



GLASTONBURY FIRE DEPARTMENT
STANDARD OPERATING GUIDELINES



SOG NUMBER: TRG-001 ISSUED DATE: 06-28-04 EFFECTIVE DATE: 06-28-04
REVISION #: 2 REVISED DATE: 01-11-16 EFFECTIVE DATE: 01-11-16
CATEGORY: TRAINING
SUB-CATEGORY: TRAINING FACILITY
SUBJECT: LIVE BURNS

Section I – Introduction

A. Objective

This document is intended to provide minimum expectations and requirements for the safe conduct of live fire evolutions at the Glastonbury Fire Department Training Facility. This SOG directly relates to conducting live fire training including preparation, planning, execution, and follow-up as detailed within.

NOTE: This document is intended to be used in conjunction with applicable sections of the National Fire Protection Association Standard 1403 (2002 edition) – Standard on Live Fire Training Evolutions in Structures.

B. Applicability

This document applies to all live fire training evolutions conducted at the Glastonbury Fire Department Training Facility. This document also applies to any training conducted in any portion of the building where the atmosphere differs from normal exterior conditions. All department personnel are expected to adhere to this document and all department officers are required to enforce the provisions contained herein.

NOTE: This document should be considered a minimum guide. Nothing herein is intended to exonerate the fire department or the instructor-in-charge from any liability or exceeding the requirements in the interest of safety while conducting a live burn scenario.

C. References

National Fire Protection Association Standard 1403 – Standard on Live Fire Training Evolutions in Structures (2002), Chapters 1, 2, 3, 6, 9

National Fire Protection Association Standard 1500 – Standard on Fire Department Occupational Safety & Health

National Fire Protection Association Standard 1561 – Standard on Fire Department Incident Management System (2002)

Code of Federal Regulations, Title 29, 1910.156

Fire Facilities Inc., Training Tower Maintenance Guideline (November 6, 2001)

Fire Facilities Inc., Training Tower Guidelines

Section II – The Training Facility Grounds and Operations

The operation of the Glastonbury Fire Department Training Facility will be the responsibility of the Deputy Chief of Training.

The Deputy Chief of Training will be responsible for operations and training held at the Training Facility. The Deputy Chief of Training will qualify Burn Instructors and approve burn lesson plans.

The Deputy Chief of Training will be responsible for:

- Scheduling
- Logistics
- Maintain Qualified Instructor Lists
- Ensure students meet minimum training requirements
- Approve and Maintain Burn Checklists
- Ensuring OSHA/NFPA/SOG Requirements
- Recordkeeping

Section III – The Burn Building

The Glastonbury Fire Department Burn Building is a non-combustible structure designed specifically to handle the uncommon building stresses imposed by live fire conditions. All live fires within the building will be confined to two rooms designated as burn rooms (rooms 2 & 5, detailed below). Remaining sections of the building may be used for training evolutions that are in agreement with the construction and configuration of the building section. At no time should a training evolution subject the building to stresses for which it was not designed.

Configuration of the building is as follow:

First Floor

Room 1 – Main Room

This room is approximately 22' x 22'. It has movable partition walls to allow the creation of smaller rooms. No Burning is allowed in this room. There are two exterior doors on the A Side and one on the C Side of this room. There is a set of stairs leading to the second floor Main Room (Room #4) located on the D Side of this room along the Burn room wall. The room includes a "hallway" along the C Side of the building that leads to

Rooms 2 – Burn Room

This room is the burn room for the ground floor. It is approximately 12' x 12'. The room contains 3 temperature pyrometers located at the ceiling, mid level and floor level. Their readings are displayed on the main control panel located by the door on the C Side (readings 1, 2, 3). There is one window in this room, located on the A Side. It opens to the outside. The two interior doors in this room are equipped with closing springs.

Room 3 – Annex

This room is to be used for storage when the building is not in use. It can also double as another evolution room for search, etc. No Burning is allowed in this room. There is one exterior door located on the B Side. The interior door from the Room 1's "hallway" can be locked.

Second Floor

Room 4 – Main Room

This room is approximately, 12' x 12'. It has movable partition walls to allow the creation of smaller rooms. No burning is allowed in this room. The B Side of this room serves as the second level of the tower. There are two exterior doors, on the B and D Sides of this room. The doors lead to stairs descending to outside. There is a set of stairs leading to the third floor of the tower building located against the D Side wall. There are also stairs leading to the ground floor located on the B Side of the main room, adjacent to the Burn Room wall. The room includes a "hallway" that leads to the Annex roof access exterior door on the B Side of the room. In addition, the hallway contains a roof access ladder that runs up to a Bilco hatch. The hatch leads to the flat portion of the roof over the room.

Room 5 – Burn Room

This room is the burn room for the second floor. It is approximately 12' x 12'. It contains 3 temperature pyrometers located at the ceiling, mid level and floor level. Their readings are displayed on the main control panel located by the door on the C Side (reading 4, 5 and 6). There are two windows in this room, located on the A Side and B Sides. They open to the outside. The interior doors in this room are equipped with closing springs.

6- Annex Roof

The annex roof is reached from the Main Room "hallway". The exterior door opens out. The roof in this area is flat. There is a set of exterior stairs leading from this roof to the ground. The stairs run along the C Side of the building.

Third Floor

7- Tower Level #3

The third level of the tower consists mainly of the stairs leading from the second to the fourth floor of the tower and the hallway between them. The area is approximately 22' x 12'. There is one window on the A Side. There is also an access door (not a full size door) on the side of the tower area that leads to the attic. This door opens into the tower.

8 – Attic

The attic is approximately 22' x 11'. There are three access doors (not full size) in the attic. One leads to the tower. The other two lead to the flat roof area over the Burn Room and Main Room on the second floor. There are two open roof hatches in the attic roof. These hatches can be covered with roof mockups. The floor under one of the roof mockup hatches is open and can be covered with a ceiling mockup.

9 – Roof

The roof area is flat. It contains a hatch that leads to the second floor Main Room. There are two access doors to this area leading from the attic. The roof is surrounded by a parapet. There is a break in the parapet on the A Side.

Fourth Floor

10- Tower Level #3

The fourth level of the tower consists mainly of the stairs leading to the fourth floor of the tower. The area is approximately 22' x 12'. There is one window on the A Side. In addition, there is a roof access ladder that runs up to a Bilco hatch. The hatch leads to the tower roof. The building ventilations fan is located at this level on the D Side wall.

Fifth Level

11 – Tower Roof

The tower roof is reached from the access ladder located on Level 4. The roof is surrounded by a parapet. There is a break in the parapet on the C Side.

Section 4 – Interior Live Fire Evolution Participant Personnel Prerequisites

All participants will need to have received documented training in the following subjects prior to taking part in any interior live fire evolutions:

- Safety
- Fire behavior
- Portable extinguishers
- Personal protective equipment
- Ground ladders
- Fire hose, tools and appliances
- Fire streams, nozzles
- Overhaul
- Water supply
- Ventilation
- Forcible entry

Live burn evolutions will require the assignment of responsible persons working in the following capacities:

1. Instructor-in-charge
One required at all live fire evolutions
2. Safety Officer
A minimum of one required at all live fire evolutions
3. Ignition Officer/temperature Monitor
One required at all live fire evolutions
4. Crew Leaders
A minimum of one for each interior crew
Crew leaders may lead no more than five (5) persons
5. Participants

Persons working in live fire evolutions must meet the following prerequisites:

1. Instructor-in-charge

CT Fire Academy Certified Instructor I
Certified Incident Safety Officer
Experience and demonstrated competency in leading
Formally qualified by the GFD Chief Training Officer

2. Safety Officer

Certified Incident Safety Officer
Experience and demonstrated competency in leading
Formally qualified by the GFD Chief Training Officer

3. Ignition Officer/Temperature Monitor

Firefighter I certified
Formally qualified by the GFD Chief Training Officer

4. Crew Leader

Firefighter I certified
Minimum of two years of active firefighter experience
Formally qualified by the GFD Chief Training Officer

The Deputy Chief of Training will maintain a list of persons qualified to work in each of the above positions

Persons working in live fire evolutions are required to perform the following at a minimum:

1. Instructor-in-charge

- Ensure Command communications
- Plan & coordinate all training activities
- Maintain control of all personnel
- Overall burn scenario management
- Make personnel assignments
- Minimum 1 EMS (EMR level or greater) person on standby at all times
- Conduct pre-burn briefing and facility tour
- Identify rehab and medical station
- Brief instructors regarding responsibilities
- Ensuring completion of all checklist items
- Ensure compliance with provisions of this SOP
- Order lighting of fire after consultation with the Safety Officer

2. Safety Officer

- Discourage, prevent and eliminate unsafe acts
- Enforce proper use of PPE and SCBA
- Terminate unsafe conditions through the Incident Commander
- Immediately halt dangerous acts
- Work with Ignition Officer to fuel, refuel and light fires

3. Ignition Officer/Temperature Monitor

- Check temperature monitor for proper operation prior to burn
- Change batteries as necessary
- Fuel, refuel and light fires
- Monitor the temperature monitor
- Report temperature greater than 800 degrees Fahrenheit to Safety Officer

4. Crew Leader

- Manage and lead a tactical assignment
- Ensure Radio Communications to Command
- Execute assigned tactical objective(s)
- Ensure crew compliance with safety requirements
- Maintain crew accountability
- Maintain discipline within their assigned crew
- Head count going in; Head count coming out

Section V – Interior Live Fire Evolution Participant Equipment Prerequisites

All participants will be equipped with complete personal protective equipment meeting requirements of CFR 1910.156 and CFR referenced NFPA Standards. In addition, all participants will properly wear a nomex hood.

All participants will properly use a Self-Contained Breathing Apparatus (SCBA) meeting the requirements of NFPA 1981. All personnel will utilize their SCBA when the atmosphere is suspected of:

- Being immediately dangerous to life of health (IDLH)
- Consisting of carbon monoxide levels greater than 35 PPM
- Having an air temperature exceeding 120 degrees Fahrenheit
- Containing visible airborne particulate (smoke or ash)
- Having the possibility of rapidly deteriorating to IDLH

All participants will properly use a Personal Alert Safety System device (PASS) that is either built into their SCBA or attached to their SCBA that meets the requirements of NFPA 1982.

Section VI – Interior Live Fire Preparations

All live fire training evolutions shall be part of an objective based training program or company drill. Live fire objectives and tactics must be based on GFD/NFPA approved operations.

Persons desiring to conduct a live fire evolution must schedule and coordinate the burn with the Deputy Chief of Training. Request for burns will be considered only after completion of the appropriate form (Annex A –

Glastonbury Fire Department Burn Plan) or by the use of an existing approved lesson plan by the Deputy Chief of Training.

All requests or burns must include a lesson plan. Components of this plan must consider the checklist minimum requirements for a burn.

No live fire evolutions may take place without the express consent of the Deputy Chief of Training.

Section VII – Interior Pre-Burn Live Fire Evolution Requirements

To Set-up a Burn Drill

- Schedule with the Deputy Chief of Training
- Get approval for the lesson plan by the Deputy Chief of Training
- Ensure Instructor & Student Qualifications
- Ensure Logistics – Fuel, Flares, Water

Conduct Immediately Prior to the Live Burn

The Instructor-in-charge is responsible for making a complete visual inspection of the building. The inspection shall be documented on the Glastonbury Fire Department Live Fire Checklist (Annex B). It is the responsibility of the Instructor-in-charge to ensure that all of the GFD Live Fire Checklist items are accounted for at the appropriate time.

It is of vital importance that the burn room insulation panels be checked for proper mounting hardware tension during the building inspection. The fasteners must be loose and move freely. Any impediments to the training evolution will be remedied prior to proceeding.

ALL EXIT DOORS AND WINDOWS MUST BE MAINTAINED IN OPERABLE CONDITION AND UNLOCKED DURING BUILDING OCCUPANCY!

The Instructor-in-charge will secure a weather forecast prior to the planned exercise. Live burn evolutions will not be permitted:

- When wind conditions prohibit proper control of the fires
- When temperatures falls below 32 degrees F. inside the structure
- When the heat stress index is greater than 90 degrees

Section VIII – Interior Live Fire Evolutions

Evolutions will not deviate from the written plan.

All participants will be provided with a copy of the written plan prior to the burn.

A pre-burn briefing will be held.

All participants will participate in an Instructor-in-charge guided walk-through of the building prior to the first burn.

Exits from each room will be detailed.

The burn plan and tactical assignments will be detailed.

Water Supply

Two independent water supplies must be established.

Primary water supply shall consist of one of the following:

1. Supply pumper feeding the yard hydrants or hose lines from the pond
2. Apparatus tank water supplemented by a charged line from a pumper drafting at the pond

Secondary water supply (to RIT team hose line) will consist of one of the following:

1. A minimum of 1000 gallons of apparatus tank water
2. One, or more, apparatus with a combined static 1000 gallon water supply pre-connected to the RIT line
3. A second supply (drafting) pumper supplying a hose line capable of supplying 150 GPM to the RIT line

Complete failure of any part of one of the above water systems will not affect the other system.

The required fire flow by the National Fire Academy formula is 50 GPM per burn room in use. Hose lines must be 100 GPM minimum.

NOTE: Primer oil must be captured, not allowed to pollute pond.

Fire Fuel

- Maximum fuel load shall consist of 100 pounds of Class A materials including 1/3 bale of dry hay or straw and three wood pallets.
- Small quantities of wet hay may be used to produce additional smoke.
- Chemically treated wood, plastic and tires are NOT permitted.
- Highway flares will be utilized to light the fires.
- Combustible or flammable liquids are NOT permitted!

Search and Rescue evolutions will NOT be conducted with human beings used as victims.

Section IX- Interior Live Fire Post Evolution Requirements

All fire debris shall be removed from the building and disposed of in accordance with the instructions of the Instructor-in-charge.

A complete walk-through inspection of the building shall be conducted by the Instructor-in-charge. Documentation of any damage shall be forwarded to the Deputy Chief of Training.

All doors and windows will be secured.

Participants may be dismissed after a final accountability check and injury survey.

Section X – Burn Building Maintenance

The Deputy Chief of Training or his/her designee will be the sole contact for maintenance and repair operations associated with the burn facility.

Absolutely no modifications, additions or repairs will be permitted without the express consent of the Deputy Chief of Training.

The Deputy Chief of Training will have the Burn Building evaluated and documented by a professional engineer processing expertise in burn building evaluation as required by NFPA. The Deputy Chief of Training may have the Burn Building evaluated more frequently.

At the discretion of the Deputy Chief of Training all insulation will be removed from the burn rooms at least every five (5) years for inspection of surfaces under the linings.

Section XI- Mutual Aid Burn Drills

Mutual Aid Departments may use the Burn Facility with the Glastonbury Fire Department. All requests must be submitted to the Deputy Chief of Training. Burn plans and Instructor assignments must be reviewed by the Deputy Chief of Training.

Mutual Aid Fire Departments will be allowed to train with the Glastonbury Fire Department at the Burn Building and will follow all aspects of our Burn Policy. A Mutual Aid department will need to supply the Deputy Chief of Training with the following documents – Proof of Insurance, Hold Harmless Waiver and a list of participants signed off by a fire officer from the mutual aid department attesting to the minimum required training levels for each participating member as outlined. Mutual Aid departments will also sign off on qualified crew leaders from their department.

Instructions

- A copy of GFD Burn Policy must be reviewed with the Chief of the Mutual Department. He/she must sign the "Burn Waiver – Chief".
- The Mutual Aid Department must provide the Town of Glastonbury a "Proof of Insurance" form.
- The Deputy Chief of Training will maintain a file from each Mutual Aid Department.
- Mutual Aid Departments must certify their crew leaders as outlined in this SOP.
- The Glastonbury Deputy Chief of Training must certify Mutual Aid Department Instructors or other working positions as per our Burn Policy.
- Each participant must sign the "Burn Waiver" on the day before commencing any activities.
- Mutual Aid Departments are responsible for any injuries to their personnel.

There is no charge for the use of the Burn Building but the Department will accept donations of burn tiles (available from Fire Facilities, Inc. 1-800-929-3726) or hay or other equipment that can be used at the Facility.

Section XII – Exterior Live Fire Evolutions

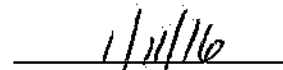
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Section XIII-Approval

Fire Chief



Date of Approval:



Annex A

Glastonbury Fire Department Live Fire Checklist (2 pages)
Live Burn Personnel Assignment
General Fire Department Rules
Diagram
Lesson Plan

Glastonbury Fire Department
Thomas G. Manager, Jr. Fire Training Facility

MUTUAL AID DEPARTMENT FIREFIGHTER'S RELEASE, HOLD HARMLESS AGREEMENT,
COVENANT NOT TO SUE AND PERSONAL CERTIFICATION

As evidenced by my signature below, I understand that my participation in Live Fire Training (the "Training") at the Thomas G. Manager, Jr. Fire Training Facility (Facility) in the Town of Glastonbury (the "Town") is an inherently dangerous activity that could result in serious bodily injury, personal injury, emotional injury, or death. In consideration of permission granted to me by the Glastonbury (the "GFD") and the Town to participate in the Training, and in recognition of the fact that the GFD and the Town have no obligation to permit said participation, I, binding myself and my heirs, executors, administrators and assigns, hereby agree to release and hold harmless and hereby covenant not to sue the Town and/or GFD, their respective officers, officials, employees, agents and members, for any and all loss, damage, expense or cost (including attorney fees) for any kind of injuries, including personal injury, emotional injury, disability and death arising out of or related to my participation in the Training, even if caused by the negligence of the Town or the GFD or their respective officers, officials, employees, agents and members. I assume all risks of using the Facility and participating in the Training.

By my signature below, I hereby certify that:

1. I authorize as the Chief of the _____ Fire Department my personnel to participate in the Training at the Facility.
2. I have read and understand the GFD's Live Burn Policy TRG-001 and that I meet the minimum requirements defined in that policy to participate in the Training and that I will abide by all the provisions of that policy during the Training.
3. I will certify personnel from my department to serve as Crew Leaders as defined by the GFD's Burn Policy (excluding the "Formal Qualification by the GFD Training Chief)
4. I understand this document will serve as my agreement with the GFD to work together with GFD with Mutual Aid drills at the Glastonbury Fire Training Facility.

Printed Name _____ Signature _____

Date _____

Glastonbury Fire Department
Thomas G. Manager, Jr. Fire Training Facility

MUTUAL AID DEPARTMENT FIREFIGHTER'S RELEASE, HOLD HARMLESS AGREEMENT,
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By my signature below, I hereby certify that:

1. I have been authorized by my Chief, or other training supervisor, to participate in the Training at the Facility.
2. I am not an employee or agent of the Town of Glastonbury or the Glastonbury Fire Department, and that I am covered by my own department's Workers' Compensation Insurance Coverage while participating in Training.
3. I am considered by my department's standards to be physically and emotionally fit to perform firefighting evolutions without any special considerations and that I meet the requirements of CFR 1910.120 for the use of self-contained breathing apparatus, and CFR 1910.156 for proper protective clothing.
4. I have read and understand the Glastonbury Fire Departments Live Burn Policy TRG-001 and that I meet the minimum requirements defined in that policy to participate in the Training and that I will abide by all the provisions of that policy during the Training.

Glastonbury Fire Department

Live Fire Checklist

- | | |
|--------------------|--|
| <u>Preplanning</u> | <ul style="list-style-type: none"> Burn plan filed with Fire Training Facility Director <input type="checkbox"/> Purpose and objectives of the burn Analyze apparatus, equipment, & tool needs List of participants – on Assignment Sheet Instructor-in-Charge Safety Officer Ignition Technician Crew leaders Participants (Maximum of five for each crew leader) EMS providers - may be participants, one for each crew Fire attack plan <input type="checkbox"/> Hoseline layouts minimum 100 gpm for each hoseline Water supply plan <input type="checkbox"/> Primary 100 gpm capacity for each hoseline Rapid Intervention Team (Back-up) 150 gpm for each RIT line 1000 gallon static Site configuration <input type="checkbox"/> Completed Lesson Plan filed with Deputy Chief of Training Building inspection <input type="checkbox"/> Condition of doors, windows, protection equipment |
| <u>Set-up</u> | <ul style="list-style-type: none"> Final check weather forecast and conditions <input type="checkbox"/> Above freezing, 90 degree heat stress max., reasonable wind Establish primary water supply <input type="checkbox"/> 100 gpm for each evolution hoseline Establish RIT water supply <input type="checkbox"/> 150 gpm for each RIT hoseline 1000 gallons minimum Position apparatus & hoseline <input type="checkbox"/> Building inspection by instructor-in-charge <input type="checkbox"/> Check all required doors & windows Secure all unused hatches and vertical openings Check required devices and equipment Check electrical circuits Inspect burn room panels for punctures / penetrations Check insulation panels for proper fastener tension |

Live Burn - Personnel Assignments

Date _____

Staff
Instructor-in-Charge _____

Safety Officer _____

Ignition Officer (monitor temp.) _____

Crew Leaders:
Group One _____

Group Two _____

Group Three _____

Group Four _____

Participants

<u>Group One</u>	<u>Group Two</u>	<u>Group Three</u>	<u>Group Four</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

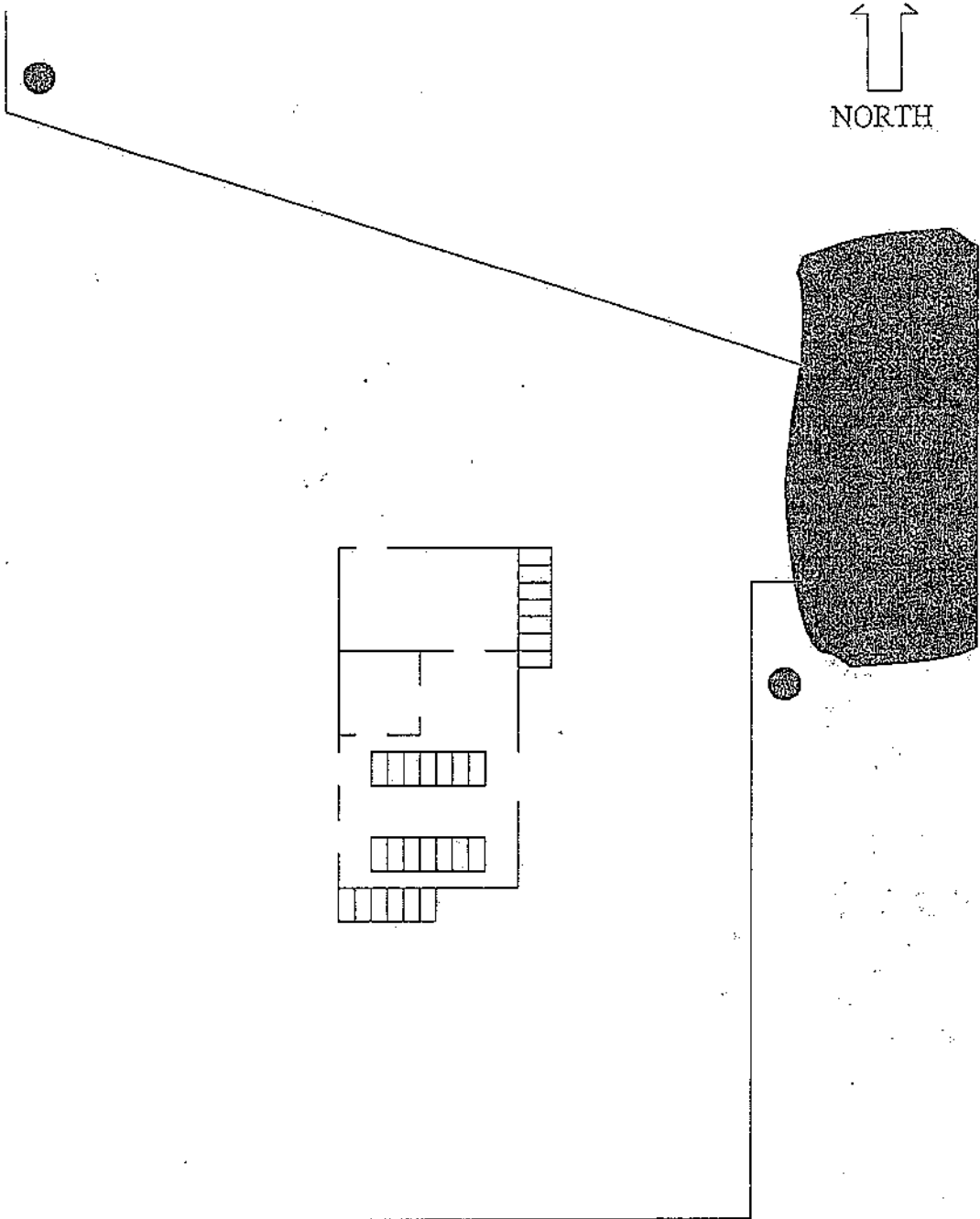
Rotation

<u>First Burn</u>			
Group One	Group Two	Group Three	Group Four
Fire Attack	Search	Vent	RIC

<u>Second Burn</u>			
Group One	Group Two	Group Three	Group Four
RIC	Fire Attack	Search	Vent

<u>Third Burn</u>			
Group One	Group Two	Group Three	Group Four
Vent	RIC	Fire Attack	Search

<u>Fourth Burn</u>			
Group One	Group Two	Group Three	Group Four
Search	Vent	RIC	Fire Attack



Plan must include:

- Command post and rehab / medical area / RIT staging area
- Parking / ingress & egress route maintenance
- Primary & secondary water supply scheme
- Staged & working apparatus location
- Hoseline location, size, flow
- Attack plan