Making

- Step 6. Implement the solution.
  - The best solution is worthless without proper implementation
  - It must solve more problems than it creates

Strategic Decision Making

- Step 7. Monitor results
  - Use constant monitoring to reassess for positive and negative results
  - Continue monitoring to prevent reoccurrence

Strategic Decision Making

- Step 8. Take corrective action.
  - Take action if the results are not positive
  - Return to step two of the strategic decision-making method, data collection, and begin the process again

Agencies as Valuable Resources

- Law enforcement
- Public works
- Inspection and permits
- Planning and zoning
- Recreation and parks
- Utilities
- Health department
- Finance department
- Public transportation authorities
- National Guard
- Red Cross
- Public school system
- FEMA
- Other agencies

Command Structures

- Types of command
  - Single command
    - Single jurisdiction or agency
  - Unified command
    - Single jurisdiction with multiple agencies
    - Multiple jurisdictions with multiple agencies
Command Structures

- Benefits of single and unified command
  - Common components
  - Modular organization
  - Integrated communications
  - Organized and recognized command structure
  - Consolidated emergency action plans
  - Manageable span of control
  - Comprehensive resource management

Avoiding conflicts of command

- Apply IMS principles properly
- Involve all jurisdictions and agencies in incident pre-planning
- Delineate areas of responsibility
- Understand that IMS is an all-risk management system

Emergency Operations Centers

- The purpose of an EOC is to gather all agencies in one room, protected from outside interference, allowing for an objective response to an incident and coordinate the response.

Specific functions of an EOC

- Coordinate all jurisdictional departments
- Make policy decisions affecting community response
- Manage multi-agency operations
- Manage and share central information
- Provide information and direction to county and municipal executive officers, commissioners, and other elected officials
- Request activation of state and federal resources

Configuration

- The room configuration is theater-style
- The director is at the front
- Agency representatives are at tables
- Charts and maps are posted at the front

Resources

- Phones and facsimile machines
- Computers
- Paper and pencil
- Site plans
- Pre-incident plans
- Radios and cell phones
- Items for personal needs
Emergency Operations Centers

Requests for assistance

PIO

Director

Tasks

Reports

Task Completed

Appropriate agency

Fire Department Roles and Responsibilities in an EOC

- The designated city, county, or state representative to the EOC from the fire or emergency service organization will
  - Keep the EOC and the director informed of fire department operations
  - Establish a reliable means of contact with the incident command post
  - Request assistance for additional resources

Fire Department Roles and Responsibilities in an EOC

- The designated city, county, or state representative to the EOC from the fire or emergency service organization will
  - Suggest fire department involvement in other agencies' actions
  - Keep informed of other agencies' capabilities
  - Be familiar with emergency operations plan of the county or municipality
  - Pass information to and from the scene

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to explain the elements of an action plan; describe strategic decision-making and the roles various agencies have in supplying resources; explain types of command structures consistent with the principles of the incident management system; and describe the Emergency Operations Center (EOC) and the fire department's roles and responsibilities in an EOC.

Review

- Elements of an Action Plan
- Strategic Decision-making
- Agencies as Valuable Resources
- Command Structures
- Emergency Operations Centers
- Fire Department Roles and Responsibilities in an EOC
Lesson 17-1: Incident Planning and Multi-Agency Involvement—Practical Applications

Student Performance Objective
- Given information from discussion, handouts, and reading materials, and given an incident requiring multi-agency operations, the student will be able to develop an action plan to address the strategic goals of the incident, tactical objectives, organizational structure, and personnel safety.

Overview
- Review of the Strategic Decision-making Process
- Review of Action-Plan Development
- Activity 17-1-1: Developing an Incident Action Plan
- Activity 17-1-2: Multi-Agency Incident

Review of the Strategic Decision-Making Process
- Recognize and define the problem
- Collect all data
- Analyze the information
- Develop alternatives
- Select the best alternative
- Implement the solution
- Monitor results
- Take corrective action

Review of Action-Plan Development
- Components of an action plan include the
  - Strategic goals
  - Tactical objectives
  - Organizational structure component
  - Personnel safety component

Activity 17-1-1
- Developing an Incident Action Plan
Activity 17-1-1 Map

Activity 17-1-2
- Multi-Agency Incident

Student Performance Objective
- Given information from discussion, handouts, and reading materials, and given an incident requiring multi-agency operations, the student will be able to develop an action plan to address the strategic goals of the incident, tactical objectives, organizational structure, and personnel safety.

Review
- Review of the Strategic Decision-making Process
- Review of Action-Plan Development
- Activity 17-1-1: Developing an Incident Action Plan
- Activity 17-1-2: Multi-Agency Incident
Lesson 18-1: Postincident Analysis of a Multi-Agency Incident

Student Performance Objective

Given information from discussion, handouts, and reading materials, and given an incident requiring multiple agency operations, the student will be able to conduct a postincident analysis to identify and communicate all required critical elements.

Overview

- Postincident Analysis
- Types of Postincident Analysis
- The Purpose of a Postincident Analysis
- Components of a Postincident Analysis
- Activity 18-1-1: Postincident Analysis of a Multi-Agency Incident

Postincident Analysis

“The reconstruction of an operation to determine the events that occurred, the strategy and tactics identified, the tasks chosen, and the results of the operation, with the goal of improving future effectiveness.”


Types of Postincident Analysis

- Informal postincident analysis
  - Is generally reserved for relatively routine operations or non-complex incidents
  - Takes place at the scene, at the apparatus, or back at the station
  - Is a discussion led by the senior officer at the incident among the crews involved
  - Does not require records being kept

- Formal postincident analysis
  - Complex or large incidents will require a formal postincident analysis
  - A formal postincident analysis is usually well planned and coordinated and follows a specified process
  - The incident participants led by a neutral facilitator assemble to discuss the incident
Types of Postincident Analysis

- Formal postincident analysis (continued)
  - Various forms of documentation are presented
  - Detailed documentation of the post-incident analysis occurs for future reference and for communicating the results

Types of Postincident Analysis

- Comparative postincident analysis
  - Comparative postincident analysis compares the perceptions of supervisors with the perceptions of subordinates
  - Each officer completes a standardized form
  - A facilitator will use the perceived differences as a basis for the discussion

The Purpose of a Postincident Analysis

- A Postincident Analysis
  - Improves the process being analyzed
  - Helps organizations identify problems and address them as a way of continuously improving performance and decision-making
  - Does not punish or assign guilt
  - Establishes the facts
  - Suggests possible changes in strategies and tactics

Components of a Postincident Analysis

- Structured procedures
  - Develop SOPs
  - Ensure analysis will be objective and impersonal

Components of a Postincident Analysis

- Identification and interview of key personnel
  - Encourage all personnel involved to contribute
  - Have each crewmember explain what he or she did and why, and any problems encountered
  - Use a standard questionnaire
  - Use open-ended questions
  - Encourage interviewees to speak freely regarding both the positive and negative aspects of the incident

Components of a Postincident Analysis

- Data collection
  - Standard fire reports
  - Computer records
  - Audiotapes
  - Videos and photographs
  - Drawings and diagrams
  - Individual logs

Components of a Postincident Analysis
Components of a Postincident Analysis

- The postincident conference
  - Attendance should not be limited to just the individuals involved in the incident
  - All agencies should be represented and be expected to participate

Components of a Postincident Analysis

- A checklist for conducting a postincident conference:
  - Invite the proper people
  - Set the stage
  - Describe the fire situation
  - Use visual aids
  - Review the firefighting operations step by step
  - Conduct the discussion in a relaxed manner
  - Handle criticism as a learning process

Components of a Postincident Analysis

- A checklist for conducting a postincident conference (continued):
  - Praise as well as criticize
  - Ask if there are any questions or comments
  - Recognize all questions, comments, and suggestions
  - Conclude by expressing confidence in the continued improvement of personnel

Components of a Postincident Analysis

- Completing and communicating the report
  - Communicating the results of the analysis is the most important component of a postincident analysis
    - Distribute department-wide the final report
    - Give other agencies that were involved a copy of the report

Components of a Postincident Analysis

- Completing and communicating the report
  - The major sections of the report are:
    - Background information
    - A timeline summary
    - A statistical summary
    - A fireground sketch
    - An analysis and results section

Activity 18-1-1: Postincident Analysis

Sofa Super Store fire—Charleston, SC—NIST Fire Modeling video
Student Performance Objective:

- Given information from discussion, handouts, and reading materials, and given an incident requiring multiple agency operations, the student will be able to conduct a postincident analysis to identify and communicate all required critical elements.

Review

- Postincident Analysis
- Types of Postincident Analysis
- The Purpose of a Postincident Analysis
- Components of a Postincident Analysis
- Activity 18-1-1: Postincident Analysis of a Multi-Agency Incident
Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to apply what was learned throughout the course to a fictional fire department. The student will use previous activities focusing on different aspects of Blue Valley County fire protection to provide an overview of the department to the County Board of Supervisors in a presentation.

Overview

- Final Group Presentations
- Program Summary
- Review of Course Expectations
- Course and Peer Evaluations

Final Group Presentations

Program Summary

- Team building and individual growth
- Conducting outside research
- Problem-solving and tactical solutions
- Following and leading
- Ethical standards of conduct or behavior

Program Summary

- Creativity, innovation, and marketing in the private sector (community)
- Managing organizational dynamics
- Safety and compliance issues
- Tactical problem-solving related to incident mitigation
Review of Course Expectations

Were your expectations met?

Course and Peer Evaluations

Student Performance Objective

Given information from discussion, handouts, and reading materials, the student will be able to apply what was learned throughout the course to a fictional fire department. The student will use previous activities focusing on different aspects of Blue Valley County fire protection to provide an overview of the department to the County Board of Supervisors in a presentation.

Review

- Final Group Presentations
- Program Summary
- Review of Course Expectations
- Course and Peer Evaluations