

# Live fire training policy (F4 TRP)

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<b>Date</b>	17 March 2015
<b>Issued by</b>	National Commander
<b>Purpose</b>	To detail the requirements of the National Commander when organising and conducting live fire training.
<b>Requirement</b>	Whenever live fire is to be used as a training medium, this policy must be followed. Area Managers are responsible for ensuring compliance with this policy.

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## Guideline

The [Acquired structure live fire training guideline \(F4 GD\)](#) should be read alongside this policy, and must be applied at all New Zealand Fire Service (NZFS) and National Rural Fire Authority (NRFA) live fire training in acquired structures.

The guideline covers:

- the planning and approval process, and
  - the setting up and all activity involved with the burning of acquired structures, including:
    - command and control
    - fire development
    - water application techniques
    - extinguishment
    - ventilation
    - closure of the training session - including scene handover and decontamination of PPE to reduce exposure to possible carcinogen contaminants.
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## References

The following references are also relevant to this document:

- [NFPA 1403 Standard on Live Fire Training Evolutions](#)
  - [Fire Service Code of Practice for Firefighting Water Supplies](#)
  - [Fire Service Act 1975](#)
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## Introduction

### About live fire training

Live fire training is an extremely beneficial training medium for operational firefighters. It allows fire service personnel to study fire development and behaviour and to practise various suppression tactics in a controlled and safe environment.

This policy concentrates on live fire training involving structures. However, it notes that extinguisher training; Realistic Fire Training Buildings (RFTB) and Compartment Fire Behaviour Training (CFBT) also encompass live fire training practice. Other policies, procedures and training documents provide guidance and instruction for this type of training.

This policy excludes vegetation as a medium for live fire training. This type of training must be done within the policy provisions of the National Rural Fire Authority.

### Burning coated wire

Coated wire may be found in buildings that the Fire Service use for live fire burns.

The Resource Management (National Environment Standards Relating to Certain Air Pollutants, Dioxins and Other Toxics) Amendment Regulations 2008, Sub- clause 9, notes that the burning of coated wire is permitted if it is part of a building burnt for the purpose of training firefighters.

### Selecting the building

Fire Service personnel are frequently offered properties for demolition by fire or for use for live fire training. These are only to be considered where they provide a training benefit.

In determining the training benefit from any building, the completeness and design of the structure must be considered.

Some building features, or the lack of, may limit the training benefit. A very small structure or one that has any of the following defects will provide very limited training benefit:

- sections of the ceilings missing
- missing doors (especially external doors)
- broken or missing windows (may be acceptable if boarded up or re-glazed)
- large sections of the floor or roof missing.

For ease of management and control, and to minimise effects on the environment, only domestic sized (up to 300m<sup>2</sup> floor area) dwelling type structures of no more than two stories are to be used for live fire training structures.

Pre-inspection of a structure to determine suitability must be conducted by personnel appointed by the Area Manager, (this will preferably include the person who will be responsible for conducting the training).

## Pre-planning actions and responsibilities

<b>Building owner</b>	<p>The <u>building owner</u> is responsible for:</p> <ul style="list-style-type: none"> <li>• ensuring that gas, electricity, water, sewerage and telephone have been isolated with aerial power and telephone cables removed</li> <li>• checking whether demolition by burning is restricted by rules in the district plan or any regional air or discharge plan and obtaining resource consents from the regional council and territorial authority, if required.</li> </ul>
<b>Person appointed to organise live fire training exercise</b>	<p>The person appointed to organise any live fire training exercise is responsible for the following:</p> <ul style="list-style-type: none"> <li>• Checking whether the property is registered as an historic place or archaeological site under the Historic Places Act 1993 or is subject to a heritage order under the Resource Management Act 1991 or protected in the territorial authority's District Plan.</li> <li>• Determining whether the property is suitable for the intended training.</li> <li>• Getting the following information, in writing, from the building owner: <ul style="list-style-type: none"> <li>○ a request for the New Zealand Fire Service to demolish the property by fire</li> <li>○ evidence of ownership of the property</li> <li>○ a statement that any insurance on the property has been cancelled or that no insurance claim will be made as a consequence of the demolition of property</li> <li>○ a statement that they understand and accept that under section 43 of the Fire Service Act 1975, the New Zealand Fire Service is not liable for any loss or damage that may result from the demolition of the building by fire</li> <li>○ a statement that they will accept responsibility for the site at the completion of the exercise including the removal and tidying of rubble after fire</li> <li>○ a copy of all consents.</li> </ul> </li> <li>• Checking for potential damage to exposures including any flora and fauna.</li> <li>• Considering smoke nuisance to neighbouring properties, especially the effects this may have on airports, hospitals, old peoples homes, building ventilation system intakes and roads or motorways.</li> <li>• Notifying the neighbours, Police, Ambulance, the Communications Centre and any other officials (e.g.: Rural Fire Officer) considered relevant in advance of intended arrangements.</li> <li>• Checking construction features and materials for hazards such as: <ul style="list-style-type: none"> <li>○ asbestos</li> <li>○ masonry tile, bitumen or aluminium roof cladding</li> <li>○ lead flashings</li> <li>○ sealed / closed containers (consider the removal of hot water cylinders, "zip" type hot water heaters and wetbacks)</li> <li>○ ceiling header tanks</li> <li>○ chimneys</li> </ul> <p>If found, these must be eliminated, isolated, or minimised, (in the event that this cannot be done, the building is not to be used and must be handed back to the owner for demolition).</p> </li> </ul>

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**Person appointed to organise live fire training exercise**  
(continued)

The person appointed to organise any live fire training exercise is *also* responsible for:

- Checking that “sufficient” primary water supply is immediately available and that a supplementary or alternative water supply is readily available

**Note:** “Sufficient” will be as determined by the person appointed to inspect the property prior to authorising any live fire training.

The Fire Service Code of Practice for Firefighting Water Supplies must be used as a guide, however it is accepted that water requirements may vary depending on:

- location
- building size
- building design
- fire loading
- construction materials
- exposure protection requirements

A “supplementary” or “alternative” supply may be a tanker or static supply, but must be no less than 3600 litres.

Where practical, the water supply used for an attack delivery is to be independent of that used to supply a back up delivery.

- Drafting a burn plan for use in briefing sessions, all planned evolutions and locations must be indicated on the plan.
- Making a written request to the Area Manager to conduct live fire training. The request must state:
  - the address of the property
  - the brigade[s] and number of trainees to be in attendance
  - a brief description of the building (e.g. single storey 3 bedroom dwelling with timber floor, brick exterior walls, iron roof, plasterboard internal walls and soft-board ceilings), with a basic plan showing room layout, entrance points, water supplies, proposed appliance siting and exposures
  - the training objectives and the burn plan
  - who will be responsible for conducting the training and the names of instructors
  - how this policy has been complied with.

**Area Manager**

An Area Manager (or their representative) may only give permission to conduct the live fire training if all of the provisions of this policy have been met.

## Actions before ignition

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### Actions immediately before ignition

Actions to be taken immediately before ignition include:

- Double-check the address to ensure that the correct property is prepared for demolition.
  - Notify the neighbours immediately before ignition of your intention to start the fire.
  - Check to ensure that all persons and animals are clear of the property (e.g. vagrants, squatters etc.).
  - Systematically check the site for safety hazards, which must be eliminated, isolated or minimised accordingly. Such hazards may include:
    - holes in floors, damaged stairways etc.
    - sealed/closed containers - double-check to ensure that hot water cylinders etc have been removed or can freely vent so as not to create a boiling liquid expanding vapour explosion (BLEVE)
    - rotten timbers
    - remove plastic spouting from above the entry / exit points
    - double-check to ensure that gas, electricity and other services have been cut off and isolated from the structure.
  - Position deliveries and appliances to protect adjacent properties, including any flora and fauna from radiant heat, (particular care must be taken where trampolines, plastic tunnel houses or canvas awnings are close-by).

**Note:** Burning shall not commence where wind conditions are such that fire product or building debris will pose an undue hazard or nuisance to any adjacent property.
  - Confirm ignition time and address with the Communication Centre.
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## Personnel, and command and control

### Personnel

The OIC of the live fire training exercise is responsible for:

- Briefing all participants in relation to the required physical and mental standards required for such training. This will include explaining the dangers of undertaking such activity with ailments such as:
  - physical impairment, e.g. pulled muscles, strains & sprains etc
  - medical impairment, e.g. influenza, migraine
  - a mental state of depression
  - extreme work tiredness
  - alcohol or drugs impairment including any medication that may impact on safety

**Note:** Prescribed medication dispensed through a pharmacy should have information with it that describes any restrictions on physical activity.

All participants must have a personal opportunity to report any concerns regarding their fitness to take part.

- Ensuring there are suitably qualified personnel immediately available to render first aid, (including oxygen), if required
- All personnel undertaking an internal firefighting role have successfully attained the following minimum training standards:
  - paid staff must have successfully completed the equipment handling and B.A. components of the paid firefighter recruit training course
  - volunteer members must have successfully completed the volunteer firefighter Basic Skills and Grade 2 BA course.

Fire Service personnel not trained to these standards may undertake an outside supporting role.

Fire Service personnel not trained to above standards, and authorised members of the media, may be allowed to enter the building at the instructors discretion, on condition that they are:

- restricted to a place of clean air
- close to an exit way
- under strict supervision by Fire Service personnel at all times
- dressed in full level 2 protective clothing
- Ensuring that pump operators are familiar and competent with the appliance and / or pumps to be used
- Making sure all personnel, (instructors and students), are familiar with the building layout, which includes a tour through the structure pointing out all of the hazards to them. They must also be shown the designated exit ways
- Giving a safety briefing that ensures everyone [this includes those who are participating in the training, as well as those that are involved in protecting exposures and providing additional support], knows the burn plan and the pre-arranged actions if the training exercise runs into difficulties or doesn't go according to plan
- Ensuring that all personnel wear personal protective clothing and equipment appropriate for their task[s]
- ensuring a maximum ratio of 4 students to 1 instructor at all times.

The use of people as live "victims" in live fire training is strictly prohibited.

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**Command and Control**

The OIC of the live fire training exercise is responsible for:

- appointing personnel to positions of responsibility in accordance with the Fire Service Command and Control structure
  - appointing at least one safety officer specifically to the role
  - establishing an incident ground communications network between internal and external operations and all instructors.
  - positioning personnel with charged deliveries around the structure to guard against damage to exposures
  - ensuring that observers and personnel not directly involved in training activities are held in a safe area designated by cordon tape or similar
  - posting personnel on stand-by after the exercise for a sufficient period until there is no possibility of re-ignition, and no possibility of danger from collapse or falling materials.
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## Process

### Live fire training process

Exits from the building are to be kept clear and checked prior to each training evolution.

Ignite each section of the structure separately to ensure personnel gain the best value from the exercise. With the exception of using flammable liquids for specific origin and cause determination training, the following combustibles are not to be used to commence or sustain combustion:

- flammable liquids
- tyres
- plastics in sheet form
- straw or hay.

Where flammable liquids are used for origin and cause training they must be kept to an absolute minimum quantity (<1 litre per fire setting and only one fire setting per evolution).

Mattresses, foam rubber and/or polyurethane foam furniture may be used to start the fire and/or form part of the furniture fire loading, however the quantity used must be minimal (in line with normal household quantities and distribution).

A minimum of 2 attack deliveries must be placed inside during compartment training, at least one of these must be capable of flowing 7 l/s @ 700 kPa.

Entry Control Procedure must be used and learning / practising the role of the Entry Control Officer should form part of the training objective.

Maintain and retain a comprehensive diary of the exercise from start time until the exercise is completed, including photographs and video coverage.

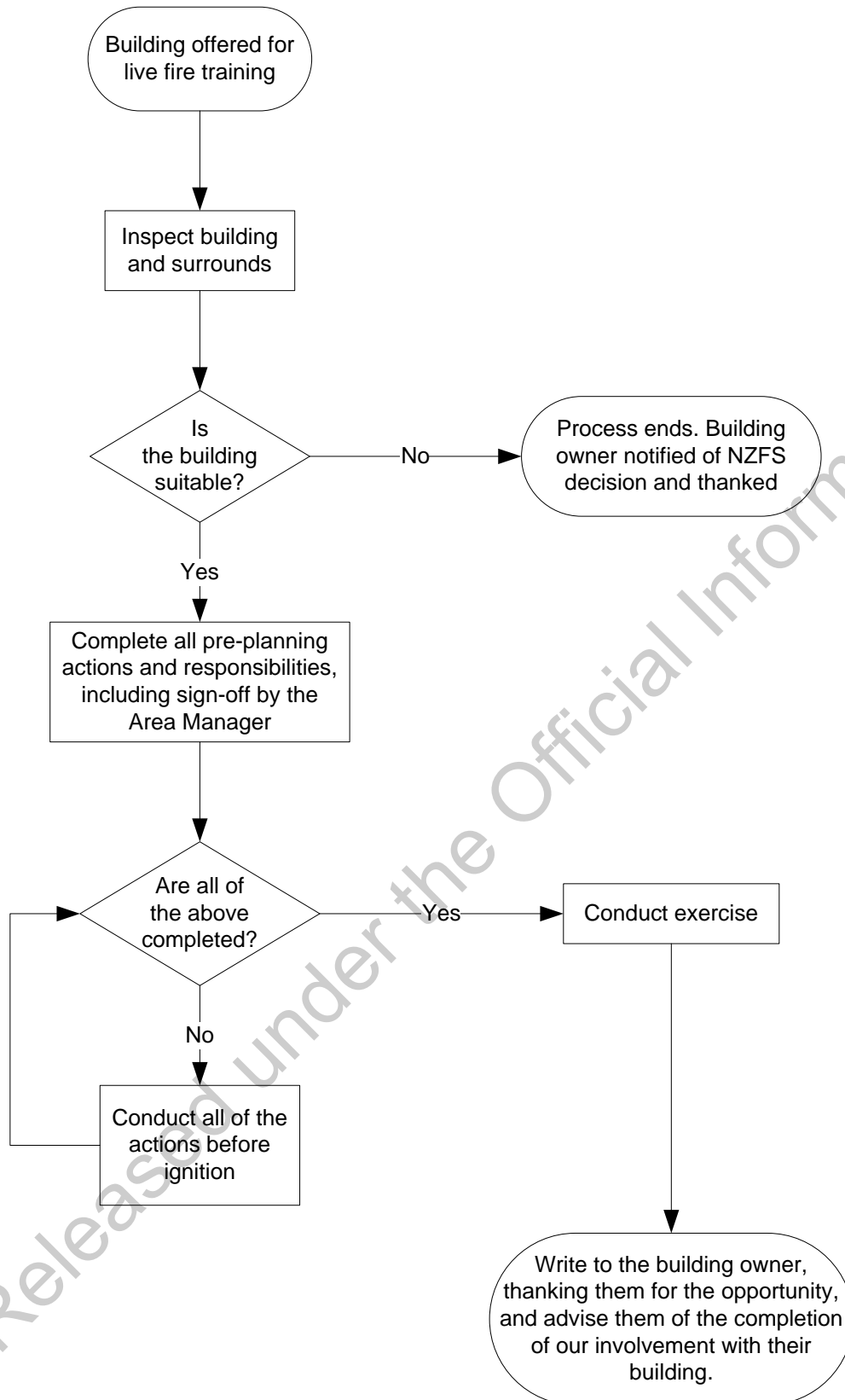
Make the building safe from re-ignition and falling/blown debris and hand the responsibility for the site back to the owner before finally departing the scene.

### Record of amendments

Date	Brief description of amendment
Oct 2012	Code changed to F4
Dec 2014	Additional field required in Appendix C. All fields required to be completed in Appendix C and D. Guideline document created - <i>Acquired structure live fire training guideline (F4 GD)</i> .
March 2015	Paragraph about the <i>Acquired structure live fire training guideline (F4 GD)</i> added at the start of the policy, along with a link to the guideline document.



## Appendix A - Overview



## Appendix B - Extinguisher training and RFTB training

### Extinguisher training

Class B fuels may be used for extinguisher training on condition that they are:

- kept to minimum quantities (<5 litres per container)
- properly contained in a fit for purpose tray
- ignited by a lighting device that affords at least a 1.6m distance from the container and the person igniting it
- are a maximum of 20% petrol / 80% diesel mix
- appropriately disposed of at the conclusion of the training evolution, (refer to POLLC1.12 Resource Management Act).

A check will need to be made as to whether the burning is restricted by rules in the district plan or any regional air or discharge plan and resource consents from the regional council and territorial authority will need to be obtained if required. (refer to POLLC1.12 Resource Management Act).

Members of the public being educated in the use and effect of different extinguishing medium need not be protected with full structural protective clothing, (as they won't have this available to them in normal circumstances). Instructors must ensure that the students personal clothing is protected from damage, that hair and eyes are protected and that students approach from an upwind direction maintaining a safe (but effective) distance.

Firefighters undergoing this type of training must wear full structural protective clothing.

### Realistic fire training buildings

Realistic fire training buildings (RFTB) are provided at selected Fire Service sites and must only be operated under the strict control of a qualified / certificated instructor.

The instructor is to strictly adhere to the requirements as detailed in the RFTB training manual, which shall comply with this policy.

A maximum ratio of 4 students to 1 instructor must be observed and the instructor must be in contact with students at all times.

Only approved untreated woods can be used as fuel.

One person must be dedicated to monitor the control panel at all times when students are inside.

The ceiling temperature on any level where personnel are assigned to work is not to exceed 300°C.

## Appendix C - Pre-planning checklist

All fields **MUST** be completed

Action point	Responsibility	Date achieved	Comment	Signed
Pre-inspection conducted				
Asbestos survey completed by Worksafe NZ registered asbestos professional.				
Written asbestos report included in application to Area Manager				
Written statement from the owner received, (request for demolition; evidence of ownership; insurance cancelled; Fire Service limitation of liability; site clean up).				
T/A – Regional Council consent(s) gained, (by the building owner).				
Check for building classification (Historic Place or Protected building)				
Services isolated & aerial wires removed				
Exposures safe or able to be protected				
Smoke nuisance to neighbours				
Hazards identified (building safe from asbestos, masonry tile roof header tanks etc				
Neighbours; Police; Ambulance and other officials notified				
Communication Centre notified in writing				
Water quantity and supply established				
Request to carry out the training forwarded to the FRC				
Permission granted from the FRC				

## Appendix D - Actions before ignition checklist

All fields **MUST** be completed

Action point	Responsibility	Achieved	Comment	Signed
Double-check the address				
Check wind strength and direction				
Notify neighbours				
Position deliveries for exposure protection				
Check site for safety hazards				
Check site for people / animals				
Establish a safe area for bystanders				
Ensure immediately available personnel to render first aid				
Ensure pump operators are conversant with the pump[s] being used				
Establish Command & Control structure – appoint Safety Officer				
Establish Incident Ground Communication System				
Safety briefing to all regarding fitness, the burn plan and the contingency plan				
Ensure all personnel have been given a tour of the building to highlight hazards and exits				
Confirm ignition time and address with Communication Centre				
Establish and maintain a ratio of 4 students to 1 instructor				
Light the fire – no accelerants – no live patients				
Maintain a diary / video of the training				
Appoint standby crew				