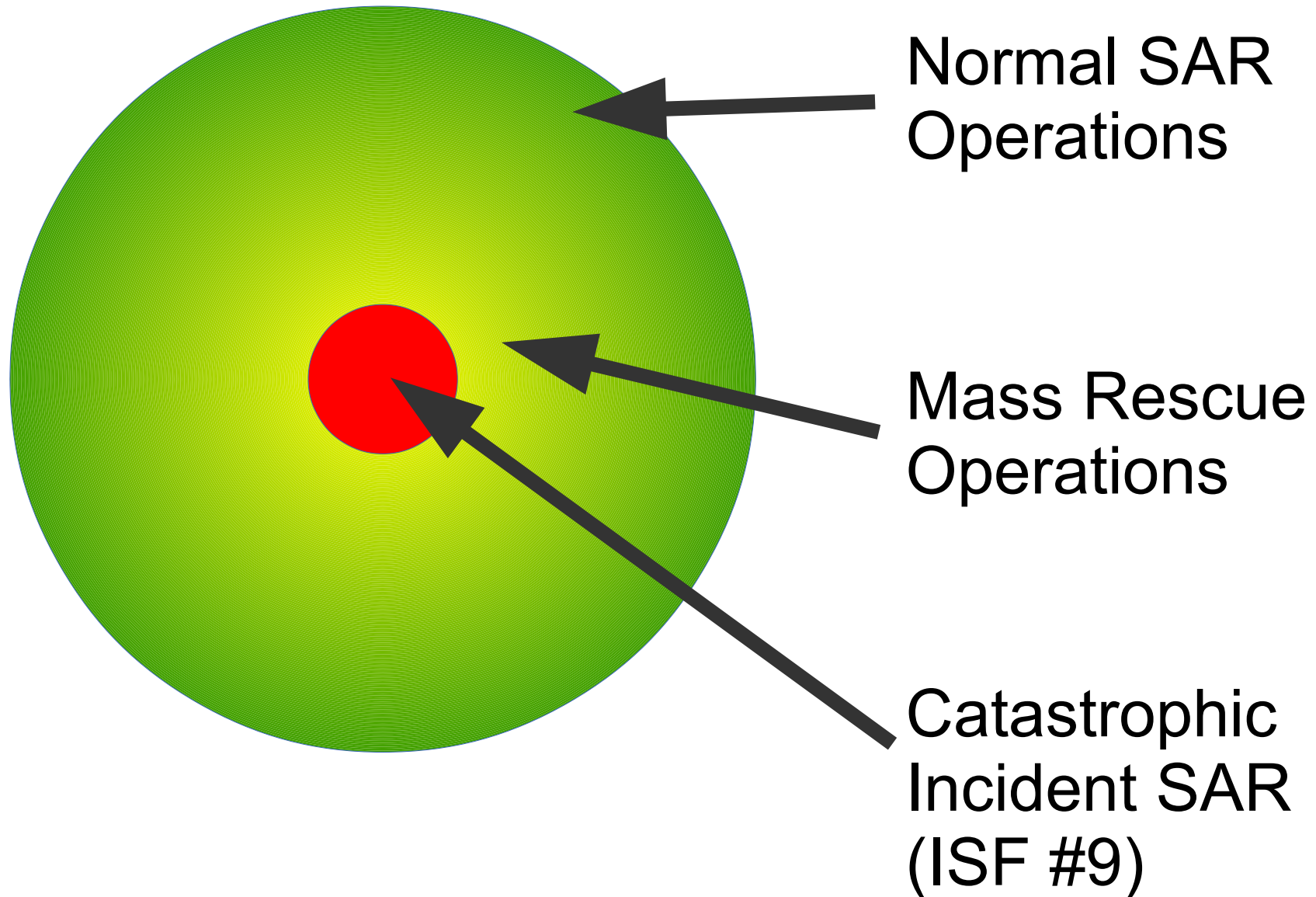


# Catastrophic Incident Response



09/04/2005

# The Olive model for SAR incidents



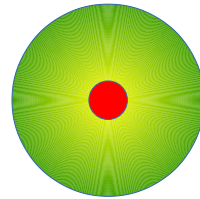
# Wide Area Search

- Large area affected
- Unknown number of victims
- Local resources overwhelmed
- Response requires a variety of resources

Catastrophic Incident Search and Rescue  
Addendum to the US National Supplement to  
IAMSAR

# Contrast between Normal SAR operations and Wide Area Search

## Missing Person / Wilderness SAR



## Wide Area Search / Catastrophic Incident

- Large area, **but not affected**
- **Known small number of subjects**
- Local resources **may be insufficient**
- Response requires variety of resources

- Large area **affected**
- **Unknown** number of victims
- Local resources **overwhelmed**
- Response requires variety of resources

# Hazards

- Downed Powerlines
- Flooding
- Raw sewage
- Collapsed Structures
- Damaged Structures
- Roads blocked by debris
- Downed Trees
- Weather
- Loose Animals
- Criminal Activity
- Hazardous Materials
- Civil Unrest
- Damaged Trees overhead
- People



# Exposures

A large outdoor festival or campsite with many tents and people, overlaid with a list of exposure-related terms. The scene is filled with colorful tents and people, suggesting a crowded event. The ground is muddy and littered with trash, indicating a lack of proper waste management. The overall atmosphere is one of a large-scale gathering with potential environmental and health risks.

- Hazardous Materials
- Communicable Diseases
- Hazard Awareness
- Prevention
- Exposure Reporting

# Mitigation

- Coordinated Response under ICS
- Operational Risk Management
- Lookouts, Communications, Escape Routes, Safety Zones
- Responder Health and Welfare
  - Fatigue: work/rest cycles, sleeping areas
  - Water
  - Sanitation
  - Food
- Personnel Accountability



# LCES

- A tool to help you maintain situational awareness
- Lookouts
- Communications
- Escape Routes
- Safety Zones

# Accountability

- Sign in
- Personnel Accountability Reports (PAR)
- Nobody goes anywhere alone.

# Initial Response/Management

- Intelligence
  - Information that can be used to set operational objectives
- Reconnaissance
- Master Map
- Manage By Objectives
  
- What is the affected area?
- What is the Scope and Complexity of Damage?
- What Resources are needed?

# Reconnaissance Information Gathering Only

- Organized, Structured Survey
- Preliminary, and Cursory
- Timely Reporting
  - Communications – runners if necessary.
- Immediate and Continuous
- Methods driven by incident and resources
  - Air, Water, Ground (windshield survey).

# Reconnaissance Teams

- Small, Mobile, Flexible
- Inconspicuous
- State Of Mind:
  - Not Search, Not Rescue
  - Not Providing Treatment
  - Goal: Provide a snapshot of the entire event in order to drive the response effort
  - Goal: Do the most good for the most people by rapidly and efficiently determining the scope of the event and resource needs for the response.

# Overview of Response

- Scope of incident, Resource Needs
  - Intelligence, Recon, Master Map
- Segment Map
- Objectives, Resource Requests
- Hasty Search (hasty **area** search of segments)
  - Locate
- Special Response Teams
  - Targeted known concentrations of victims or special needs
- Primary Search
- Secondary Search

# Information Gathering

Reconnaissance

# Search

Hasty Search

Primary Search

Secondary Search

Special Response Teams

# Rescue

Rescue Operations (Access, Stabilize, Transport)

Time

Incident

**Greatest Needs**

**Most Resources**



# Hasty (rapid WAS) search

- Fast paced, methodical
- Locate and send to collecting point easily  
extricated victims
- Mark victims that need extrication and move on
- Document and report



# “Hasty”, similar, but different

- Lost Person Incident
  - Hasty Search:
    - Primarily Route Searches
    - Can be area searches near IPP
    - Can be point searches.
    - Search effort is typically coverage of 1 for areas searched.
    - Sound Sweep/Hailing depending on subject behavioral profile
- Catastrophic Incident
  - Hasty Search:
    - Area Searches
    - Locate Only
    - Fast Paced
    - Hailing Search
  - Special Response Teams
    - Similar to Lost Person Hasty Search to points of high probability/risk.

# Hailing Search

- Spread around structure/area
- Close eyes and listen to background noises
- One person calls out
  - Identify as searchers
  - Tell victims to call out or make noise
- Everyone else listens and points at noises.
- Leave people pointing in place, move others and repeat to localize source.

# Special Response Team

- Targeted Response to likely high concentrations of victims or special needs
- Examples
  - Hospitals
  - Nursing Homes
  - Evacuation Shelters within the affected area
  - Areas of last refuge
- Team composed for the specific task

# Primary Search

- Quick Search, Exterior
- Walk (or boat) around structure
- Look in windows/openings
- Scan surface debris
- May be Physical, Canine, or Technical
  - Physical including Hailing search
- Treatment of immediate life threatening injuries
- Mark victim locations, call in additional resources to rescue victims

# Secondary Search

- Systematic search of enclosed areas
  - All rooms in all structures.
  - All void spaces in all collapsed structures.
  - Tornado Shelters

# Search Squads/Strike Teams

- Functional roles:
  - Leader
  - Medical, Communications, Documentation
  - Local area knowledge
  - Force Protection
- Maintain Span of Control
- Search: Fast, Agile, Mobile

# Task Status Reporting (Typically Hourly)

- PAR
- Current location
- Percentage of assignment completed
- Estimated completion time

# Search Techniques

- Physical – human ground searchers
  - visual
  - hailing
- Canine
- Technical
  - Listening Devices
  - Viewing Devices



# Markings



# Victim Markings



Potential Victim

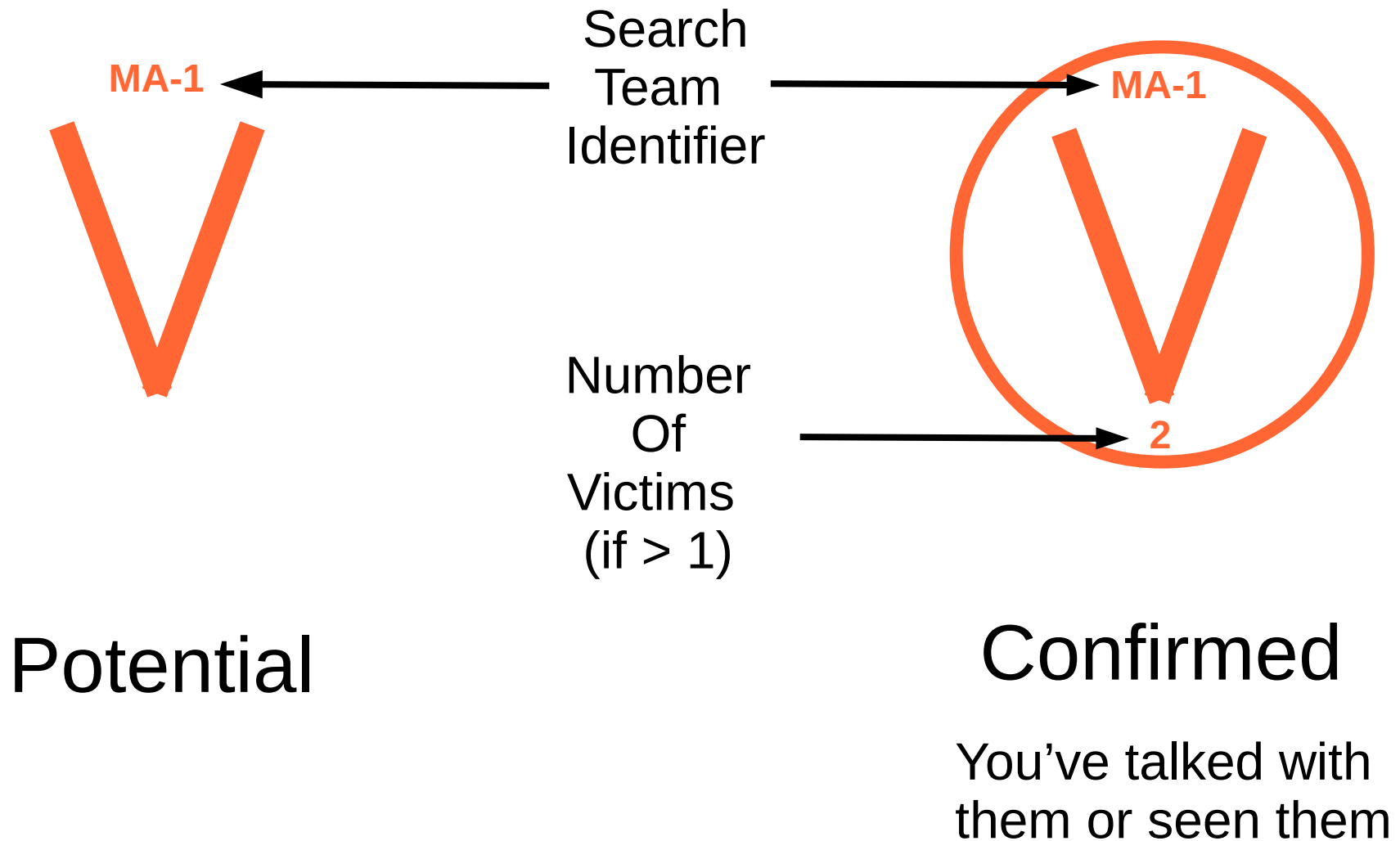


Confirmed Victim

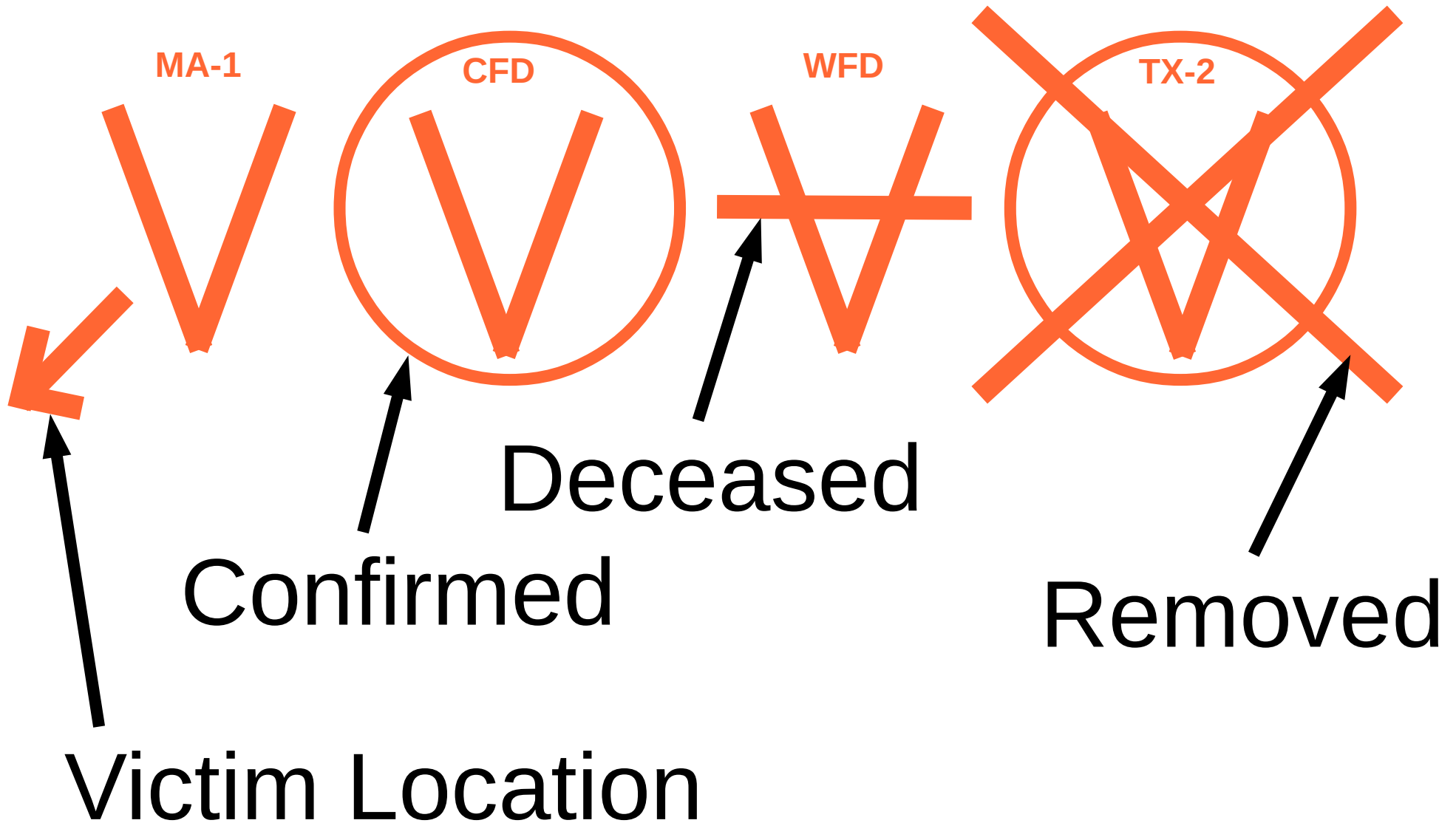


Victim Removed

# Victim Markings



# Victim Markings



# Search Markings

~~MA-1  
19-09-17  
2230~~

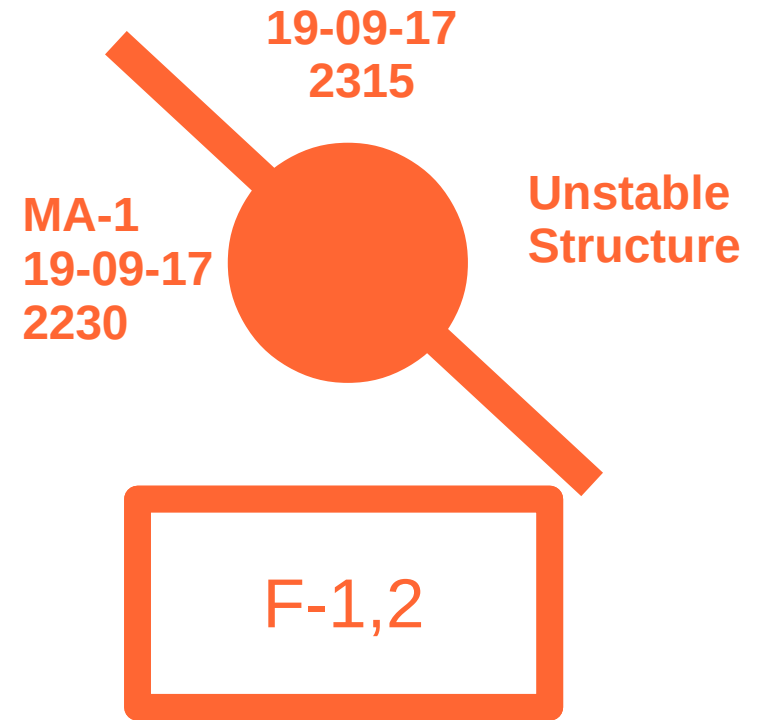
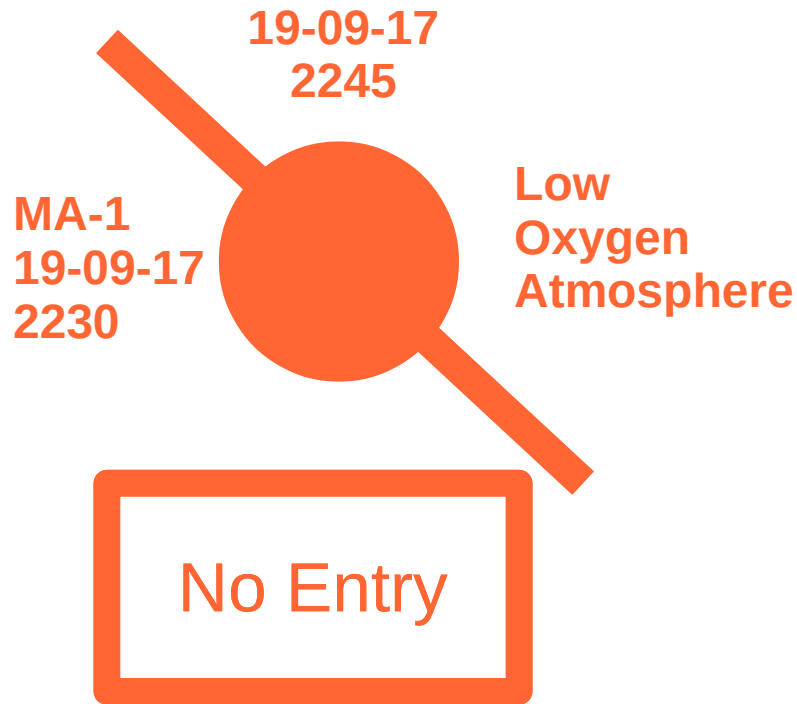
~~19-09-17  
2315  
MA-1  
19-09-17  
2230  
0~~

~~19-09-17  
2315  
MA-1  
19-09-17  
2230  
1-L  
2-D~~

Primary

Secondary

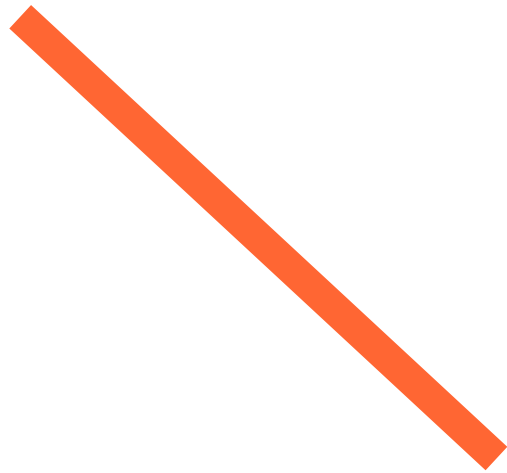
# Incomplete Search Markings



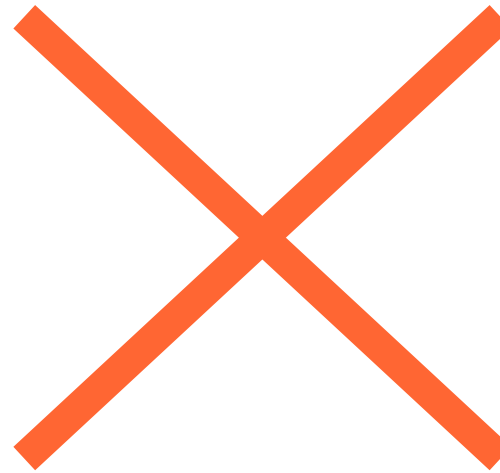


9-12  
CA  
O

# Search Markings: Interior



Entry into Room



2-D

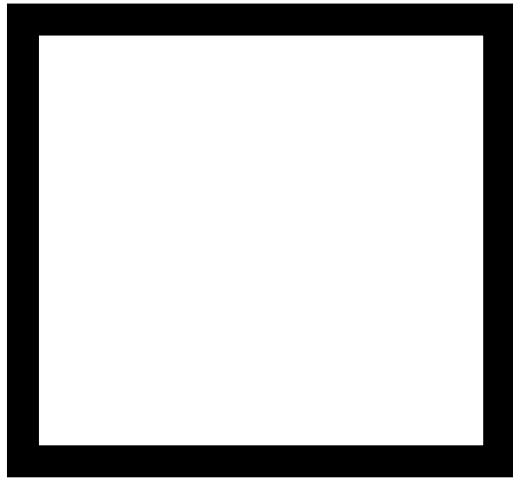
Exit from Room

## Use a Right-Hand Search

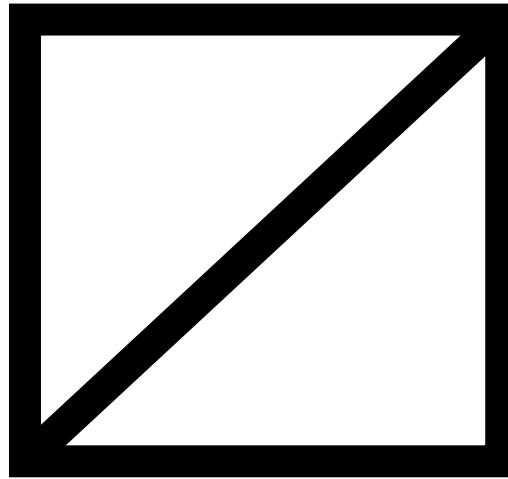


# Structure Markings

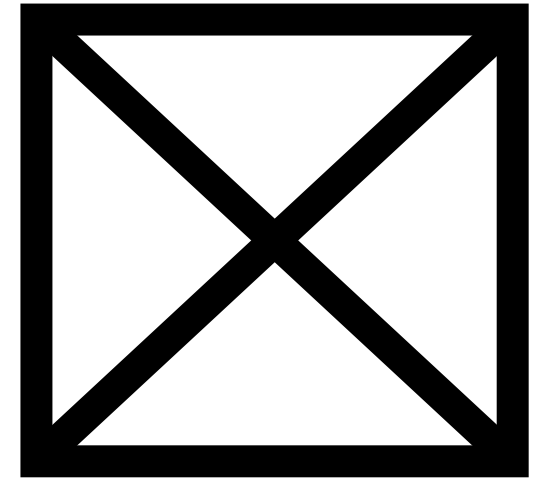
(made by USAR Structural Engineers)



Low Risk  
For USAR  
Operations



Medium Risk  
For USAR  
Operations



High Risk  
For USAR  
Operations

# Further Training

- Wide Area Search Course (TEEX)



2-9-20

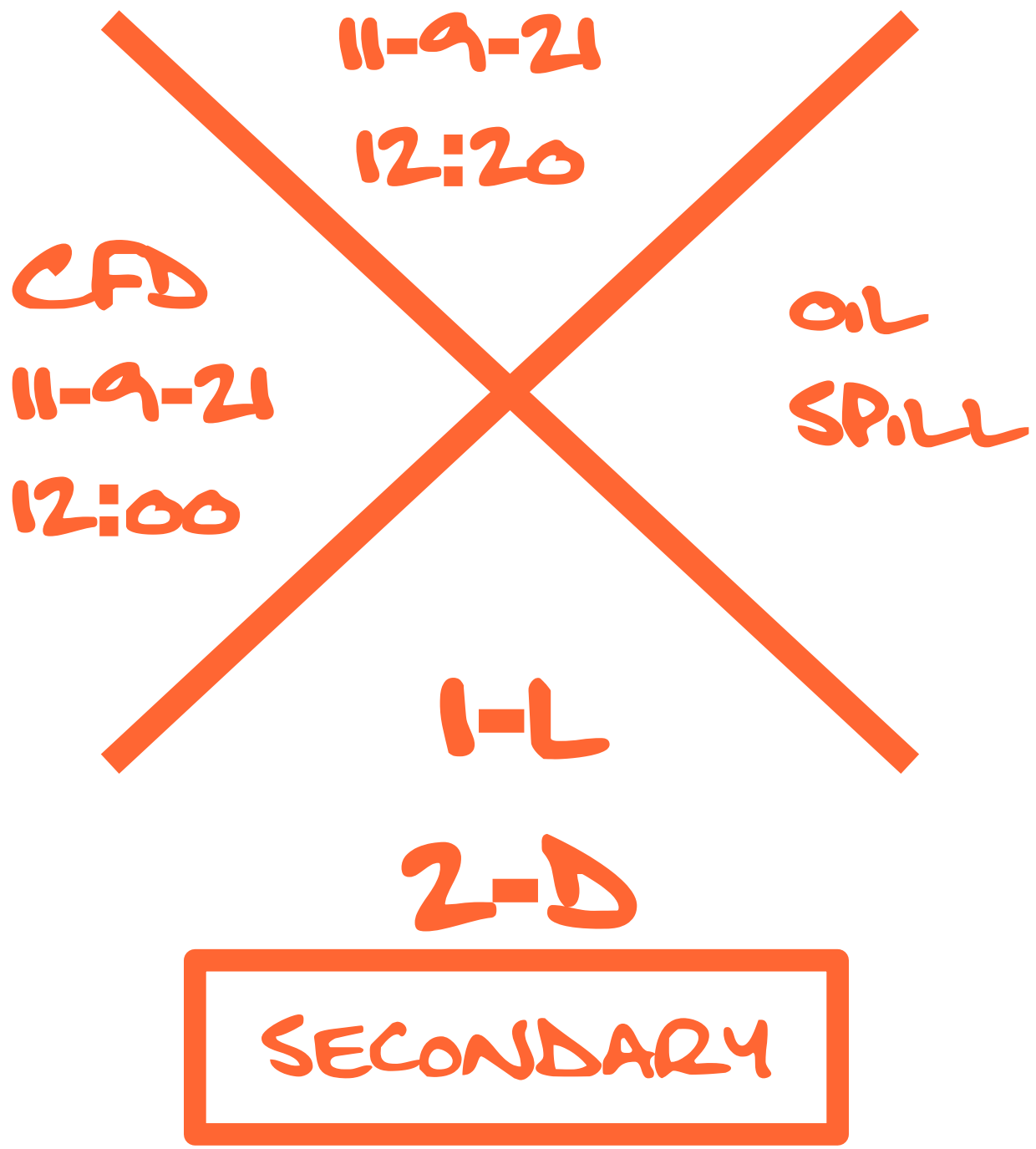
11:15

TX-1

2-9-20

10:30

1-L



~~9-8-20  
12:10  
LFD  
9-8-20  
12:00  
GAS  
LEAK  
I-L~~

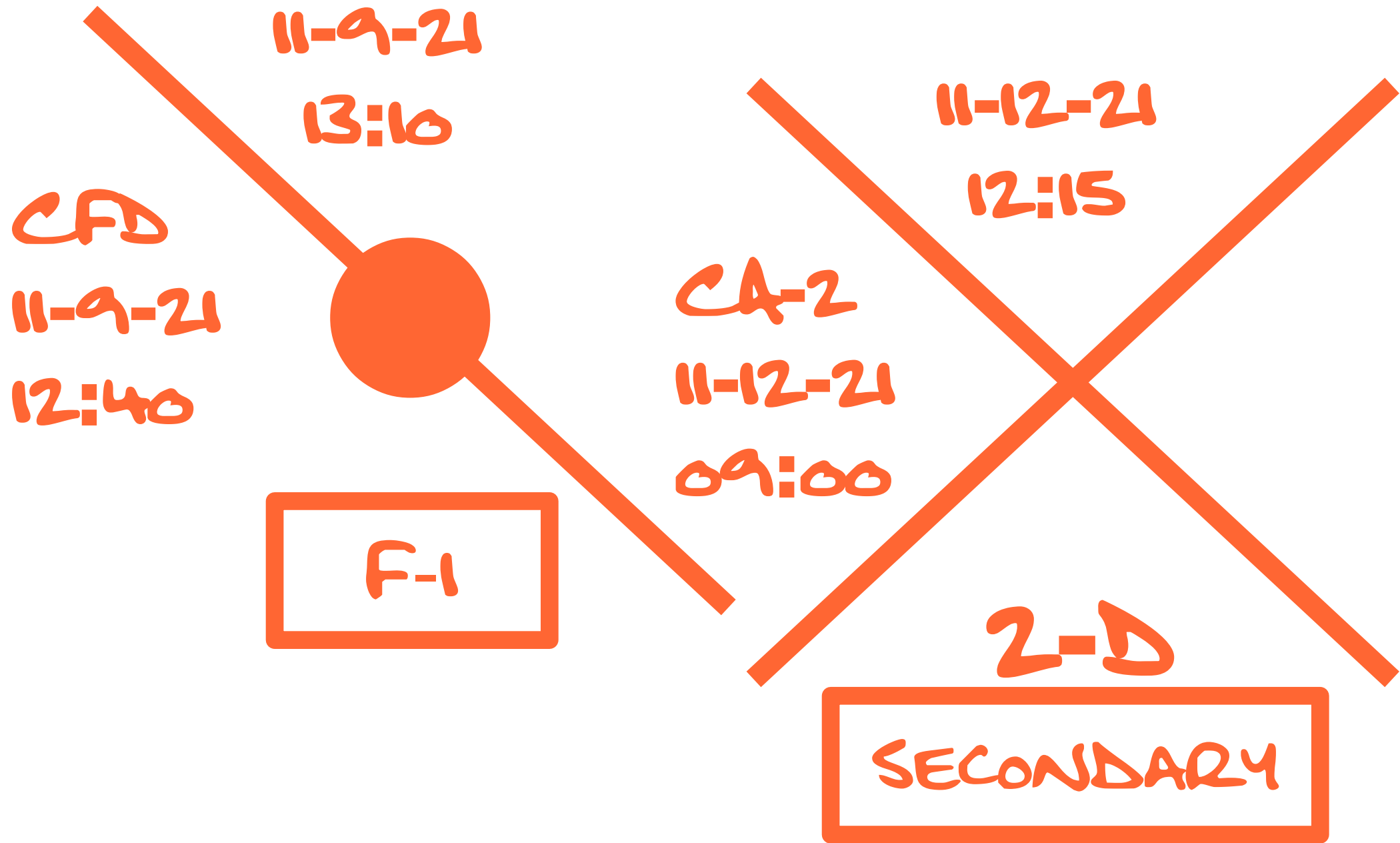
PRIMARY  
NO ENTRY

AFD

4-6-21

18:30



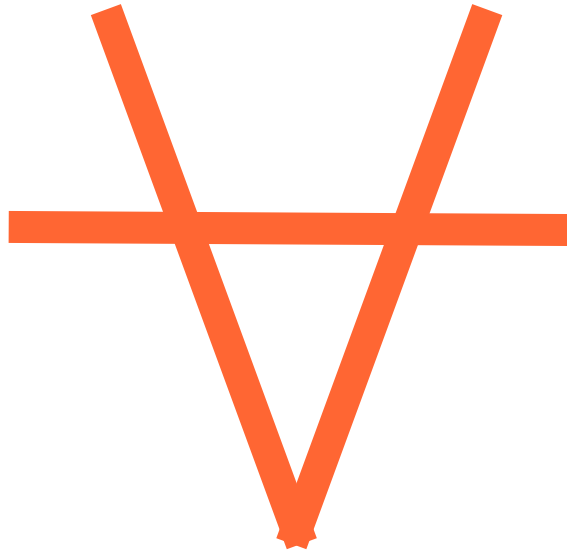




WFD



WFD

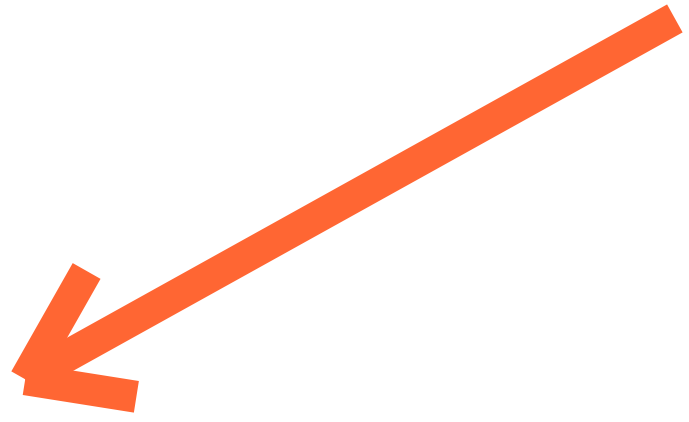




WFD



2









# Draw the Marking

- Secondary Search Entry by Acton Fire at noon today.
- Search exit at 12:30
- Found no victims



# Draw the Marking

- Secondary Search Entry by CATF-1 at 16:00 today.
- Search exit at 16:30
- Found one live and two deceased victims.
- Hazardous materials

# Draw the Marking

- Knocking noises consistent with a Live Victim heard in response to a hailing search by Lancaster Fire.

# Draw the Marking

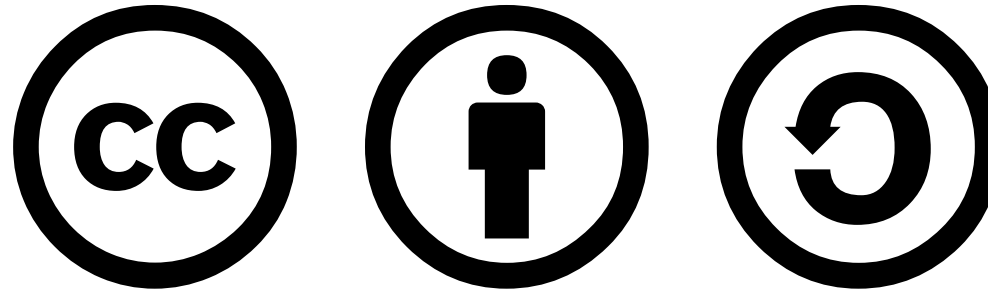
- One Live Victim seen trapped by Lancaster Fire.
- One Live Victim self extricated and walked out to collection point while Lancaster Fire was doing a hailing search.

# Draw the Marking

- Two Live Victims and 3 Deceased Victims Seen by Ayer Fire.

# Draw the Marking

- One Live Victim and 2 Deceased Victims Seen by Ayer Fire.
- Live Victim removed by Cambridge Fire.



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