Urban Model

A guide to using the Urban Model

Copyright Notice

Enquiries should be addressed to: bushfiremodel@bigpond.com

Contents

Introduction 4

The Urban Model 11

Discussion Topics and Exercises 24

Fire

- Structure Fire 27
- Car and Caravan Fire 40
- Bulk Fuel Tank / Fuel Farm Fire..... 42

Crash / Rescue 38

HAZMAT 54

Appendix 67

Introduction

Introduction

The Fire and Rescue Urban Model is a physical fire model used by experienced Fire and Rescue instructors to demonstrate incident response in urban environments.

This model was developed for the Queensland Fire Department, School of Fire & Emergency Services Training. Its design is based on the successful approach used for the Bushfire Model® (registered design).

With an extensive selection of different structures, vehicles and incidents, the Urban Model is able to create an almost limitless number of scenarios. The model can re-create an extensive range of urban incidents, including those in residential, high-rise, commercial, and industrial settings.

Possible scenarios include:

Structure fire

- House
- Warehouses
- Shopping complex
- Townhouses (two-level, attached dwellings)
- Hotel (two-level)
- Shop (single level)
- Block of flats / apartments

Vehicle fire

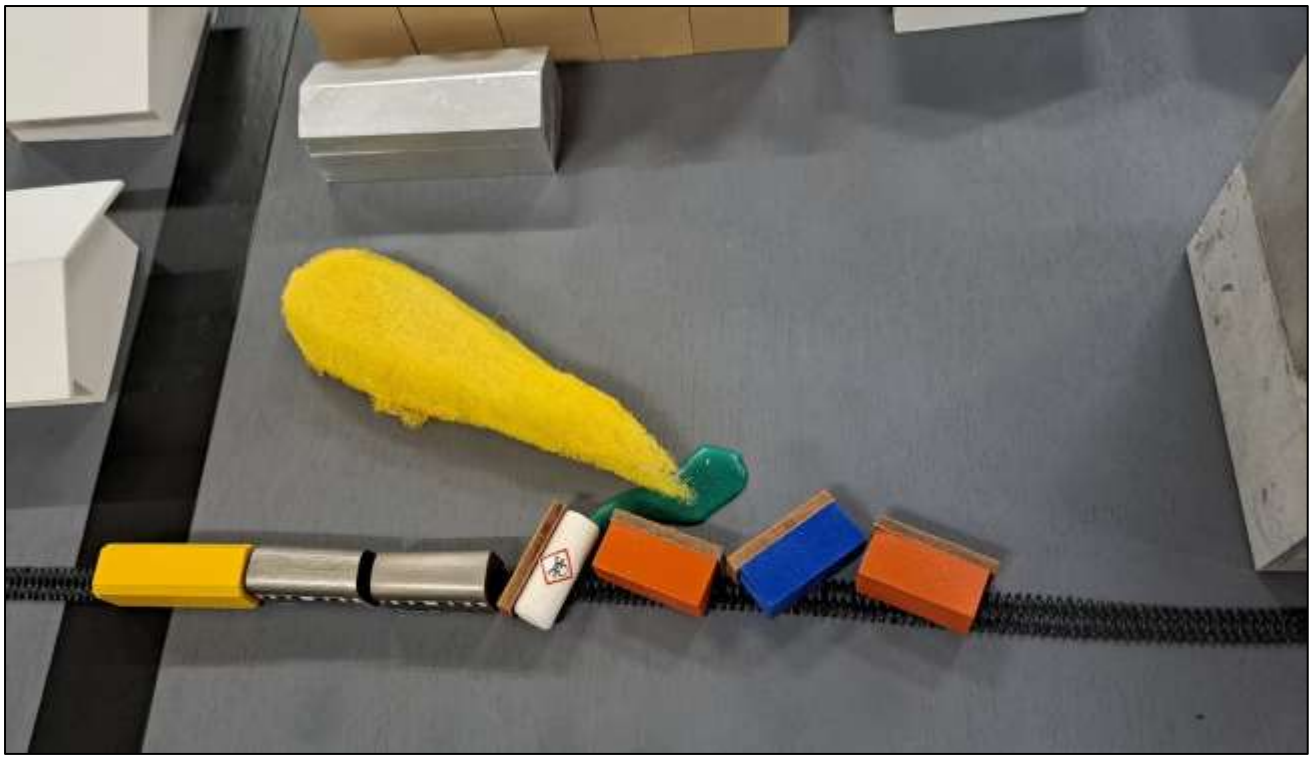
Crash:

- Car v train
- Car v bus
- Multiple vehicle
- Light aircraft

HAZMAT

This Guide describes the model's benefits together with suggestions and ideas on how it can be used.

This is not a training manual; the model and this Guide are communication tools for instructors and trainers to share their knowledge.



The Urban Model offers advantages comparable to sand tables used by the military and firefighters to simulate real-world scenarios. However, the Urban Model stands out due to its urban design, ease of mobility, and extensive selection of items.

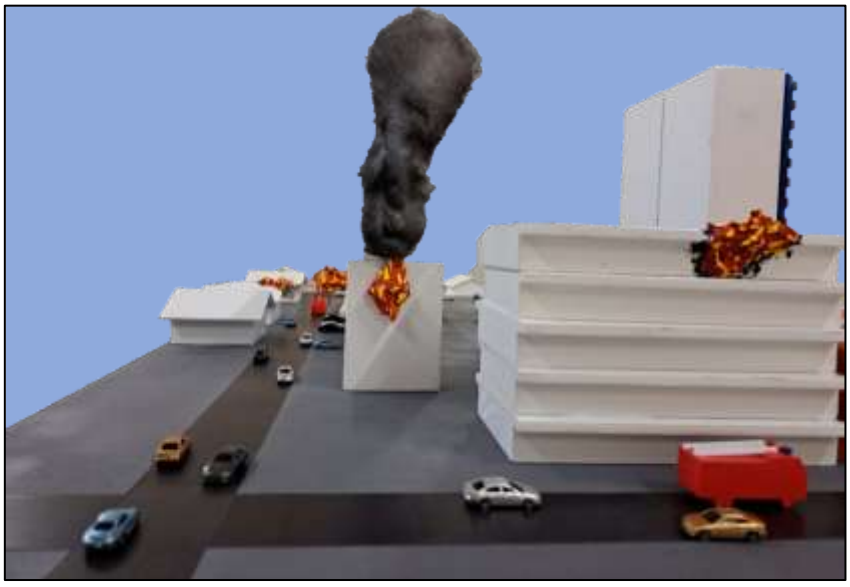
Photo J. Pinho: Pacific Southwest Forest Service, USDA
(https://www.flickr.com/photos/usfsregion5/26830279827/in/photostream/)

The model's design reflects that firefighter's are practical, hands-on people. The incident scene attracts interest, invites questions and supports learning.

The model supports experienced instructors demonstrating aspects of incident response. Participation comes naturally with instructors moving pieces to share knowledge.

Using the model successfully integrates three of the four core learning styles: visual, auditory, and kinaesthetic (tactile/physical activity) learning.

The model allows students to actively engage with the material, seek clarification, and reinforce their knowledge. Simultaneously, instructors benefit from real-time feedback as students demonstrate their understanding.



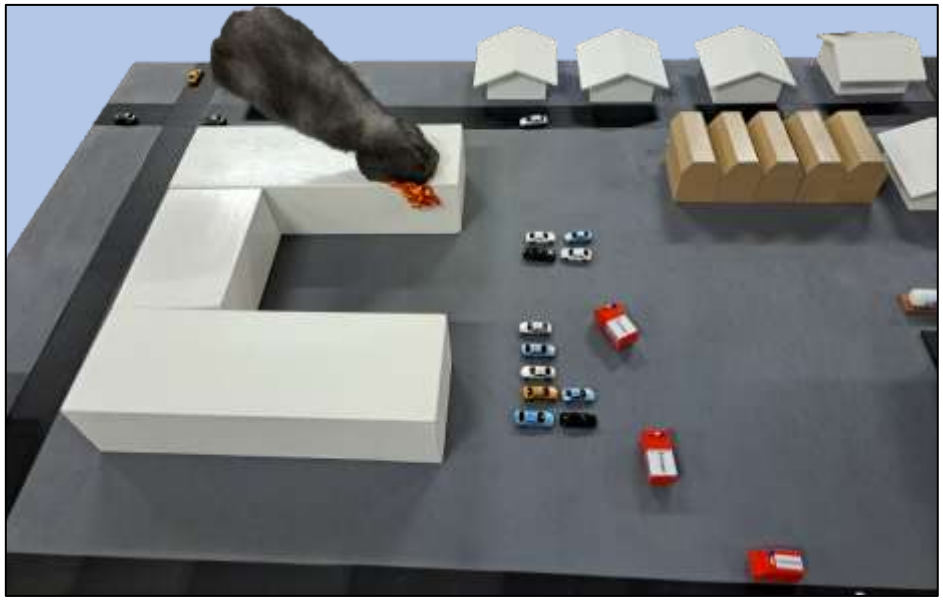
A positive learning environment is created through clear communication. Whether explaining tactical choices, sharing lessons learned or reinforcing safety protocols, this collaborative approach fosters continuous improvement and enhances team effectiveness.

The model allows firefighters to see the entire fire scene. This perspective is valuable in understanding everything that is occurring during an incident. The ability to step back from the tactical aspects of firefighting to see the big picture is a useful message for aspiring Incident Controllers.

The model is a powerful visual tool helping firefighters to effectively apply their training in real-world situations. These mental images serve as valuable reference points, helping them to make informed decisions and respond swiftly and confidently during emergencies.

This approach is a great support tool for After Action Reviews (AAR) as well as relaying the lessons learnt so that others can benefit from this experience. The model is used to recreate the incident showing the position of appliances, hose lines, casualties and much more.

An example of an AAR was provided by a WA Station Officer which highlighted the importance of thorough incident assessments at structure fires and HAZMAT incidents. The AAR considered alternative strategies helped to restrict water use and limit the impacts of contaminated run-off. When implemented it delivered significant immediate and long-term (community recovery) benefits.



A brief history

The first of these models was built in 2016 for a firefighter who wanted to share his knowledge with new brigade members. He was after something that was easy to use, effective and not a PowerPoint presentation.

The initial test was very successful. Since then, firefighters and other emergency responders have seen the potential and requests for more models followed. Along the way there have been lots of suggestions and many more models and items have been added.

Each model is made by hand - an investment in time that maintains our aim of helping firefighters share their knowledge.

We are a small business based in regional Western Australia; the Bushfire Model® is a registered design (copyright).

The Urban Model

The Urban Model

This section will look at the Urban Model in detail, the individual items and how they can be arranged to demonstrate aspects of incident response.

This Urban Model is just one of a growing number of custom-made models built for firefighters and other emergency responders. Other major models are described in the appendix and include the **Bushfire Model®** and the **Emergency Services Model** please contact us for more information on these products info@bushfiremodel.com.au.

Most items can be used across different models. With hundreds of different items available the possible scenarios are almost limitless.

Models and their items are contained in carry cases and heavy-duty storage boxes.

Custom made items and kits

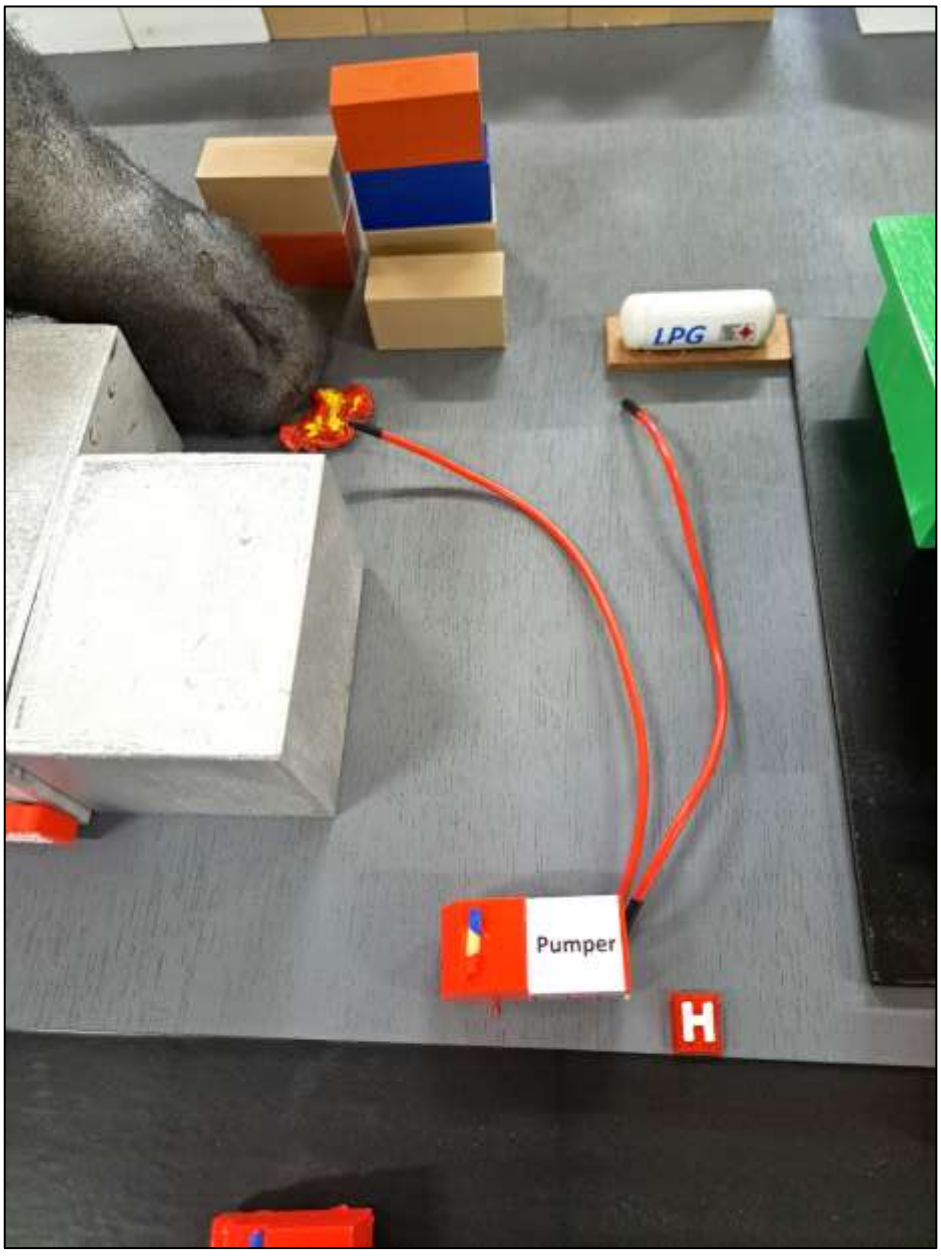
All models and kits can be customised by changing the number of items or including other items.

New products are continually being developed. While this guide describes some of these items, please contact us for details on the current product range. (bushfiremodel.com.au)

Using the model

These models have been used in many different ways including:

- training and specialised development programs
- practicing skills
- scenario exercises
- re-creating incidents and debriefs



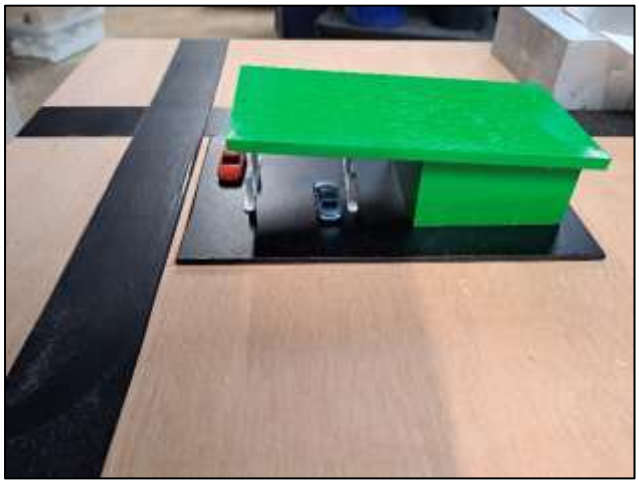
The items available in the Urban Model include:

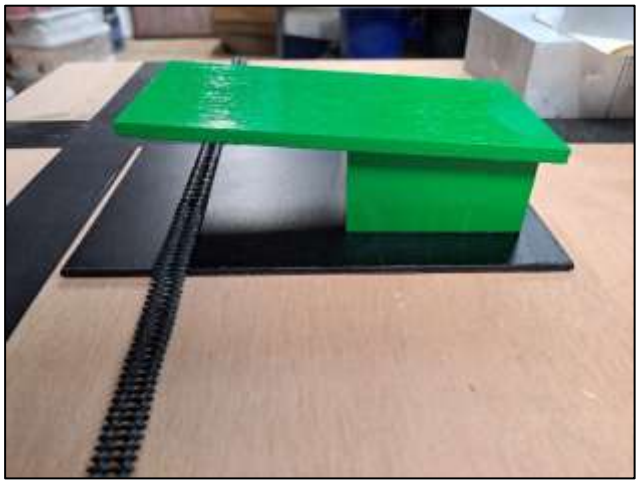
- Ambulance
- Appliance – Command vehicle
- Appliance – Fire & Rescue (Light attack / grass fire unit)
- Appliance – Fire & Rescue (Aerial)
- Appliance – Fire & Rescue (Pumper)
- Appliance – Fire & Rescue (Rescue)
- Building – apartment single storey (stackable)
- Building – apartment two storey (stackable)
- Building – apartment single storey (stackable) (fire on end)
- Building – apartment single storey (stackable) (fire on roof)
- Building – cladding facade for one side of building (15 levels)
- Building – façade (three levels)
- Building – fuel station / train station
- Building – hospital / school / mid-high rise (6 items)
- Building – hotel (corner)
- Building – hotel
- Building – hotel (fire located second floor)
- Building – house
- Building – house fire in roof cavity
- Building – house – exposure (signs of charring)
- Building – house fully involved
- Building – industrial Shed
- Building – industrial warehouse or shopping centre (tilt-up)
- Building – residential shed
- Building – single storey shop
- Building – single storey shop (well involved)
- Building – two story villa / townhouse
- Building – two story villa / townhouse (fire on 1st level)
- Building – two story villa / townhouse (fire on 2nd level)
- Building Block – large
- Building Block – medium

- Building Block – small
- Cars
- Car Vs Power pillar
- Car fire
- Caravan fire
- Fire on cladding (new)
- Fire to be positioned on vertical surface (using Blu-Tack® /similar)
- Fire with smoke plume
- Fire – running fuel fire
- Fuel farm set (five fuel tanks, one fully involved, pipework)
- Generator
- Hose line
- Hydrant
- Hydrant booster box
- Light Aircraft Vs building (aircraft only)
- LPG bullet
- Item
- Model base
- Police Car
- Rail line
- Rescue tools on salvage sheet
- Road cones
- Sector communication panels
- Shipping container – small as cool room (white)
- Shipping container – large (blue, green, beige)
- Smoke on vertical surface (using Blu-Tack® /similar)
- Smoke to be positioned on horizontal surface
- Spot fires (small)
- Train & Carriages (goods train engine & 7 carriages)
- Train – Electric Next Generation Rail (two sections)
- Truck – Diesel
- Truck - LPG

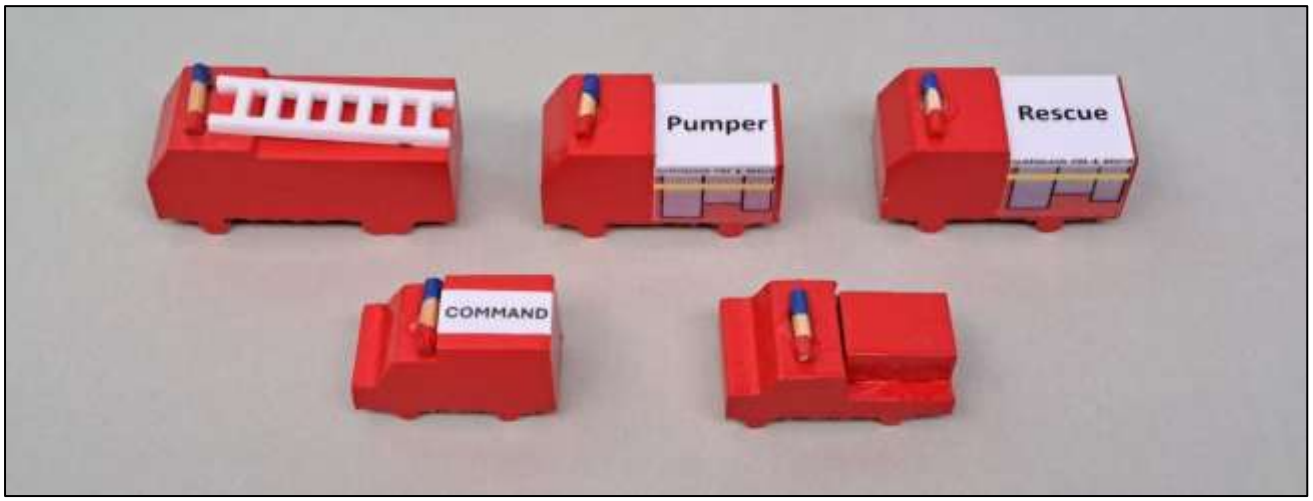
Model items

This section looks at the versatility of different items and how they can be used to create different incident scenarios.





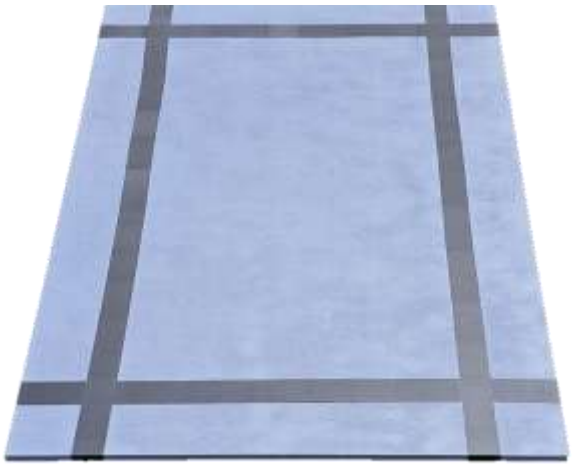
The fuel / service station structure includes the base and building as separate items. It can be used as a train or fuel station; the base can also be used as a car park for a shopping centre.



Command, light attack / grass fire unit, aerial, pumper and rescue appliances.

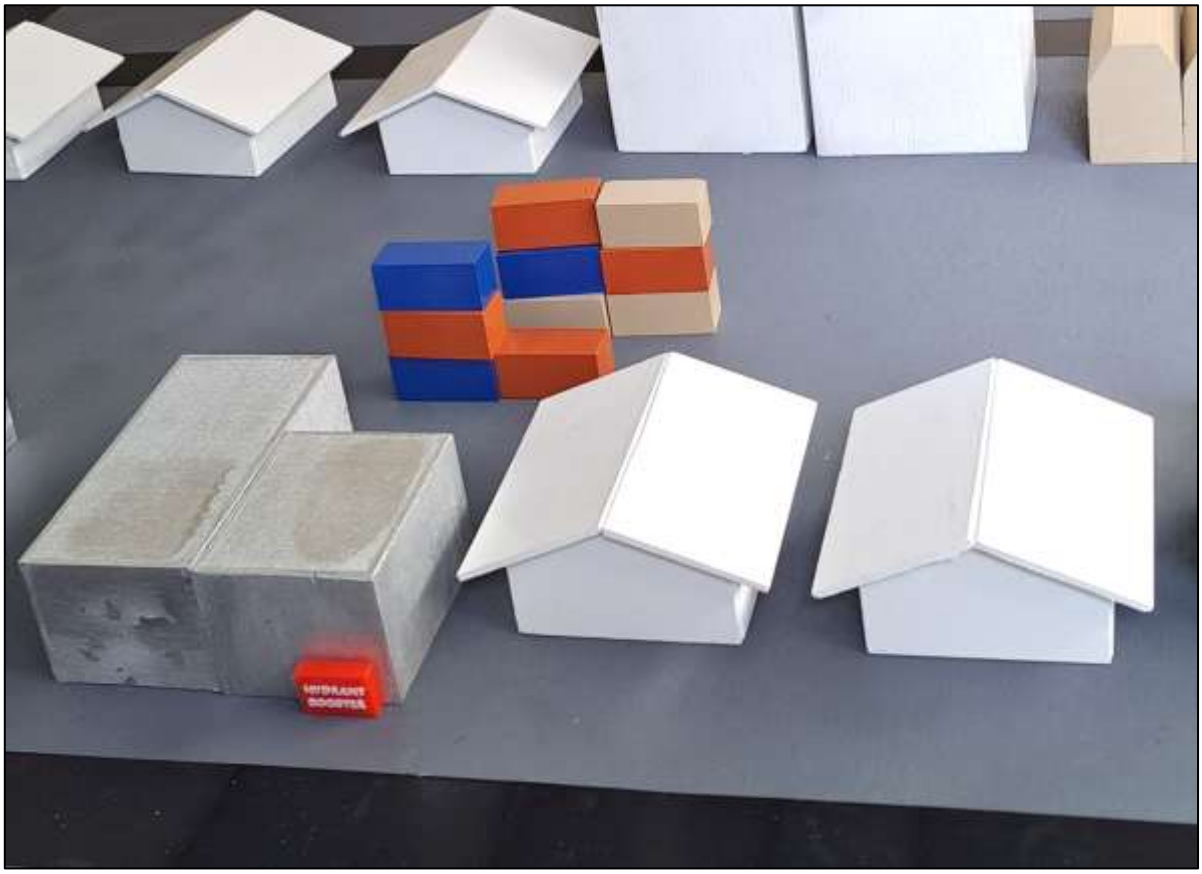
Ambulance and police car

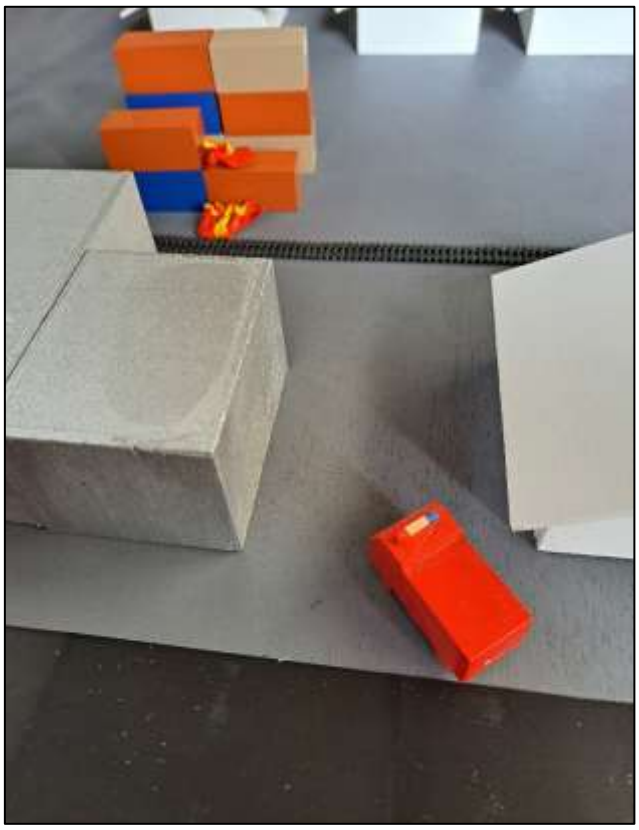
The standard model base is 1200 x 800mm with a basic street layout on one side, the other side is blank and able to be customised using black tape to create roads.



Alternatives include using laminated street maps and aerial images with the model's buildings positioned to represent actual structures.

Sea containers, industrial sheds and residential structures.



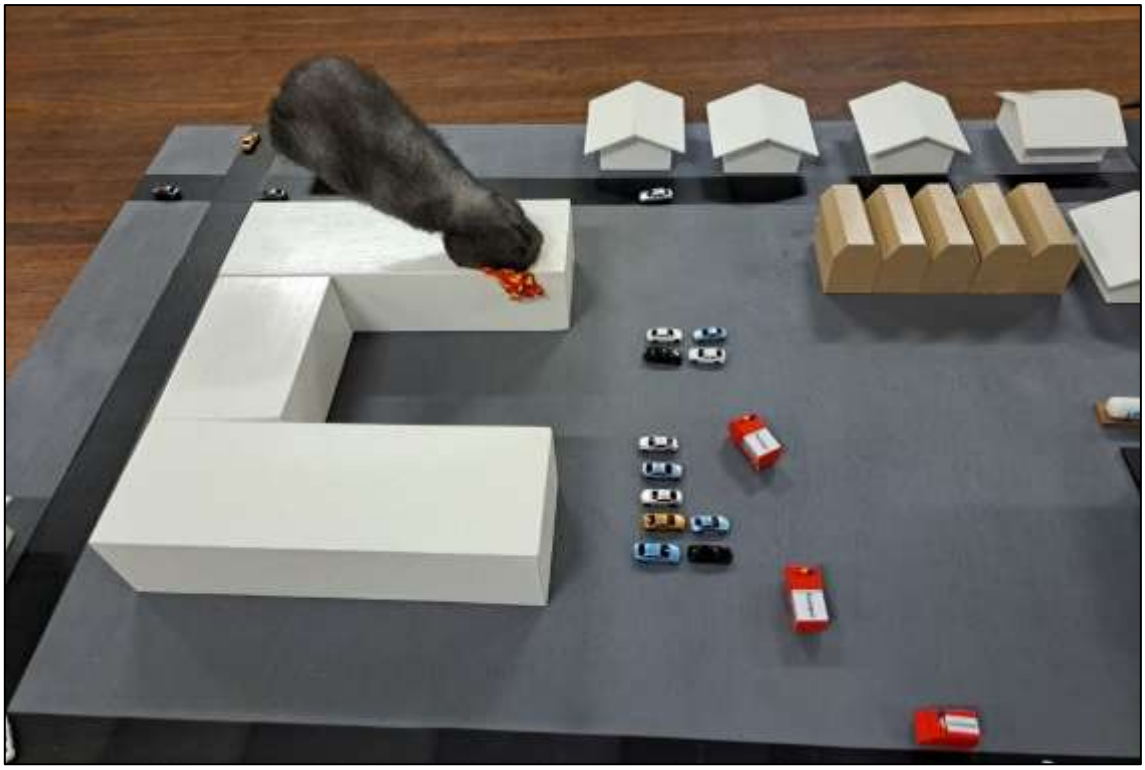


Structures and other items can be arranged to vary the ease of access. Similarly, the numbers and type of exposures can be positioned to vary complexity.

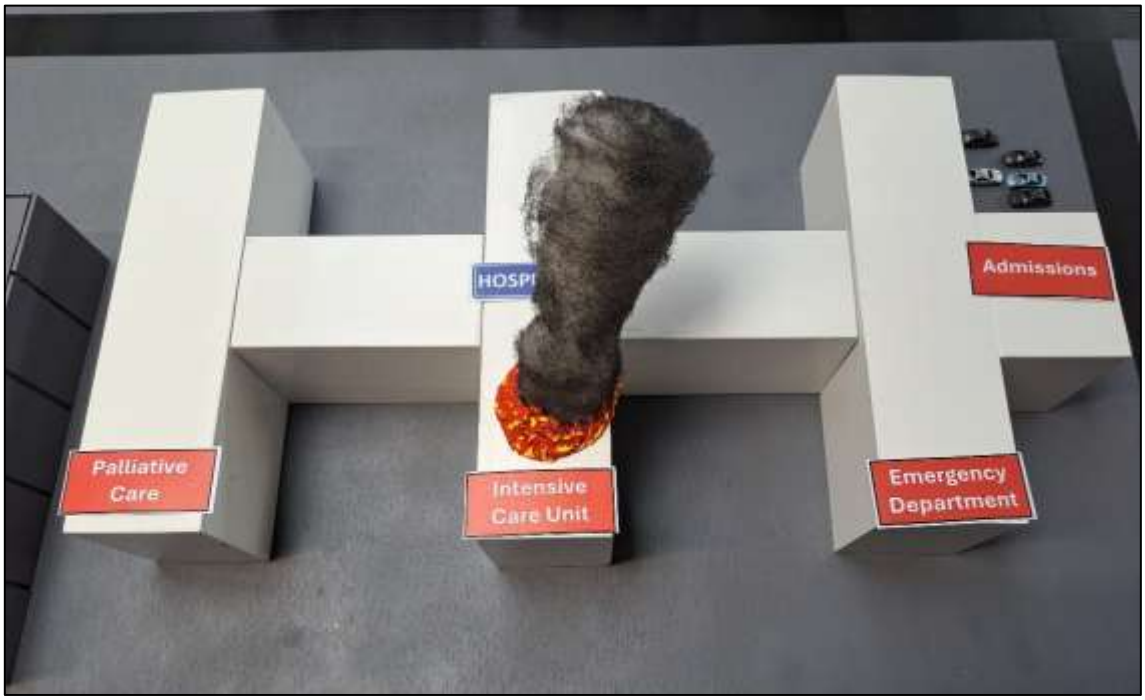
The industrial warehouse and shopping centres are designed as a tilt-up construction.

The shopping centre below has one loose panel. This panel can be angled out (Blu-tack) to indicate failure of the structure and support discussions about safety and appliance positioning.

The two-level hotel as a corner and straight section. A second straight-section hotel has fire established on the second level.

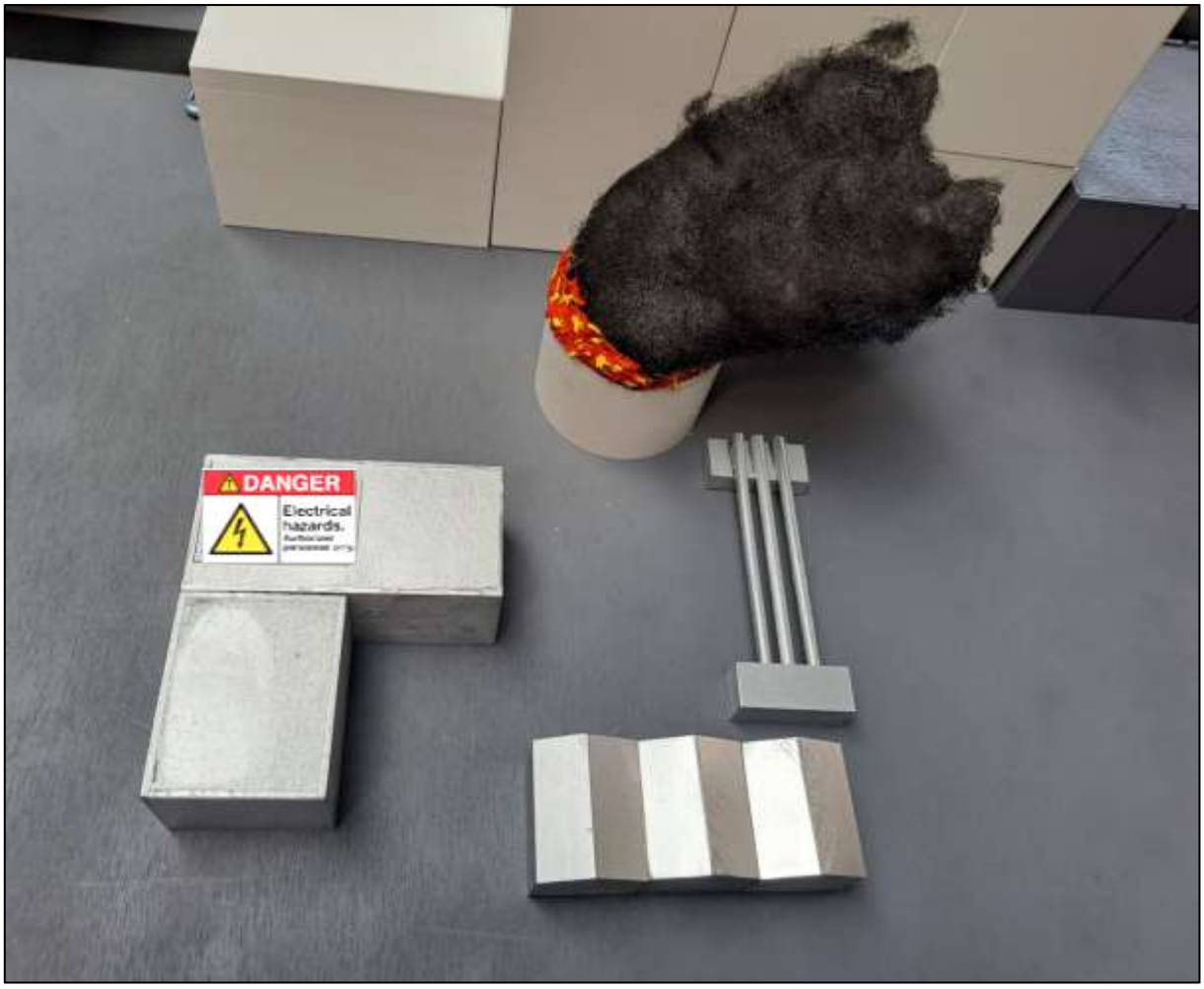


The small, medium and large blocks can be arranged to create larger structures such as schools, hospitals, office blocks. Labels can be added to these structures to add further detail.



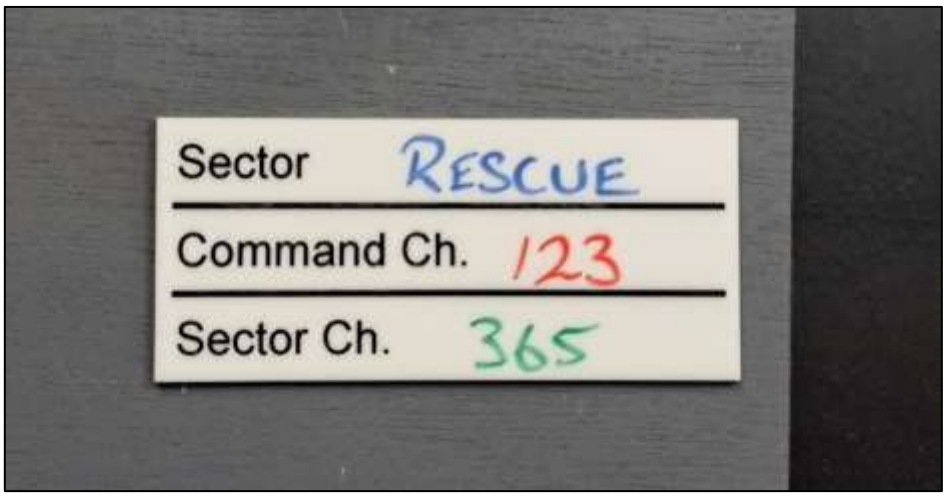
The larger blocks are used to support the three-level façade and the 15-level cladding façade.

.



Fire involving bulk fuel storage tank. Labels used to identify additional hazards

The sector communication panels allows the instructor or participant to designate functional sectors together with the relevant radio channels.



Discussion Topics and Exercises

Discussion Topics

The Urban Model® can be used to focus on a single a topic or can build multiple topics into a scenario exercise. As an example, the model can be used to discuss individual aspects of HAZMAT response. However, additional benefits arise by integrating these aspects into a complex HAZMAT incident.

Some of the many possible discussion topics include:

- Safety
    - Safety hazards
    - Safety systems

- General
    - Initial assessment
    - Incident management structure
    - Setting objectives, strategies
    - Radio Communications
    - Debrief After Action Review

- Structure fire:
    - Rescue
    - Exposures
    - Containment etc.

- Crash
    - Stabilisation
    - Extraction

- HAZMAT
    - Arrival
    - Safe approach / appliance positioning
    - Immediate Actions
    - Product Identification
    - Decontamination
    - Recovery
    - Public safety, evacuations / shelter in place

Exercises

Exercises, also known as Tactical Exercises Without Troops and Tactical Decision Games, place participants in different roles when faced with a challenging incident. These scenarios can be used as part of training courses or conducted to practice skills.

Exercises can vary in complexity, ranging from short and simple incidents to longer-duration simulations. These exercises may focus on a specific topic, or integrate these topics into complex incidents that can also involve representatives from other agencies.

Scenarios can be simulated by creating an incident with various assets and features. An ignition source (e.g. fire in kitchen on second level of a six-level apartment building) is established before the exercise begins. As the exercise unfolds, fire and smoke are introduced to simulate the fire spreading. Firefighters respond to the scenario with the range of incident assessments and actions. Standard operating procedurees are applied using available resources or requesting additional support.

Incident appreciation leads to developing objectives, strategies and tactics. The selection of strategies depends on the model's description of the incident, the assets under threat and available resources. Actions such as community warnings and evacuations may also be included.

During the exercise particpants are encouraged to describe their thoughts as they respond to the incident. While it is possible to allow an exercise to develop intuitively, structured scenarios developed by fire agencies ensure that participants have the opportunity to demonstrate their competence in key areas.

Depending on the type of exercise, instructors may provide feedback during the session or later as part of the debrief.

An alternative way to start an exercise is with a shift change briefing during a fully developed incident. This allows the incoming personnel to review objectives, strategies, resource allocation, receive and deliver briefings and much more.

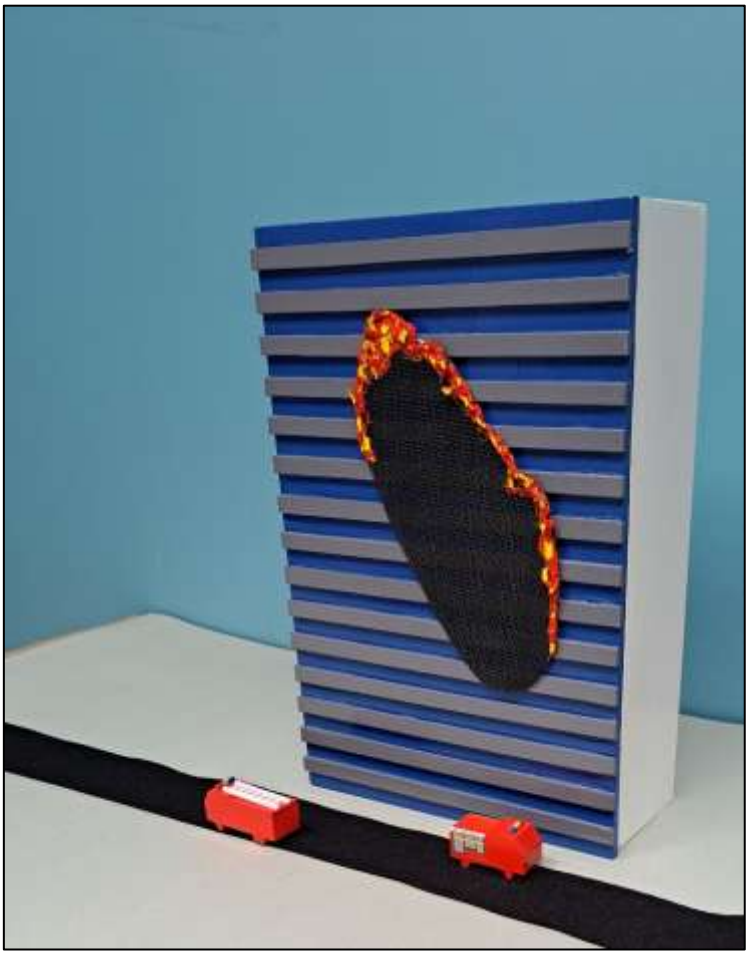
Structure Fire

Structure fire

An extensive range of structure fires can be created in residential, commercial and industrial environments using:

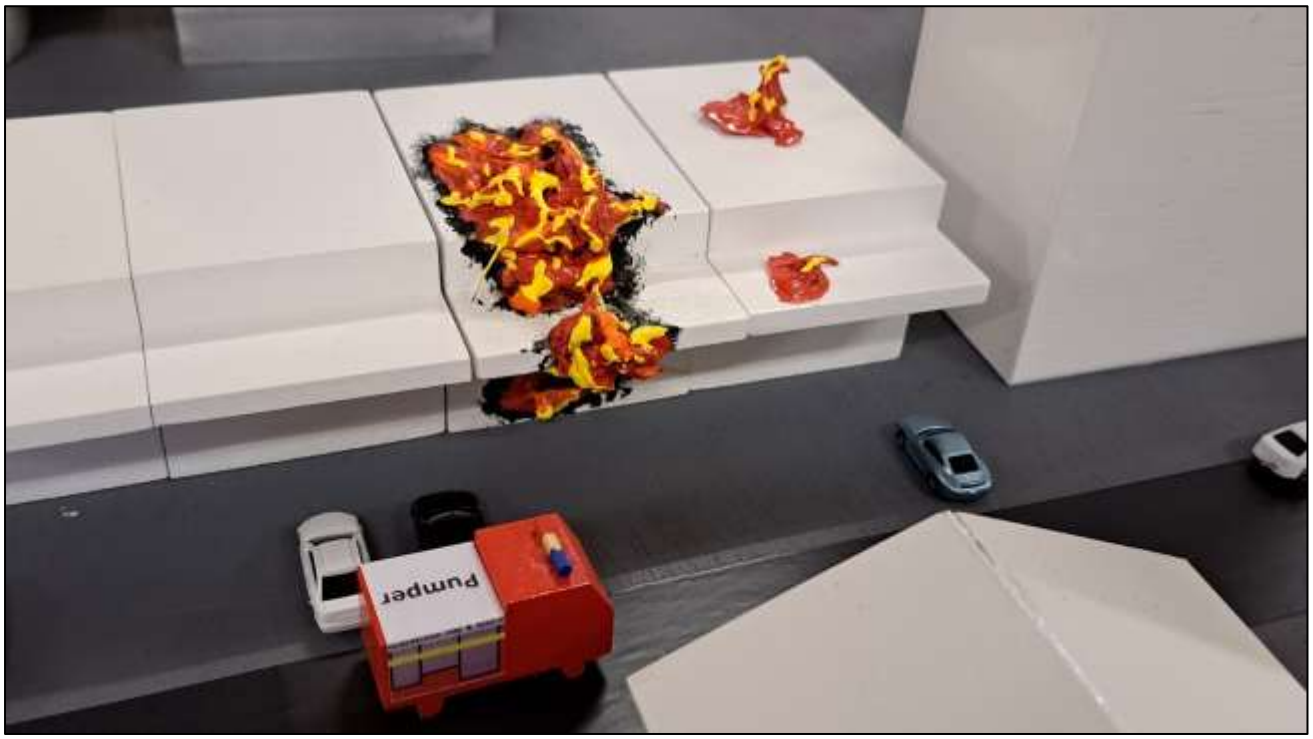
- Houses
- Hotel (two-level)
- Warehouses
- Shops (single level)
- Shopping complex
- Block of flats / apartments (up to eight levels)
- Townhouses (two-level, attached dwellings)

The cladding façade is attached to two large structures using Blu-Tack® or similar. The cladding fire is attached the same way.



From left to right: exposure, house fully involved, house with fire in roof cavity. Fire established in first level of townhouse and shop well involved.

The modular design of the single level shops allows the configuration to be changed to create different scenarios. The small spot fires (right) can be positioned to show fire growth / heat transfer to exposures.

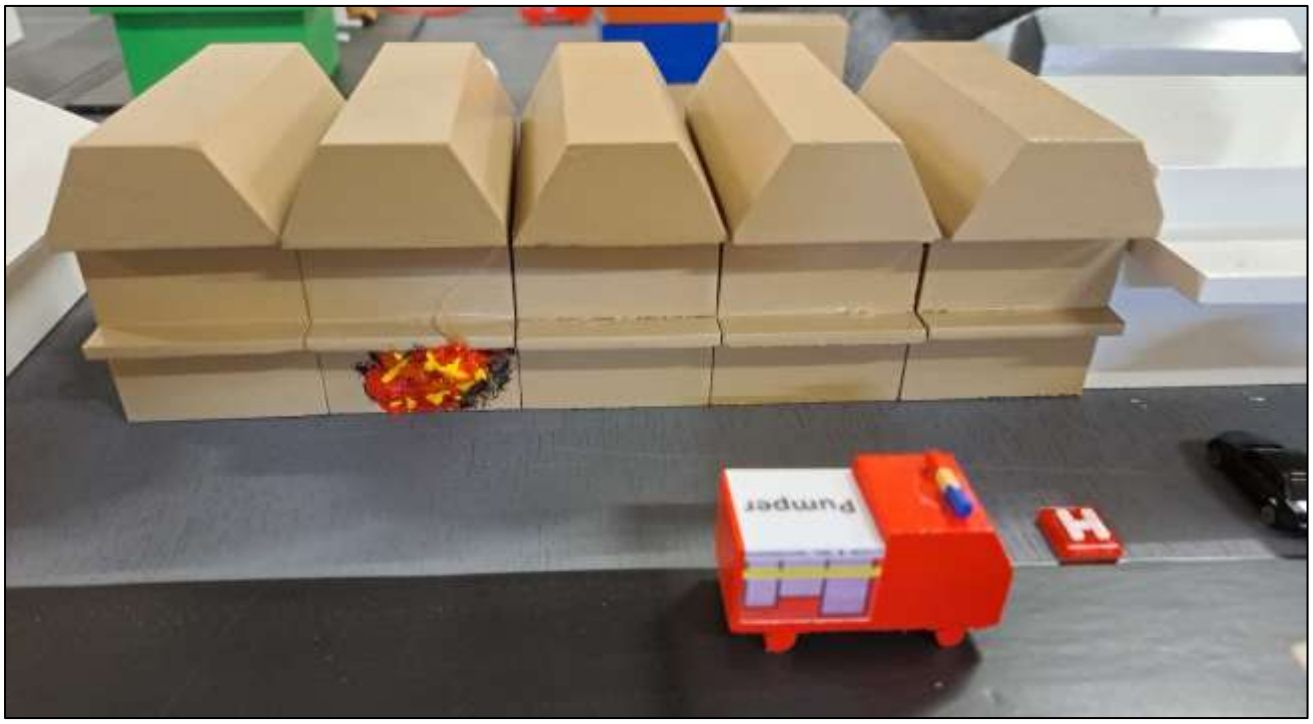


The apartment block comprises six sections. Two separate levels have fire included. The interchangeable nature allows many different configurations to be created with fires at any level.

Labels can be used to indicate the type of accommodation. Custom made incident cards can add detail concerning the number of residents on each level and their mobility status.

The townhouses / villas are positioned together with shared walls.

Two buildings have fire established on the first or second levels and can be positioned within the group of residences.

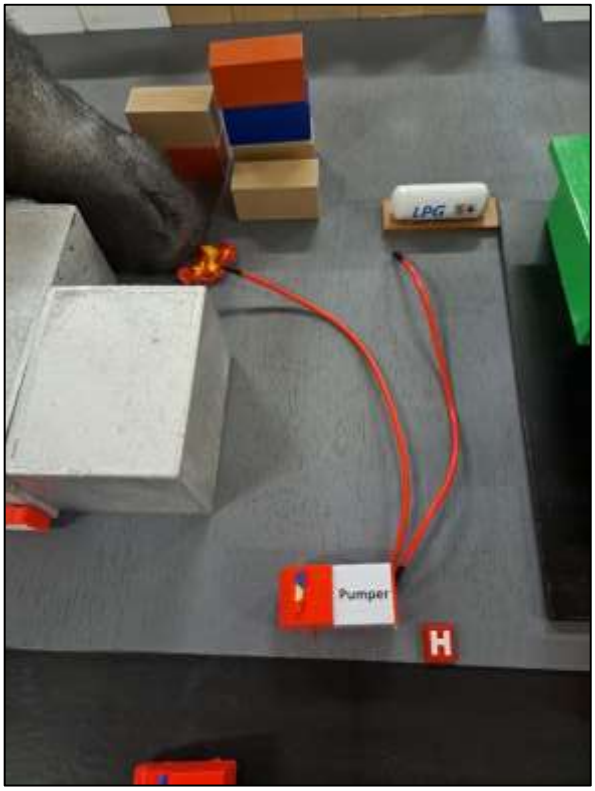


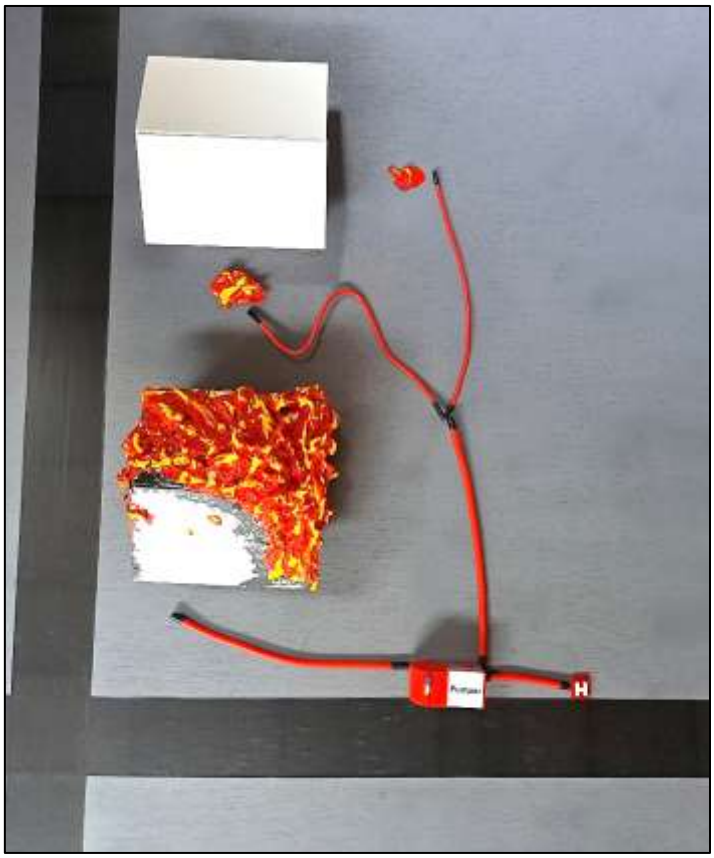
Structures and other items can be arranged to create scenarios and vary complexity.

A fire at a service station with multiple exposures and a running fuel fire.

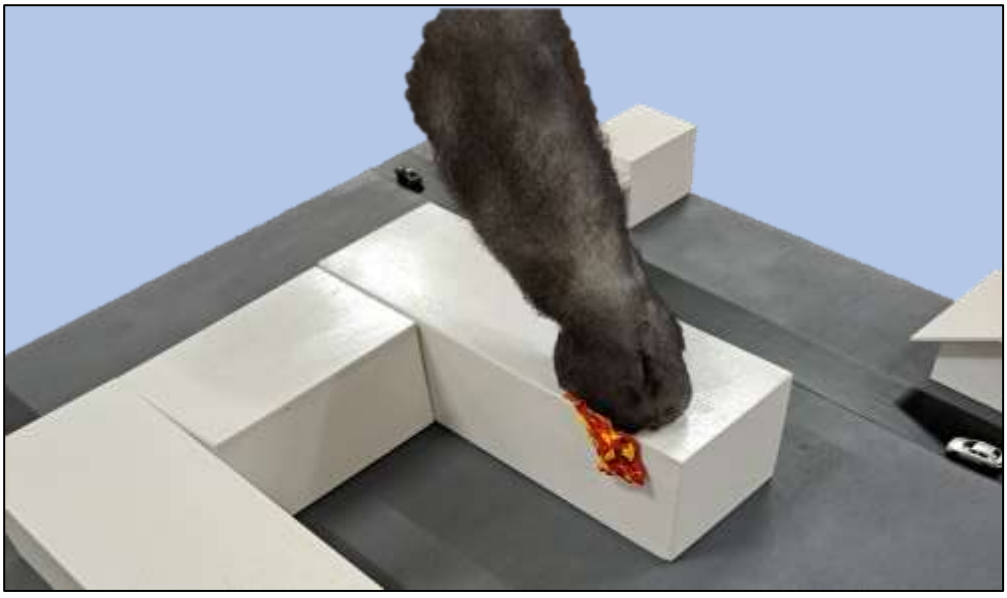
Hydrants and hydrant booster boxes are available to support suppression operations.

Hose layouts add detail and can be arranged with coupled lines and joins as dividing breeches. The 60/40 hose lines provide additional options.

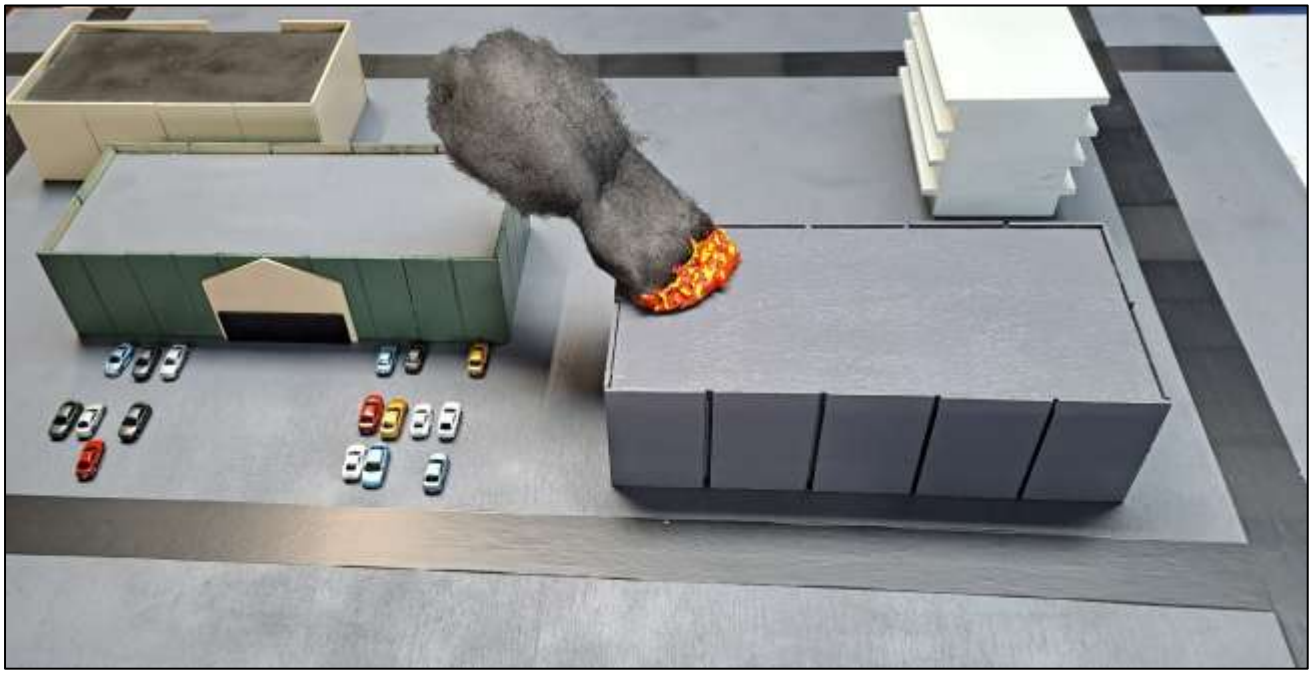


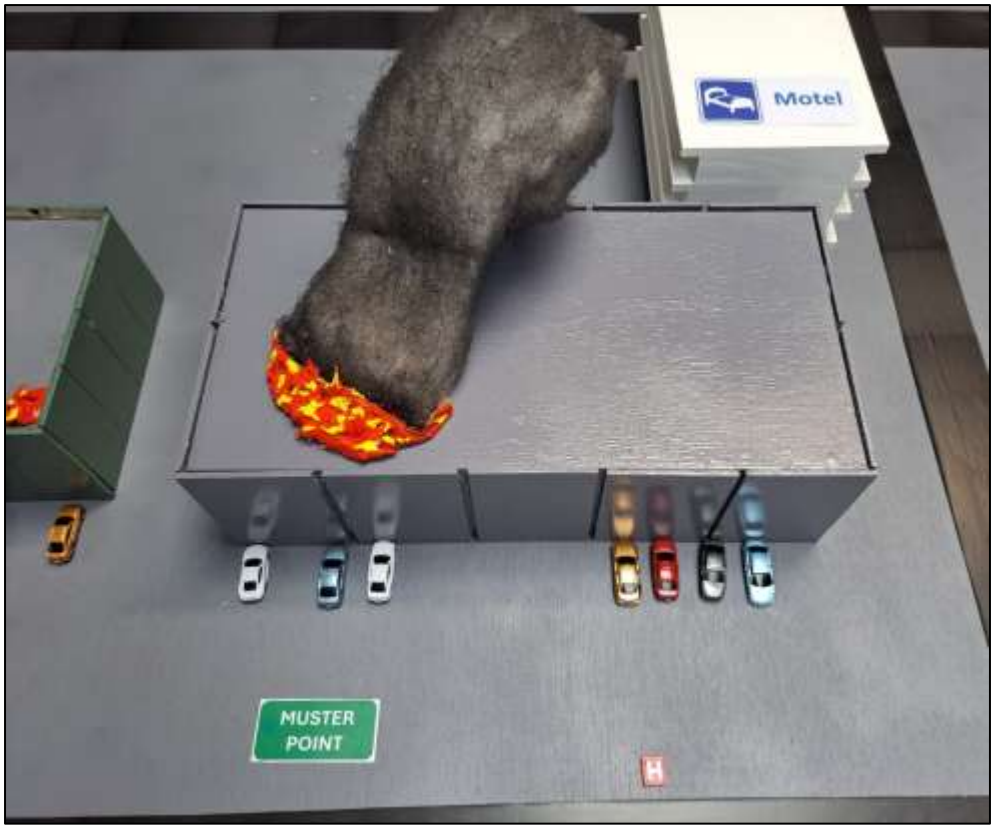


Fire and smoke have been designed to attach to vertical surfaces using Blu-Tack®. Alternatively spot fires or the other smoke plume can be placed on any horizontal / gently sloping surface.

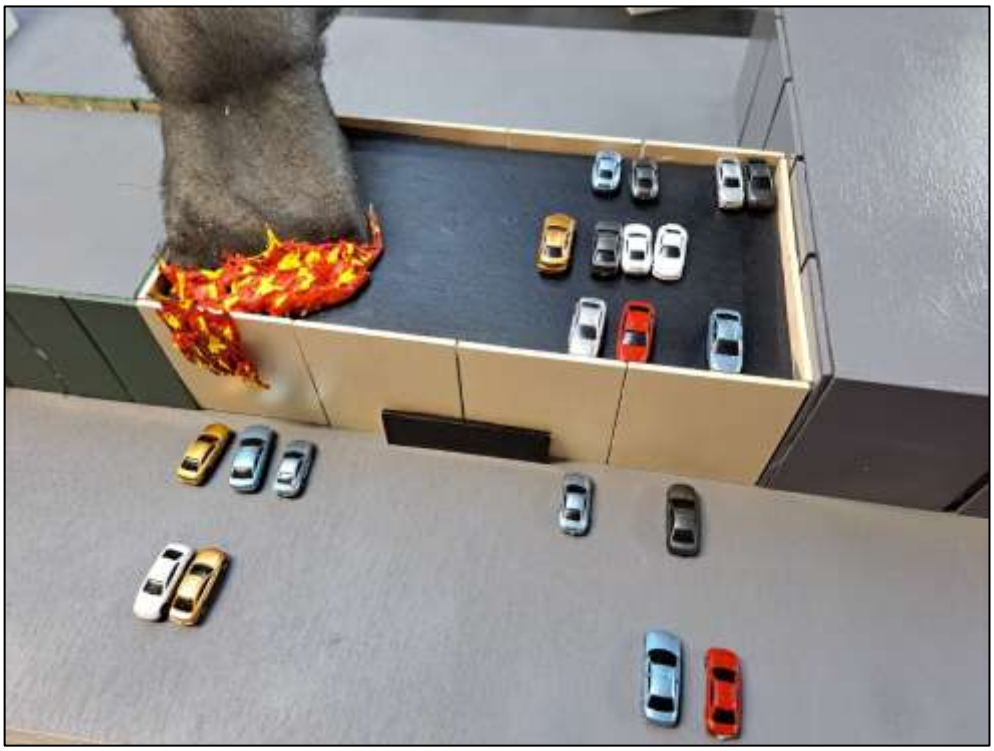


The combination of fire and smoke into a single item provides more options and can (below) be used together with the vertical flames for additional effect.





Labels can be used for buildings or other features.



Combining fire items can provide an effective picture. The shopping centre can incorporate a roof car park or be used as a multi-level car park.

Fire established on the second level of the hotel.

The fire spread from the hotel to the adjacent apartment block has fire established on both sides and different levels of the apartment block.

The growth and spread of a fire can be created by replacing houses as shown above.

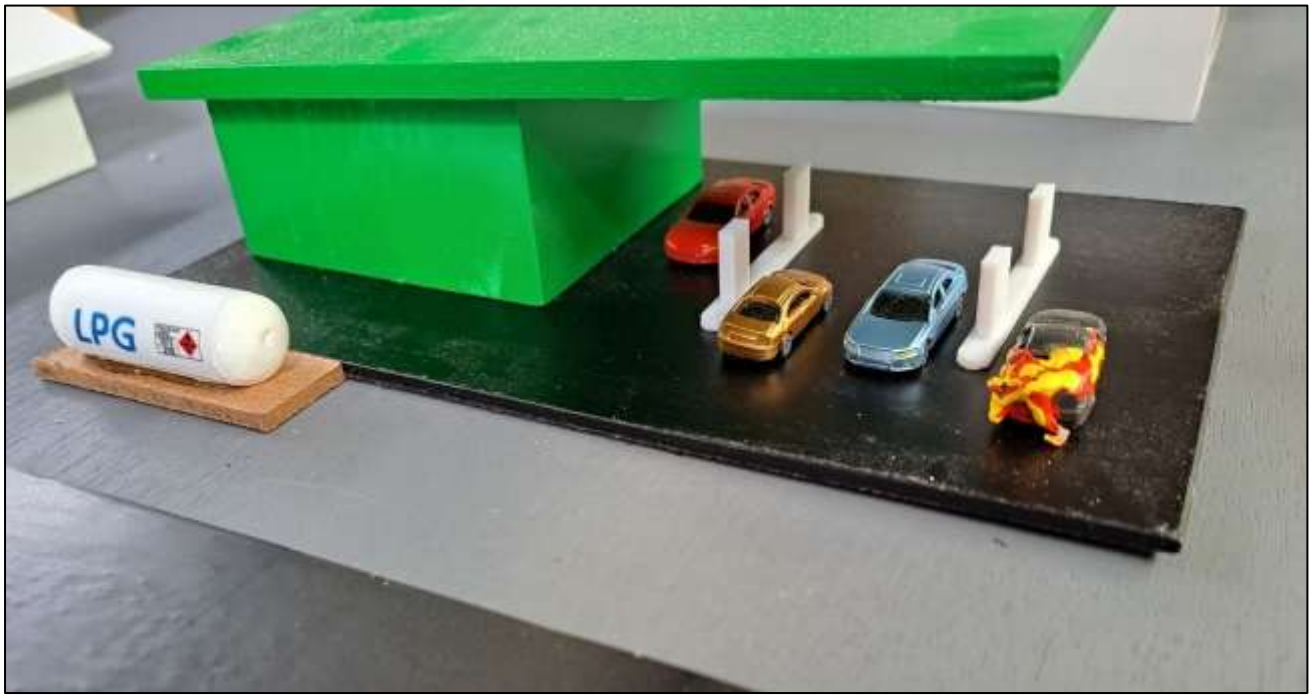
Fire in residential shed can support a range of discussions including cause, contents and access.

These sheds can be positioned in a row to create an industrial structure.

The running fuel fire can be used to increase complexity to a rescue or HAZMAT incident.

Car and caravan fires

The car and caravan fires can be positioned to create a range of different scenarios.

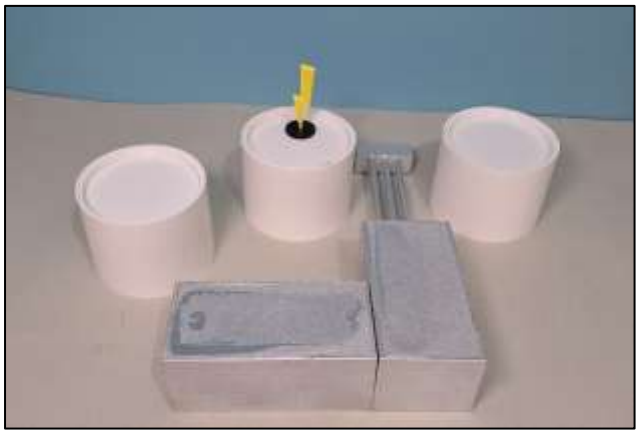


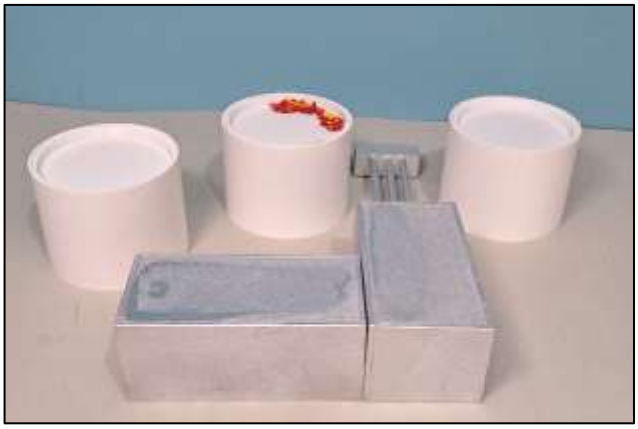
Electric vehicle fires can be simulated by placing either the small smoke or EV fire items in a range of positions. Spot fires can be inserted to show fire development.

Bulk Fuel / Fuel Farm Fires

The cause, start and full potential of fires in bulk fuel tanks can be created to support discussion concerning suppression options and calculating foam quantities.

The lightning strike is positioned to show ignition, spot fires placed around the tank's rim as ignition. The fully involved bulk fuel tank is added later. Other ignition sources may include smaller fires (spot fires) starting in other parts of the facility.





Crash / Rescue

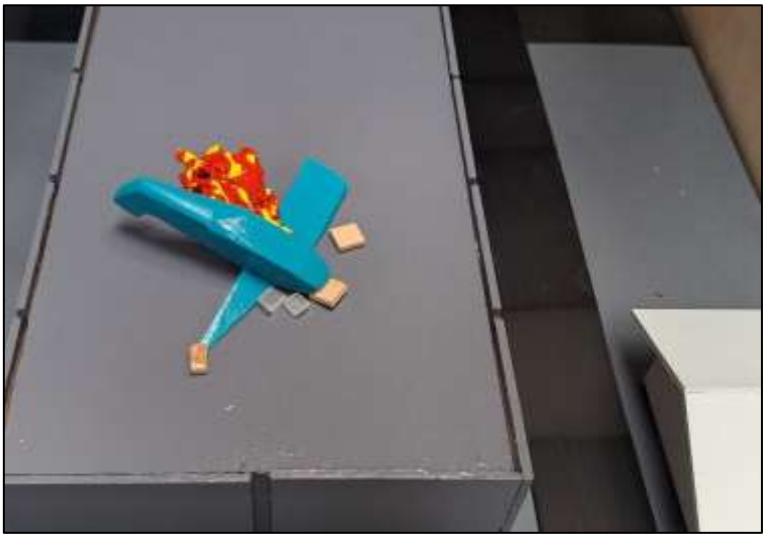
Crash / Rescue

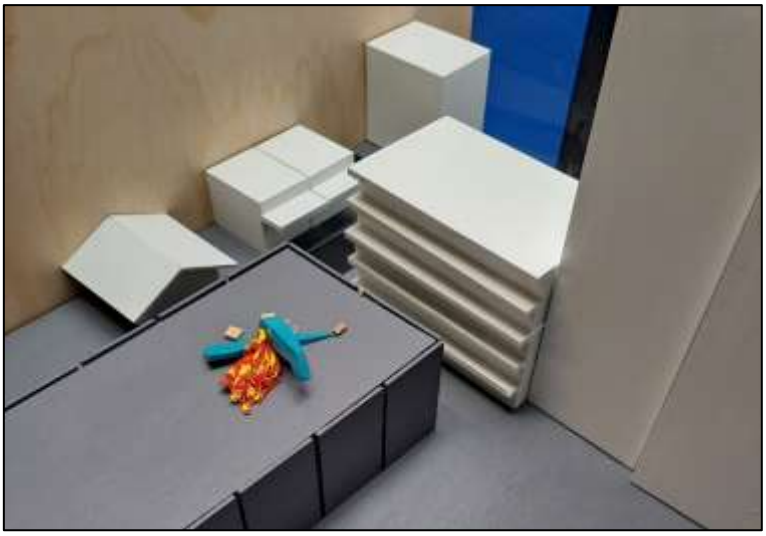
The model suits creating an extensive range of crash scenarios involving cars, buses, trains and / or light aircraft.

A major crash incident is pictured below involving a bus, train and cars. Agencies include fire & rescue, police and ambulance.

These scenarios can suit including personnel from other agencies to support discussions concerning incident control, scene management and the respective priorities.

The light plane can be used with or without fire to create a crash scenario

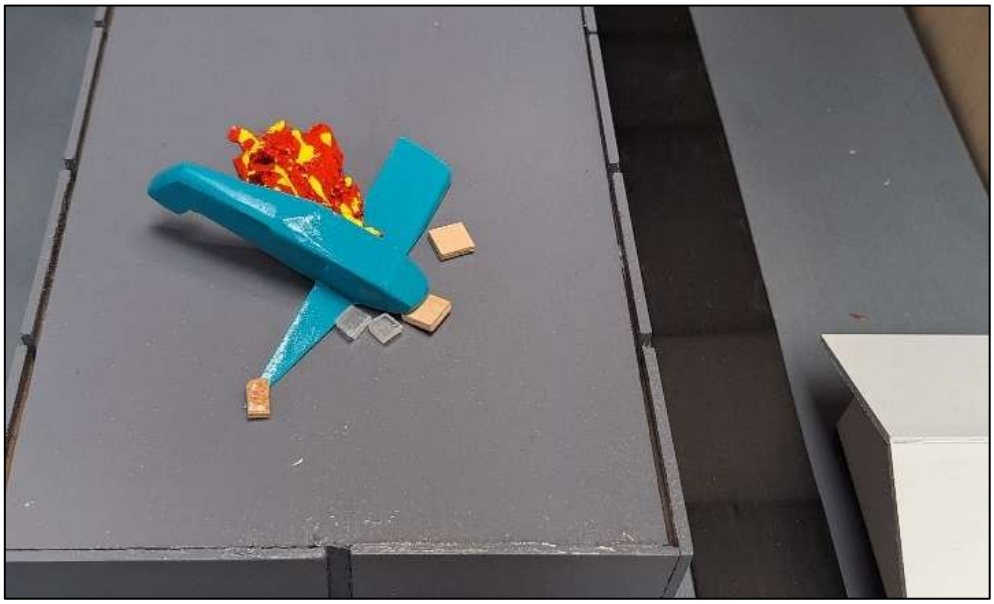




A crash involving multiple vehicles, entrapments, injuries and possibly HAZMAT can be set up.

Different crash scenarios can be created involving cars, trucks, bus, train (passenger or goods train) and even light aircraft.


Rescue

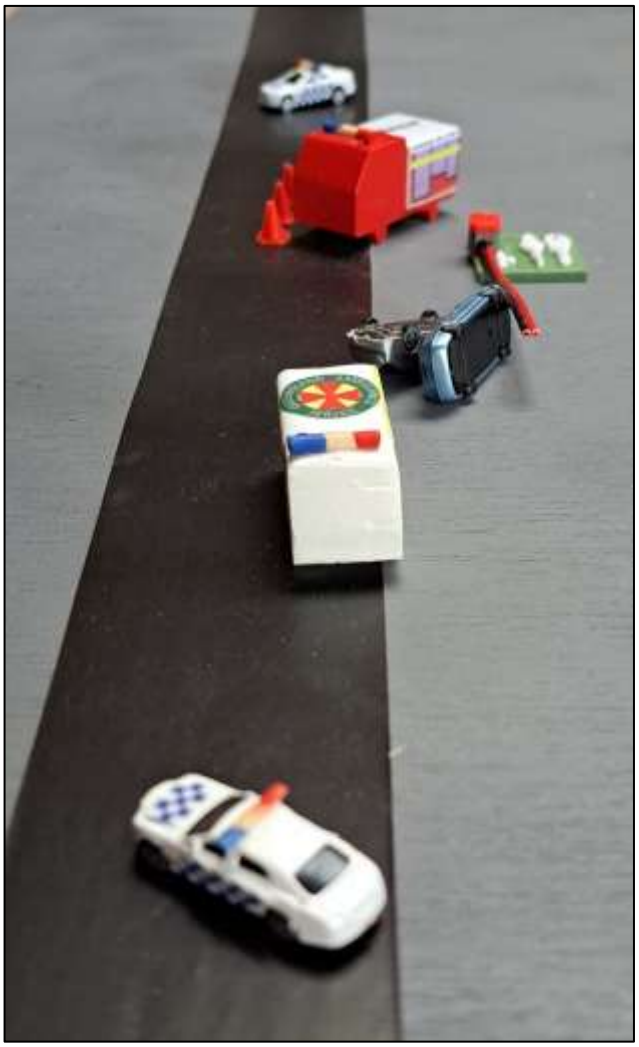


Simple scenarios may involve a single vehicle with no entrapment while more complicated examples may involve many different vehicles scenarios requiring many resources and heavy rescue equipment.

Car V Tree, Blu-tack used to position tree and car.

Fend off position.

The positioning of appliances, ambulances and rescue tools can be shown and discussed. The hydraulic pump and hose pair can be positioned to show where the tool dump needs to be set up.



The spot fires, running fuel fire and HAZMAT items can be introduced at any stage to change the incident.






Crash – truck, bus and car with fuel spill.

Trees can be used to create scenarios that replicate real events and add complications to extractions. While a single car V tree is pictured below, trees can be incorporated into any road crash rescue scenario as well as light aircraft and train crash.

Casualty figures can be used with crash rescue scenarios for those persons visible outside the vehicle.

More incident detail can be included on cards placed on the model referring to the number of casualties, fatalities, location / extraction details, scene safety – hazards / traffic conditions.

In-depth information can be presented on casualty cards placed at the incident scene to refer to individual casualties including their:

- Age / gender
- Location (e.g. front passenger seat of silver car, legs pinned by dash)
- Injuries (no visible injuries, spinal, internal, head, lacerations etc.)
- Condition (conscious, unconscious, breathing etc.)
- Behaviour (quiet, agitated, aggressive etc.)

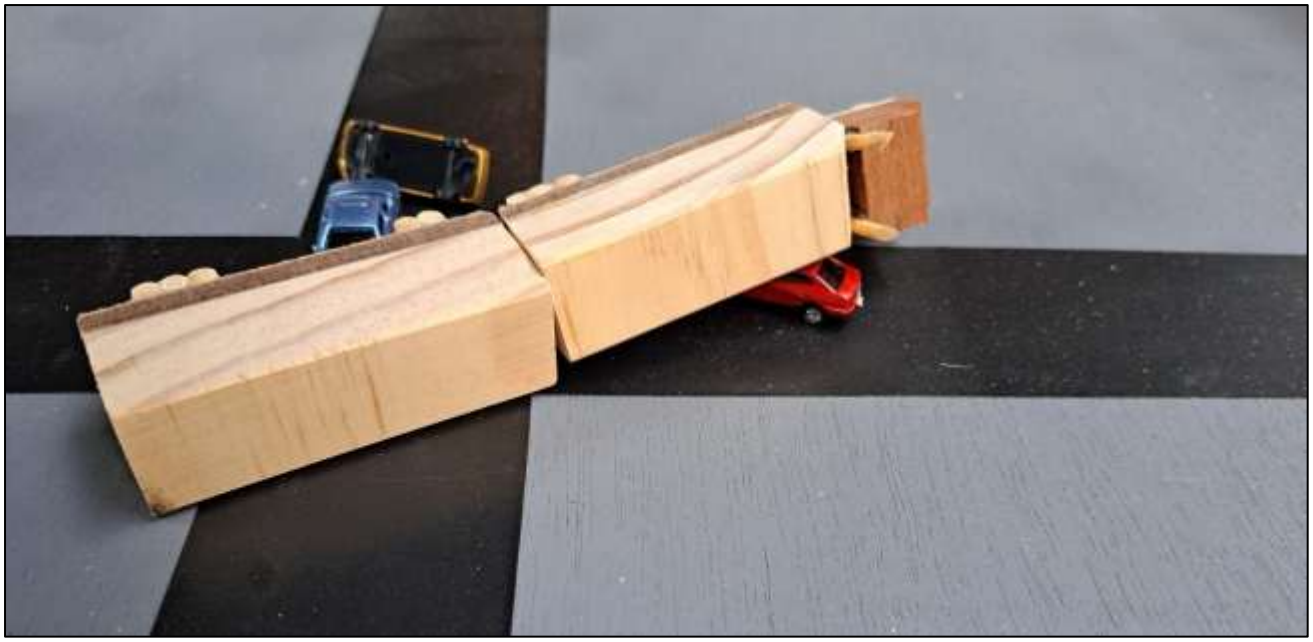
The cards can be removed as casualties are extracted and taken by ambulance or rescue helicopter. Alternatively, this approach can be upgraded for major incidents requiring triage and coordination with other agencies.

A wide range of exercise injects can be used, such as changes in the casualty's condition, ambulance personnel requesting a rapid extraction and a bystander collapsing.

The way that different scenarios influence strategies was captured in feedback from an experienced Station Officer:

> *"To have a casualty stuck in a fuel truck on fire in a suburban setting will require a different type of response than a truck on fire on a country road with the driver safely sitting with us."*

Possible crash layouts involving road train.



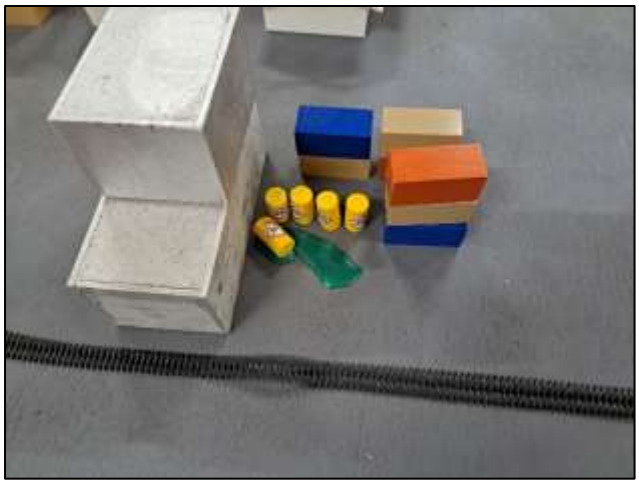
HAZMAT

HAZMAT Kit

The HAZMAT items are available as a separate kit and are used effectively in the urban landscape. HAZMAT scenarios may involve product released as liquid, gas or powder. Chemical containers include chemical drums, trucks, sea containers and bulk storage.

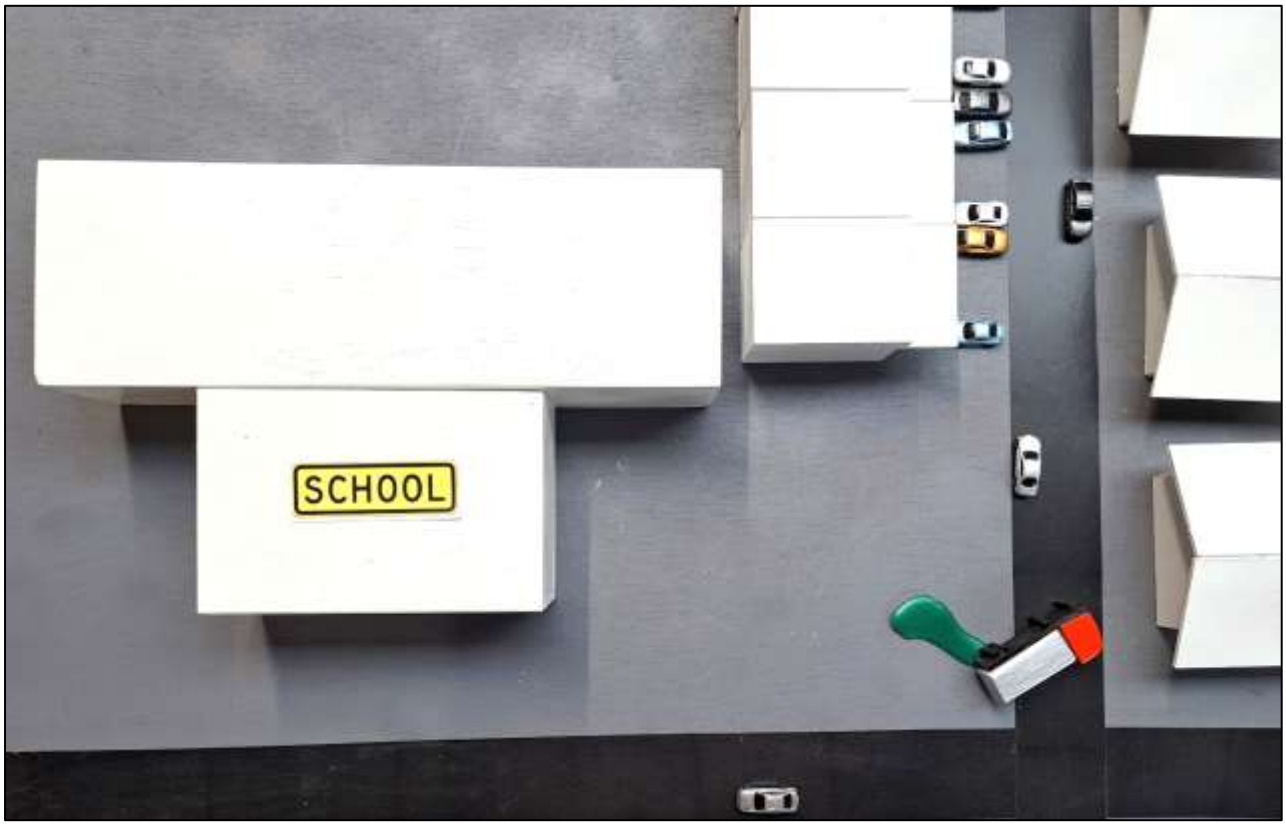
HAZMAT exercises may range from simple small-scale level 1 incidents through to complex level 3 incidents involving other agencies, evacuations and other hazards (e.g. multi-vehicle crash, train derailment)

HAZMAT spill and plume are pictured below.



HAZMAT items include:

- Bulk storage tank
- Bunding
- Casualty (red, yellow, orange)
- Demarcation lines – hot, warm & cold zones
- Demarcation lines – plume / threat zones (red, orange and yellow)
- Chemical products
    - Chemical drum
    - Chemical drum – leaking
    - Chemical 1,000 litre IBC Container
    - Gas / vapour cloud
    - Plume
    - Liquid spill (small, medium and large)
    - Liquid spill (two products mixing)
    - Liquid spill off-gassing
    - Powder / granules spill
- Truck (Four Axle Rigid)
- Truck (road train)
- Wind direction arrow (small blue)

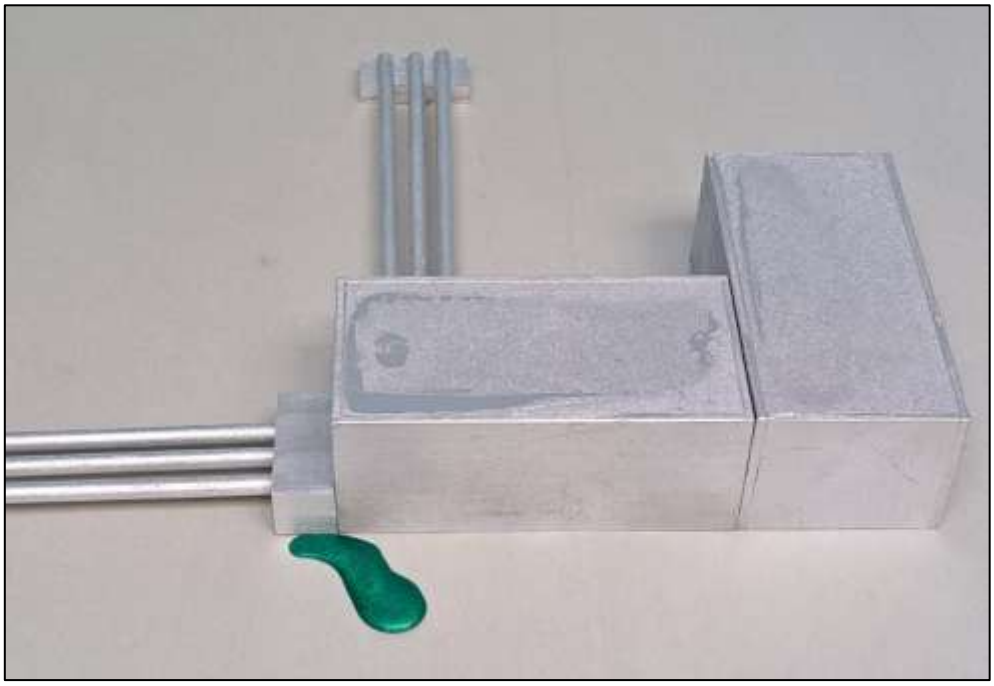


HAZMAT items include, liquid spill, liquid spill off-gassing, powder / granule spill, gas / vapour cloud.





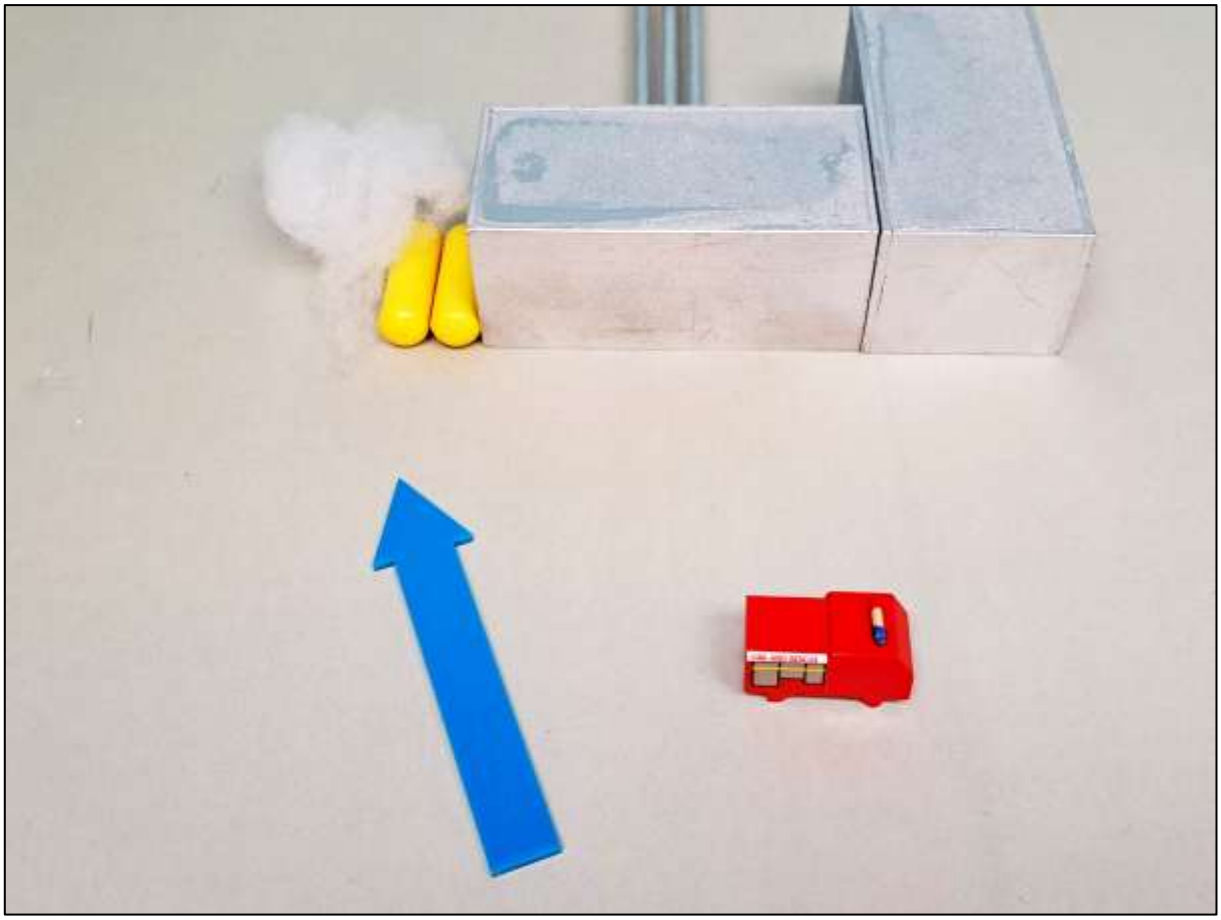

HAZMAT scenarios can be set in residential, commercial or industrial locations.



Dangerous goods placards can be created and applied to incidents to assist with product identification. Casualty and fuel spill included below to increase complexity.

The wind direction arrow assists with determining the safe approach and positioning of appliances. The wind speed can be written on the arrow using a whiteboard marker to provide more information.

Weather forecasts can also be used as part of exercises to identify wind changes and chance of rain.

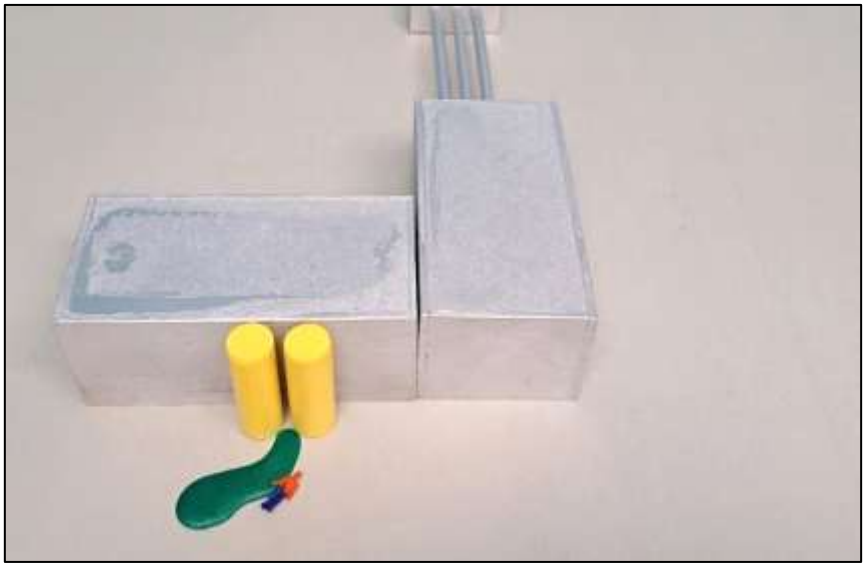


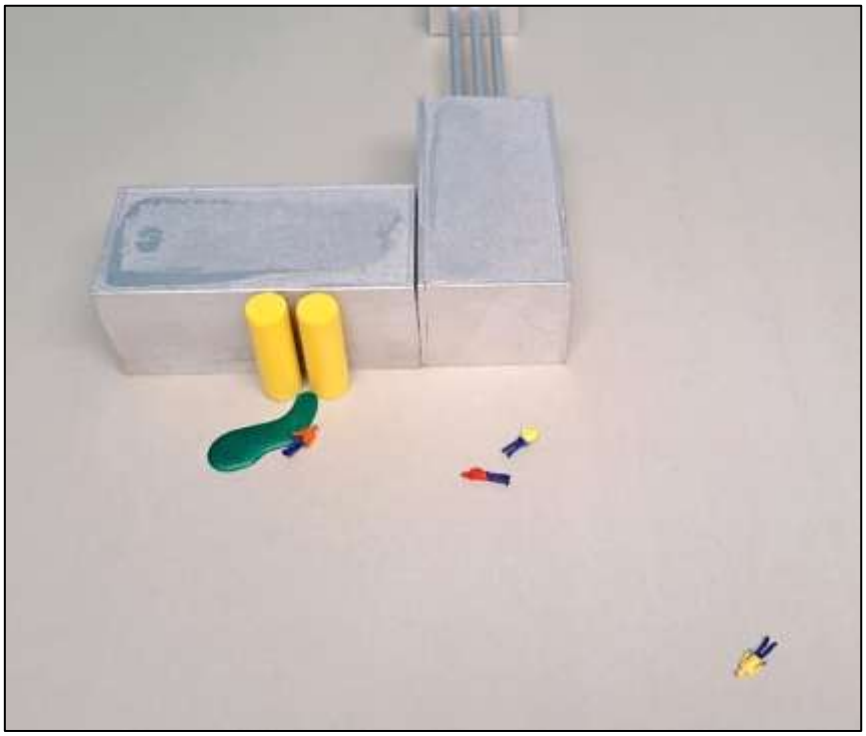
Labels can be applied to structures to indicate the presence of chemical products.

The casualty figures are used with HAZMAT scenarios to provide detail concerning incident area and rescue requirements. Because life (firefighters, casualty, bystanders and the wider community) is the highest priority at an incident strategies, tactics and taskings will need to be prioritised over property and environment.

The positioning of the casulaty in the product can change the complexity for rescue and decontamination. Multiple casualties across a large area can indicate a much larger incident area.

While the figures are used as an obvious indication of casualties; site information may also include persons who are missing but not visible.

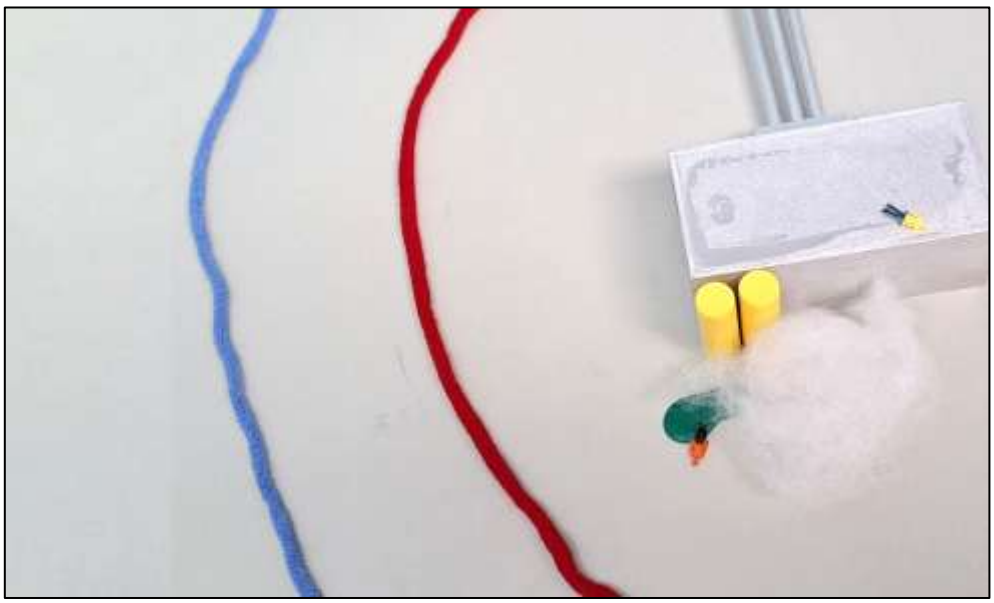




Incidents may involve one or more products requiring specialist advice.

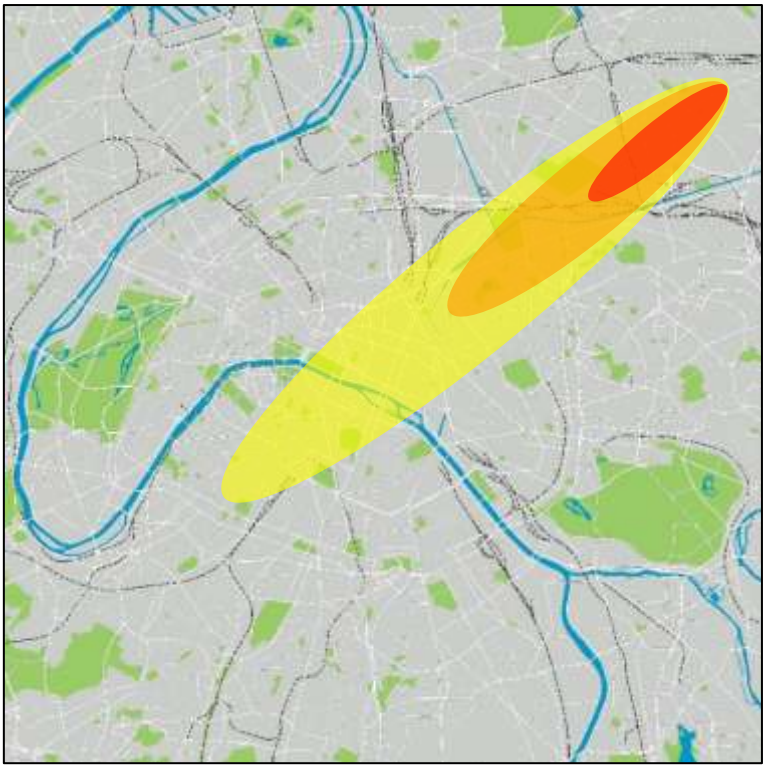
HAZMAT incidents can be made more complex when life and property are directly involved.

Coloured lines can be used to demarcate hot, warm and cold zones. Additional labels can be added to identify entry / exit paths, staging areas, decontamination etc.



Similar red, orange and yellow lines can be used on the model to represent plume modelling by demarcating chemical concentrations / threat zones.

In an exercise the model may represent a small area on a map of an actual city or town. The exercise map may include a larger view of the predicted plume dispersion. Discussions can include evacuations, sheltering in place and community messaging.



These images feature the flexible landscape mat from the Bushfire Model which is used to create valleys and hills.

The vapour cloud is used to discuss safe approach and appliance positioning. It can also be placed over / near the LPG bullet to indicate release of product.

Environmental risks can be discussed. Bunding shown below.

Appendix

Other Models & Kits

The different models and kits described in this section include:

Models

Bushfire Model ……. 68
Whiteboard Model ……. 72
Remote Area Model ……..... 74
Finer Scale Model …… 77
Emergency Services Model ……..…… 79

Kits

Field ICC Kit ……..…. 82
Air Base Kit ……..…. 83
Smoke Stand Kit …… 84

The Bushfire Model

The Bushfire Model is a versatile kit for creating a range of incident scenarios including bushfire in the Rural Urban Interface. It is available in three kits to suit different needs and budgets.

- The **Basic Kit** has the main items, suits smaller budgets and can be customised by adding other items.

- The **Standard Kit** is designed to meet most needs and is usually ordered together with the enhanced kit.

- The **Enhanced Kit** is used with either the basic or standard kits to create customised landscapes with roads, rivers and infrastructure. It is particularly useful for re-creating fires in the Rural Urban Interface.

More detailed lists of the contents of each kit together with their prices are available on request - info@bushfiremodel.com.au

Standard and Enhanced Kits

The Standard Kit includes appliances, machinery, landscape features and fire shapes to meet a wide range of needs. The Enhanced Kit takes scenarios to the next level with more features to develop custom landscapes and complex scenarios. This section collectively describes the items in both the Standard and Enhanced Kits as they are often ordered together.

The standard landscape mat (1.7m x 0.9m) is the foundation of the Basic and Standard Kits. Other custom mats include remote area, riverine and large (~ 2.4m x 1.8m). All mats come ready to create scenarios and can be turned over to create a customised landscape on the blank side.

Some of the items available in the Standard and Enhanced Kits include:

- Ambulance
- Appliance - Light tanker (Rural Fire)
- Appliance - Light tanker (Fire & Rescue)
- Appliance - (Fire & Rescue)
- Appliances – Rural Fire, state specific
- Bridge (road and rail)
- Building – Bushfire Shed
- Building – Chemical Storage
- Building – Council Office
- Building – Evacuation Centre
- Building – Fire Station
- Building – Hospital
- Building – House (partly & fully alight)
- Building – House (white and timber)
- Building – House with solar panels
- Building – Incident Control Centre
- Building – Motel
- Building – Residential Aged Care
- Building – Power Station
- Building – School
- Building – Service / Fuel Station
- Building – Shed
- Building – Stable
- Building – Supermarket / Grocery Store
- Building – Tyre Shop
- Building – Winery
- Burnt ground (mesh and fabric)
- Bulldozer D6
- Bush (fabric)
- Car
- Caravan Park
- Collar Tank
- Communication panel
- Containment line
- Control point
- Dam
- Farm firefighting unit
- Fire shapes
- Front End Loader
- Grader & windrow
- Haystack
- Helitak
- Hill
- Hydrant
- Incident Control Vehicle
- Lake
- Landscape mat
- Lightning strike
- Log heap and log heap burning
- Low loader
- LPG cylinder /bullet
- Pipeline
- Police Station / Police car
- Power lines
- Railway line
- River (fabric)
- Roads: main, secondary & gravel
- Road closed
- Road train
- Rocks
- Scale ruler
- School bus
- Sector boundary / names
- Smoke
- Sports Oval
- Spot fire
- Standpipe
- Tags
- Tower (mobile phone & radio)
- Truck – Diesel and LPG
- Unburnt pocket
- Water bomber (AT 802)
- Drops (water, foam & retardant)
- Water tanks
- Water truck
- Wind direction

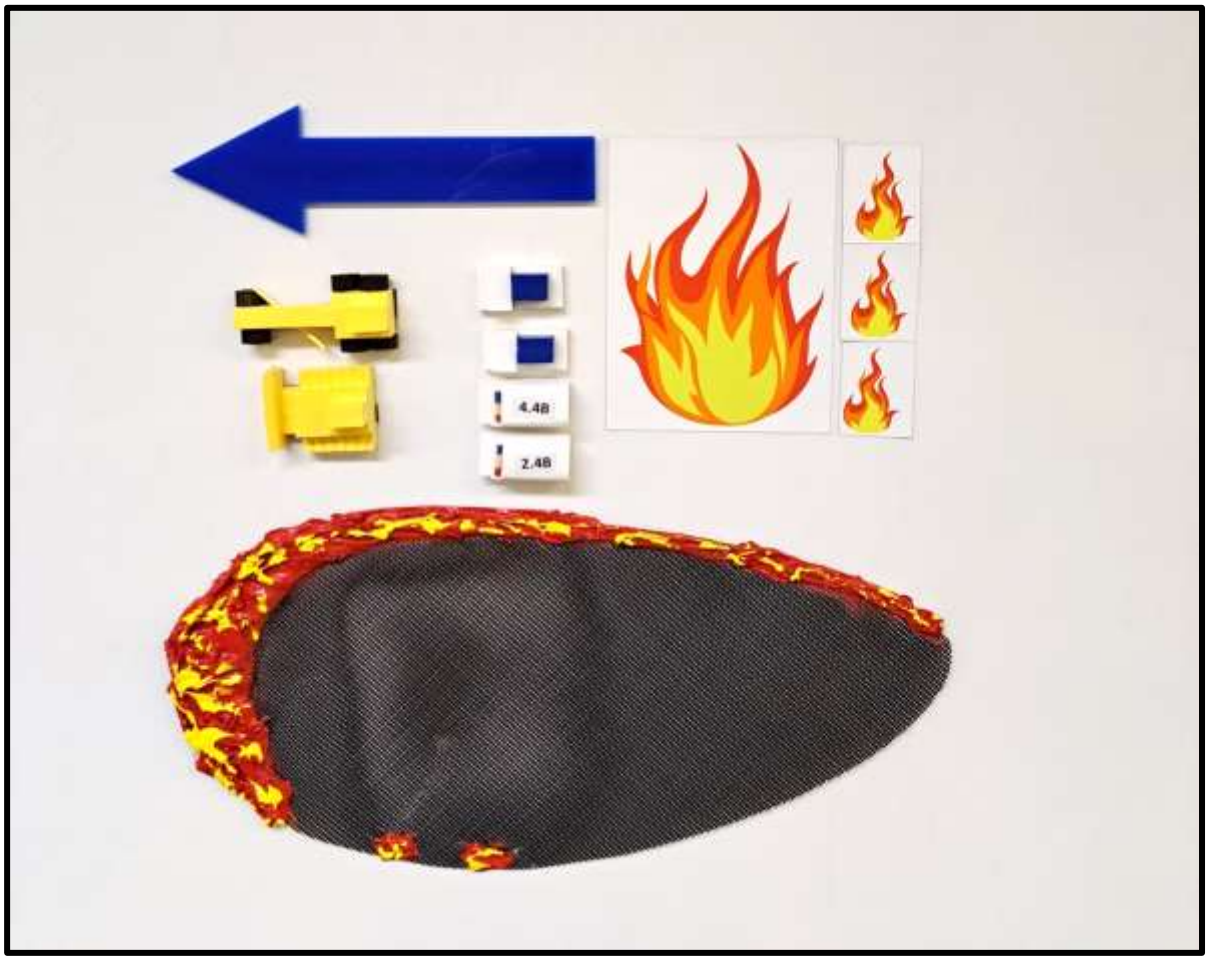
Whiteboard Model

Several items are suitable for use on whiteboards and are included in a stand-alone whiteboard model.

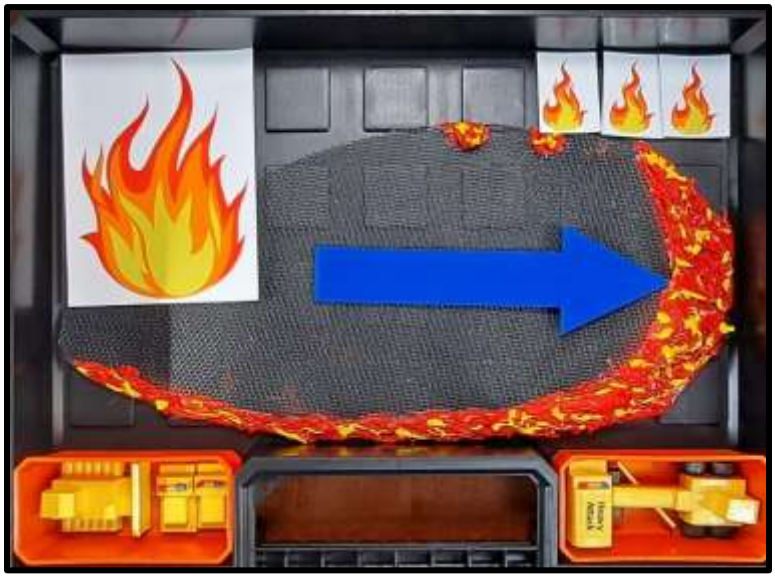
This model is used to deliver clearer images while reducing time spent drawing and cleaning whiteboards. It contains:

- Appliances (state specific)
- Bulldozer
- Farm firefighting unit
- Fire shape
- Fire Image
- Grader
- Spot fires (images)
- Wind direction arrow

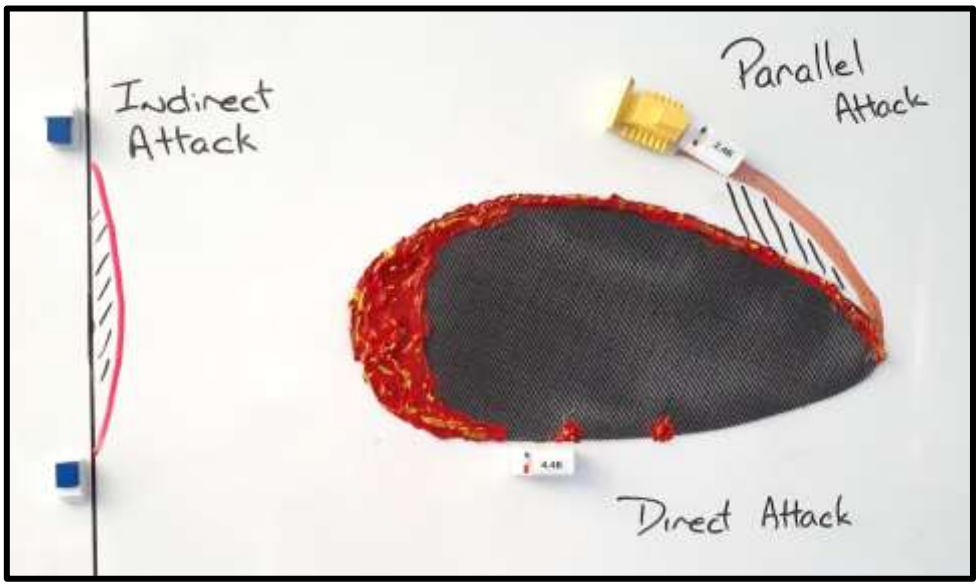
The model is used to quickly produce clear pictures on whiteboards.



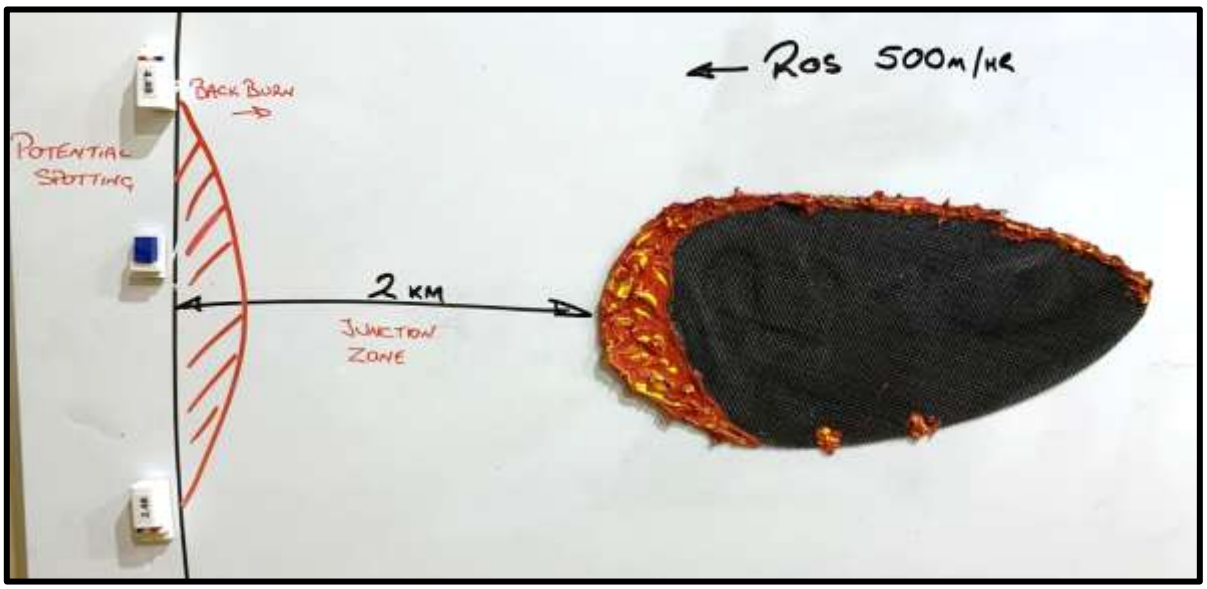
All components are contained in a carry case.

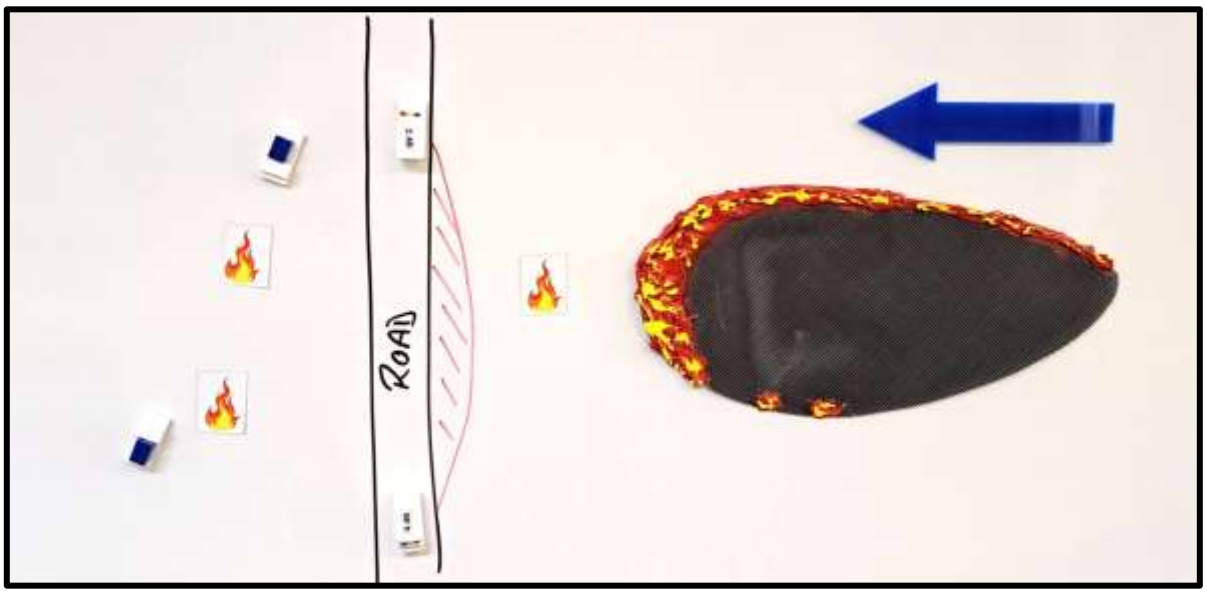


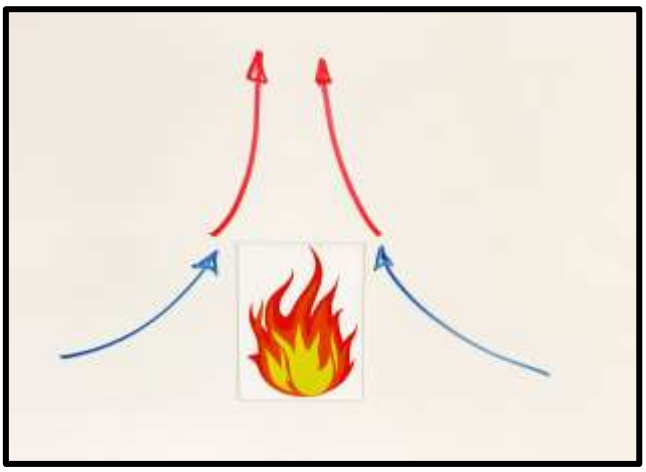
Text and items are used to clearly convey concepts on whiteboards.



Demonstrating forward rate of spread and planning for a backburn. Junction zone, spotting and resource positioning.





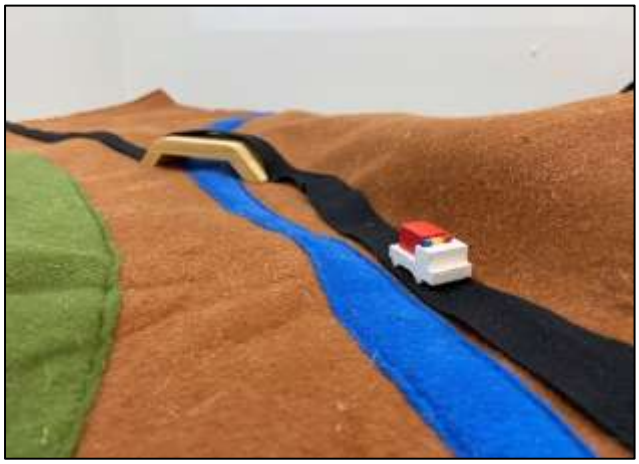


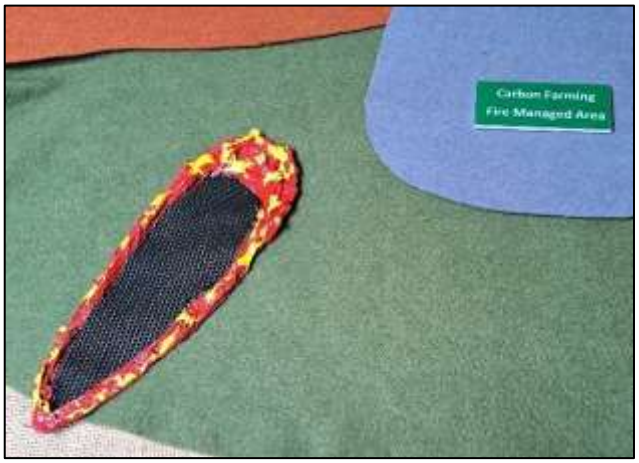
Remote Area Model

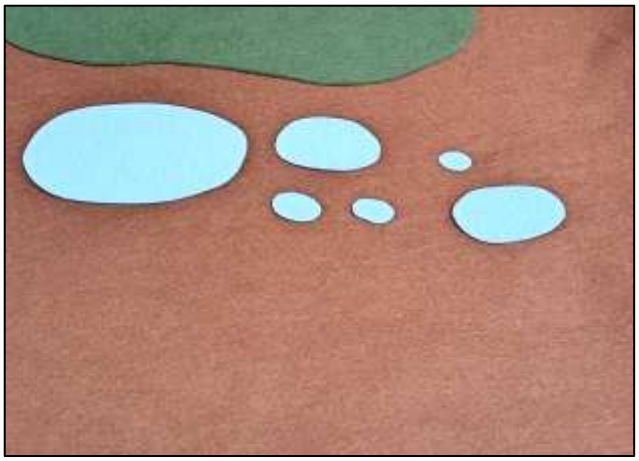
The Remote Area Model was custom-made for the WA Bushfire Centre of Excellence and the Department of Biodiversity Conservation and Attractions to support fire training in inland areas and an Aboriginal Fire Training Program.

The model features a landscape mat customised for inland areas along with items including:

- Aboriginal Heritage Sites
- Carbon Farming
- New fire shape designs
- Mine sites
- Rangers Station
- Salt lakes







Finer-scale Model

This model is designed to accommodate a higher level of detail and can be used with the standard or large landscape mats. With items at a smaller scale, this kit is better able to replicate urban areas.

Individual features include, smaller houses, different smoke columns, crown fire, spot fires establishing under strong wind and ember attack.

The kit uses the blank side of a landscape mat (Standard Kit) and contains:

Appliances:
- urban pump
- urban fast attack
- rural pump / tanker
- rural light tanker
- farm firefighting unit

Buildings:
- hospital
- houses
- school
- industrial shed

Caravan

Ember attack

Crown fire

Fire shapes and spot fires

Machinery:
- D6 Bulldozer
- Bulldozer with Tree Arm
- D10 Bulldozer
- Front End Loader
- Posi Track / Skid steer / Bobcat
- Grader
- Excavator

Smoke:
- white / thin / vertical
- white levelling out with inversion / starting to break through
- dark laying over

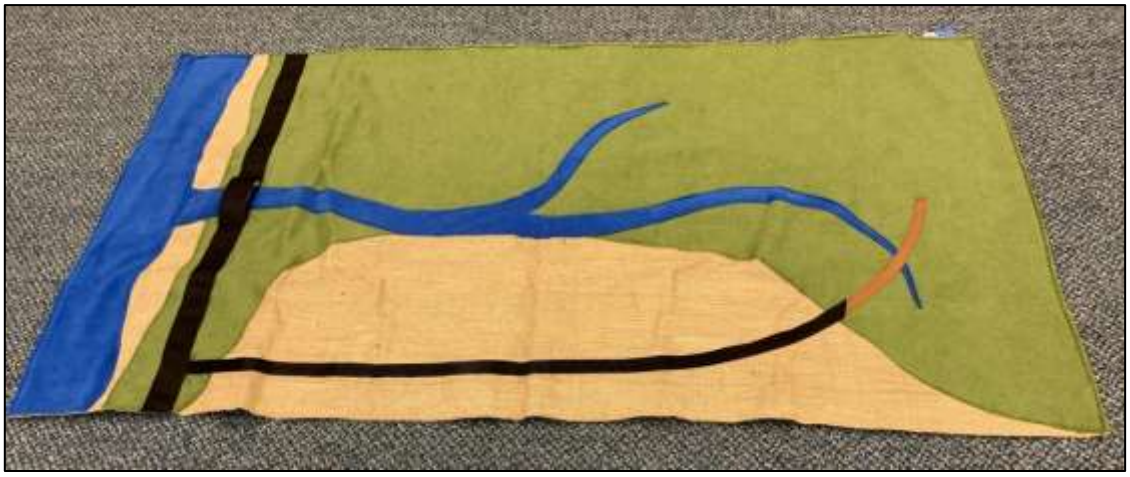

Smoke plume under inversion layer and showing the inversion layer weakening.


Thin plume with no wind, darker smoke indicating greater fire intensity.

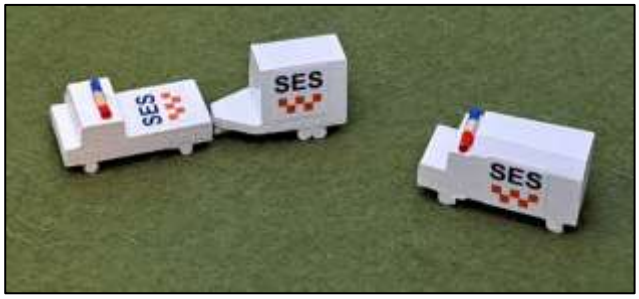
Emergency Services Model

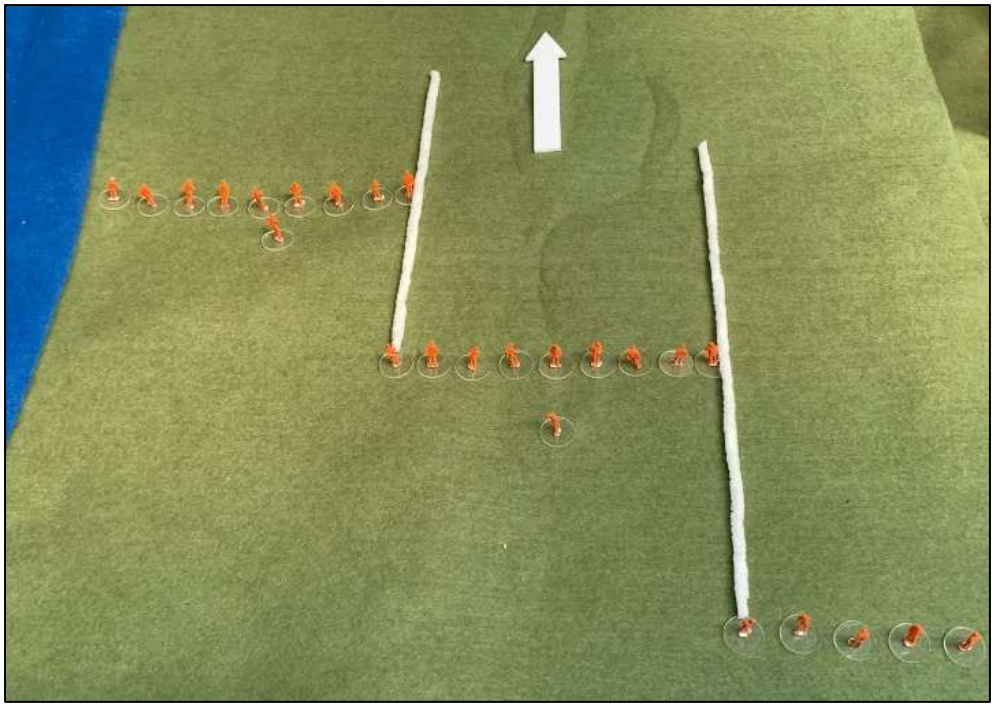
The Emergency Services Model was designed on request from the Queensland State Emergency Service and covers a range of incidents and actions including:

- Severe Weather
- Land Search
- Fire
- Crash / Rescue
- Community Warnings
- HAZMAT

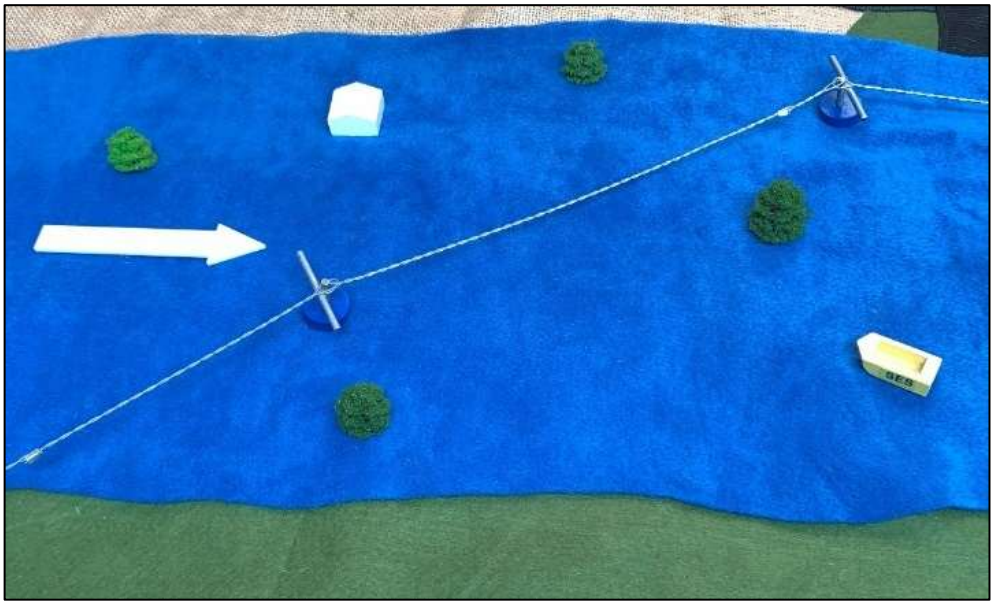


Riverine mat – river feeding into larger river or flowing to coast / ocean.





Land Search – search pattern



Flood scenario

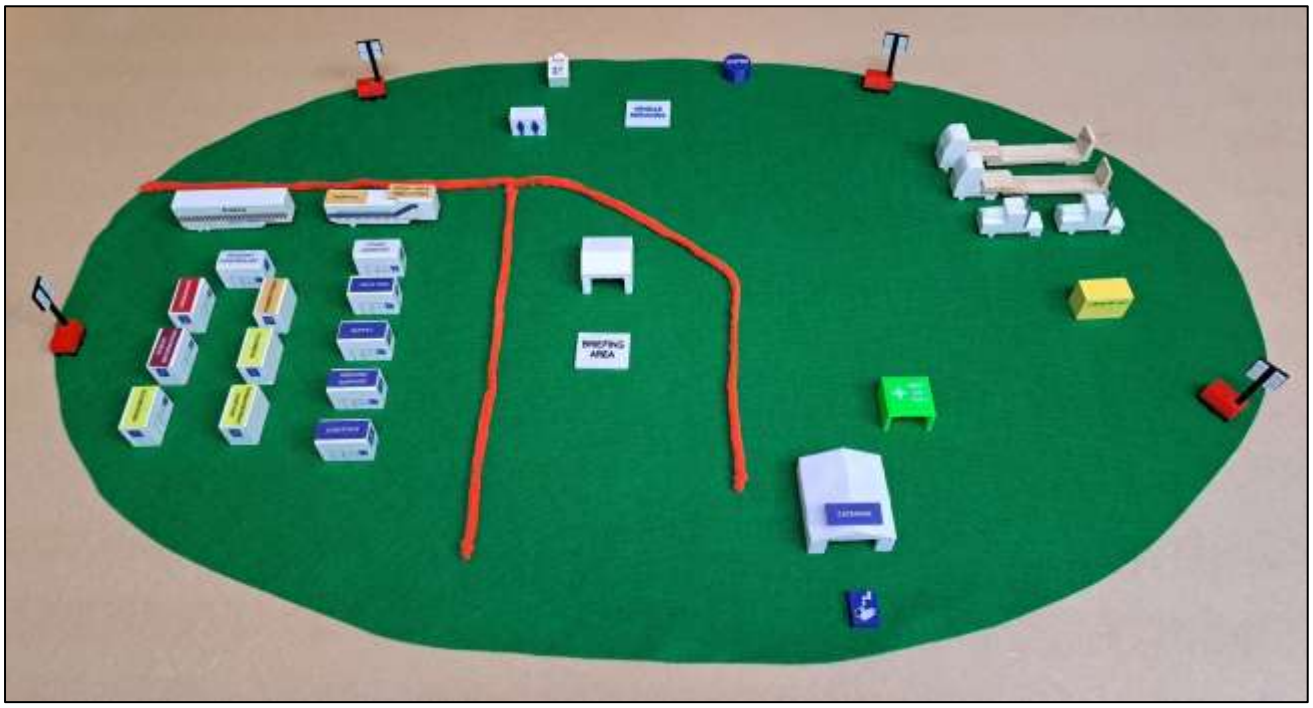
Kits

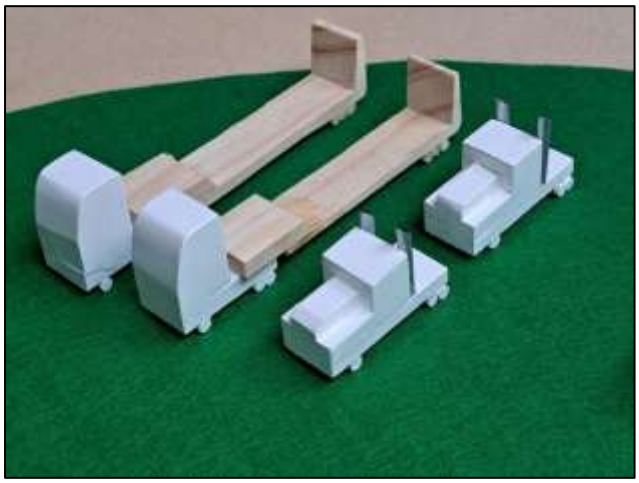
Field ICC Kit ……..…. 94
Air Base Kit ……..…. 95
Smoke Stand Kit …… 96

Field Incident Control Facility Kit

A mobile Incident Control Facility can be used to demonstrate set-up and operation.

This kit comes with oval, sea container offices, lighting towers, marquee, mobile communications facility, fuel trailer and police command vehicle.

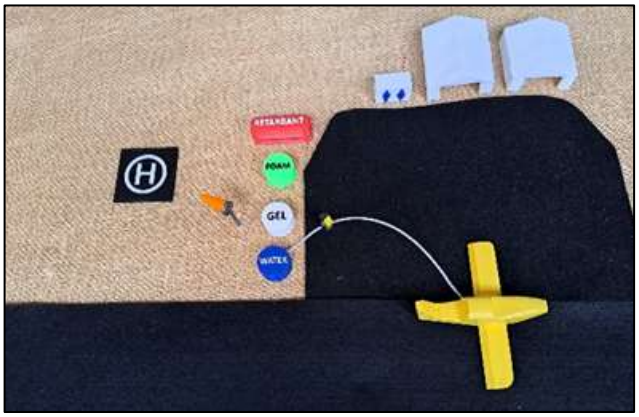


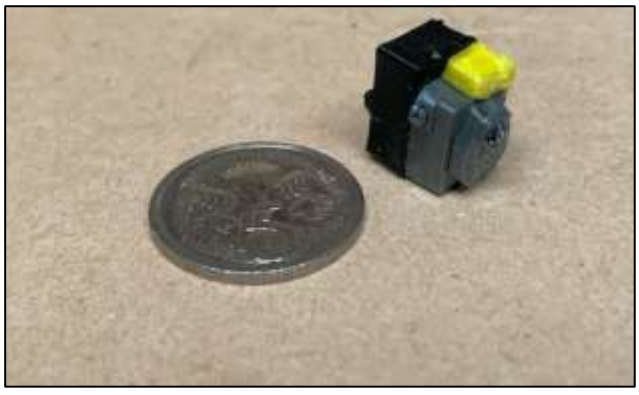


Air Base Kit

The Air Base kit was designed for Queensland Fire Department's Air Operations Unit to support their training program. The kit includes a wide range of items specific to air base management, including:

- Bulk Water Tanker
- Collar tank
- Fuel Truck
- Fuel (drums on pallet)
- Helicopter (bambi bucket)
- Helicopter Landing Area
- Marquees
- Pump & hose
- Runway (1 x ~1,800 mm, 1 x ~1,400mm)
- Runway - apron
- Tank – Foam, Gel, Retardant, Water
- Water Bomber AT802
- Windsock





Smoke Stand Kit

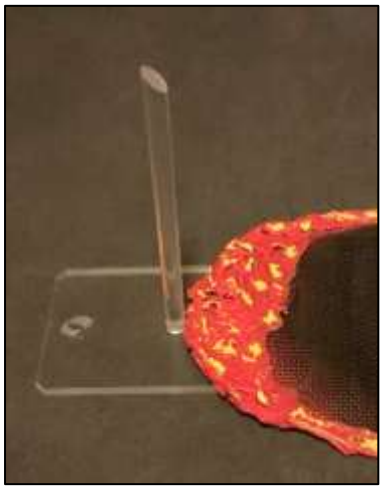
The smoke stand is designed to show smoke plumes in different positions and shades of darkness and positions. These arrangements are used to show various levels of fire intensity and indicate changes in fire behaviour.

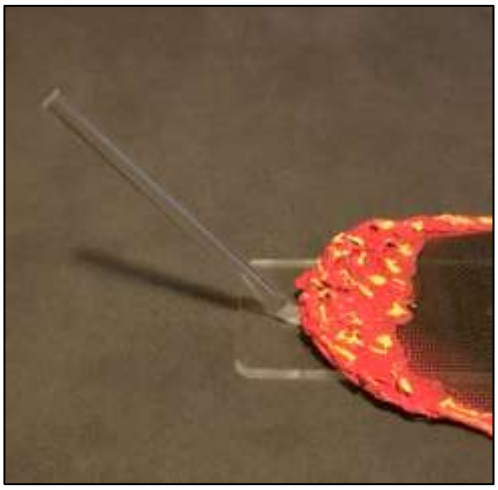
The three smoke plumes are:

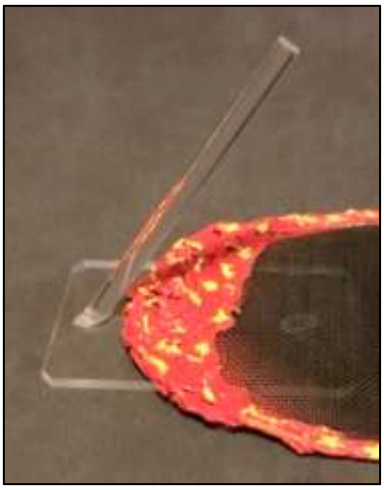
- all white,
- white, darkening at the base and
- all black

These positions include smoke plumes positions including smoke:

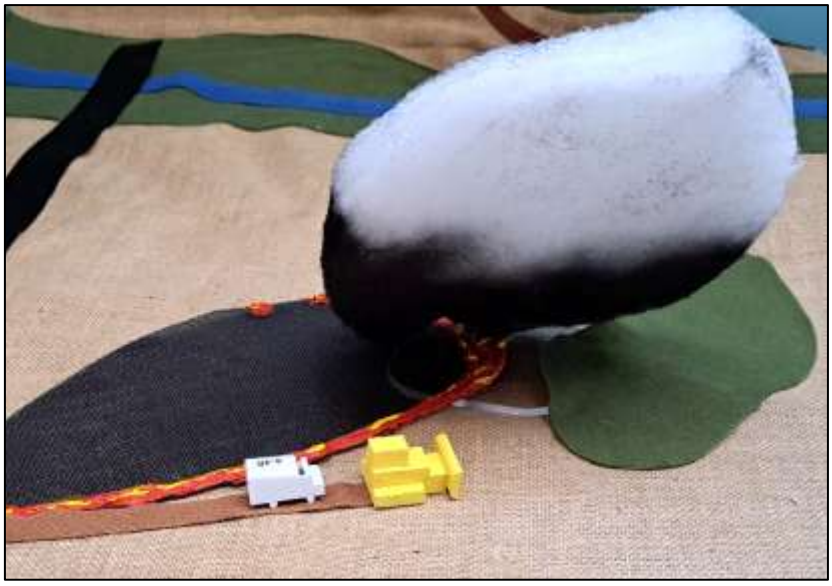
- Laying over behind or in front of the head fire
- Elevated in front or behind the head fire
- Rising straight up







Moving the plume over fire appliances indicates a wind change and possible risk to firefighter safety.



Please contact us if you would like more information on the range of models and kits available.

info@bushfiremodel.com.au