



## FPST 1213 Fire and Safety Hazard Recognition

### The Fire Problem

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### The Fire Problem



- How do we know if there is a problem?
- Modern times are based on data, science, and research
- Where we get data
  - United States Fire Administration
  - National Fire Protection Association
  - Bureau of Labor Statistics
  - Center for Disease Control

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### Fire Problem



	2018	1977
# of Fires	1,318,500	3,264,000
Civilian Fatalities	3,655	7,395
Civilian Injuries	15,200	31,190
Firefighter Fatalities	82	157
Firefighter Injuries	63,350	112,540
Property Loss \$	25.6 Billion	4.7 Trillion

<https://www.usfa.fema.gov/data/statistics/>

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## Great Chicago Fire of 1871

Watch video: Great Chicago Fire



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## Great Chicago Fire of 1871



- Chicago – 300 fatalities, 18,000 buildings destroyed, 100,000 people homeless.
  - Increased fuel sources allow for rapid progression
    - Wood construction
    - Stored flammables for cold months
    - Flammable liquids on river
  - Insurance Companies
  - "Great Rebuild"



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## Iroquois Theater Fire

Watch video: Iroquois Theater Fire



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## Iroquois Theater Fire



- Chicago, Illinois – Dec. 30, 1903
- Over 600 fatalities
- 5-Week old Building
  - 2,000 Occupants
  - "Fireproof"
- Show Curtains
- 27 Exits Hidden by Curtains
- No Lights
- Exit Paths blocked or unfinished



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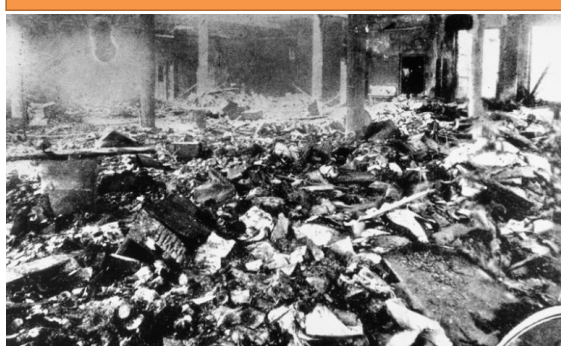
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## Triangle Shirtwaist Fire

Watch video: Triangle Shirtwaist Fire



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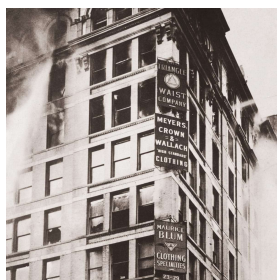
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## Triangle Shirtwaist Fire



- March 25, 1911
- 146 Workers Killed
- 8-10<sup>th</sup> Floors of Asch Building in Manhattan
- One Fire Escape that failed
- Locked Exits
- Public Outrage



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## Triangle Shirtwaist Fire



- In response to the tragedy, workplace safety legislation was introduced, and the ASSP was born...
  - first in 1911, as the United Association of Casualty Inspectors
  - renamed as the American Society of Safety Engineers in 1914
  - renamed as the American Society of Safety Professionals in 2018



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## History



- 1966: Wingspread Conference on Fire Service Administration, Education, and Research - Wisconsin
  - Statements of national significance to the fire problem in the United States
  - Certain individuals recognized the need for a comprehensive study in the area of fire service administration, education and research
  - Formed an Ad Hoc Committee to isolate and define some of the major problems so that additional research and study could be done
- 1968: Fire Research and Safety Act
  - National Commission on Fire Prevention and Control established by Congress
  - Statute petitioned a nationwide collection of comprehensive fire data
- 1973: "America Burning" Report

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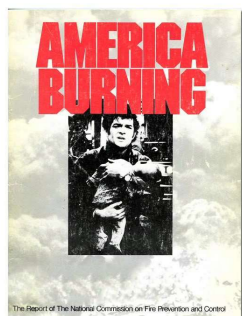
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## America Burning





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## America Burning



- National Commission on Fire Prevention and Control - 1973
  - 6,200 people died in fire
  - 100,000 people injured
  - \$11 billion in property damage
- Industrialized Nations
- Economics
- Building Materials
- Environmental

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## America Burning



- Ignorance and Indifference
  - Lack of understanding of the threat accounts for low priority given to fire protection
- Fire Service
  - Unaware of newer technology
  - Lack of promoting prevention
- Public
  - Firefighters are heroic fire rescuers suppressors not preventers
- Building Designers & Owners
  - Little given to prevention in design and upkeep
- Federal Government / Programs

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## America Burning



- Social Changes
  - Urbanization
    - Outgrowing fire fighting capabilities
  - Militancy of Firefighters
    - Unionization
  - Technological Revolution
    - New materials = Unknown hazards

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## America Burning



- Prevention Needs Priority
  - 95 cents of every dollar spent on fire services is used to extinguish fires... (p. 7)

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## America Burning



*"This commission believes that a reduction of 50% in deaths, injuries, and property losses is quite possible within the next generation." (p.8)*

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## America Burning Recommendations



- Establish a U.S. Fire Administration
- More emphasis on prevention
- Fire service needs better training
- More public education
- The design and materials of our environment presents hazards
- The fire protection features of buildings need to be improved
- Important areas of research are being neglected
- The need for scientific fire data
- 90 total recommendations

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## America Burning



- 1973: America Burning
  - Fire Prevention & Control Act – 1974
    - Created a national "over-seer" for the administrative and organizational parameters of local and State government firefighting entities
  - National Fire Prevention & Control Administration
    - 1978: renamed as the United States Fire Administration
      - Manages federal firefighting programs
      - Data collection
      - Fire education
      - Grants and funding
  - National Academy for Fire Prevention and Control
    - 1979: National Fire Academy
      - Advance professional development of fire service personnel
  - National Fire Data Center
    - National Fire Incident Reporting System

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## Since America Burning



- 1987: America Burning Revisited
  - Reach a consensus about the status of, and trends in, America's fire problem
  - Review and evaluate the progress toward the 90 recommendations
  - Recommend guidelines for local, state and federal efforts to reduce the life and property loss from fire

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## America Burning Revisited



- Published in 1987
- Declining Demand for Fire Suppression Services
- Increasing Demand for EMS
- Increasing Demand for hazardous material response
- Increasing Demand for Disaster Preparedness
- Declining Community Resources

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## Since America Burning



- 1998: Blue Ribbon Panel
  - An indictment of FEMA and USFA's leadership for failing to properly fund, staff and support the fire programs
- 1999: America Burning Recommissioned
  - Reexamine the role of the nation's fire service community

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## Case Studies



- The Station Night Club Fire
- The Ghost Ship Fire
- Cocoanut Grove
- Beverly Hills Supper Club

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## The Station Nightclub Fire



- W. Warwick, RI, on February 20, 2003
- <https://www.youtube.com/watch?v=bknYdprA9ug>
- NIST - National Institute of Standards and Technology
  - Non-regulatory agency of U.S. Department of Commerce
  - To promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.
- [Recreated Without Sprinklers](#)
- [Recreated With Sprinklers](#)

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