

GENERAL CONDITIONS, REQUIREMENTS & SPECIFICATIONS for Waterway Challenges

June 2025

(Changes from 2024 denoted in red)

INDEX

ENTRY REQUIREMENTS	3
TEAM REQUIREMENTS	4
OFFICIALS	6
EQUIPMENT	10
TRACK CONDITIONS	14
RESULTS	15
EVENT A1 - DRAW FOR PLACES (4 person)	16
EVENT A2 - DRAW FOR PLACES (2 person)	18
EVENT A3- GROUND MONITOR (4 person)	20
EVENT A4 - GROUND MONITOR (2 person)	22
EVENT A5 - EXTINGUISHER AND DELIVERY (4 person)	24
EVENT A6 - EXTINGUISHER AND DELIVERY (2 person)	26
EVENT A7 - HOSE REEL AND DELIVERY (4 person)	28
EVENT A8 - HOSE REEL AND DELIVERY (2 person)	30
EVENT F9 - HYDRANT WITH HOSE (4 person)	32
EVENT F10 - HYDRANT WITH HOSE (2 person)	34
EVENT F11 - HYDRANT WITH FORESTRY HOSE (4 person)	36
EVENT F12 - HYDRANT WITH FORESTRY HOSE (2 person)	38
EVENT P13 - CHANGEOVER (4 person)	40
EVENT P14 - CHANGEOVER (2 person)	42
EVENT P15 - STRAIGHT SUCTION (4 person)	44
EVENT P16 - STRAIGHT SUCTION (2 person)	46
EVENT P17 - SUCTION WITH FORESTRY HOSE (4 person)	48
EVENT P18 - SUCTION WITH FORESTRY HOSE (2 person)	50
EVENT IP - INTER-PROVINCIAL CHALLENGE (4 person)	52
TABLE OF PENALTIES	54
TRACK SETUP GUIDE	55
APPENDIX FOR EVENT'S A1 & A2 - DRAW FOR PLACES (Referees Officiating Notes)	56

ENTRY REQUIREMENTS

BRIGADES

Brigades will:

- Be eligible to enter a composite team providing that team members are all from the same
 province (as determined geographically by Provincial Fire Brigade Association's). All
 composite teams will be subject to Challenge Panel approval. If the composite team entry is
 for a National Waterway Challenge, the team must have competed in a Regional or
 Provincial Waterway Challenge in the 12-month period prior to the date of the National
 Challenge.
- Be eligible to enter one four-person team and/or one two-person team per brigade into the
 UFBA National Waterway Challenge provided the team has competed in a Regional or
 Provincial Waterway Challenge in the 12-month period prior to the date of the National
 Challenge. Any additional brigade teams will be considered on a case-by-case basis by the
 Challenge Panel, with the final decision being that of the Challenge Panel leader.
- Ensure team members are a full member of a brigade, before they are allowed to compete at a UFBA Challenge.

THE UFBA

The UFBA Events Team will:

- Advise all teams entered of their acceptance.
- Advise team funding as per UFBA funding policy.

TEAM REQUIREMENTS

TEAMS

Teams will:

- Comprise of a maximum of five persons for a four-person team and a maximum of three persons for a two-person team.
- No person can compete in both two and four person sections at the same UFBA funded challenge.
- Assemble for the roll call, an inspection and the official opening of the challenges. Any team not attending this inspection may be disqualified from the overall challenge.
- Be permitted a maximum of three minutes from the time it is called to the track until the start of the event.
- Ensure they compete in all relevant events.
- Ensure they comply with the requirement to be fully dressed, including helmets and gloves, before entering the track to prepare prior to actually competing and clearing the track following each event.
- Ensure that the Field Secretary is advised as soon as possible if a team member becomes ill, injured or incapacitated for any reason and if required, produce a medical certificate as proof of the incapacity.
- Notify the Field Secretary prior to the starting time giving their reason for not being able to compete in any event.
- Face team disqualification from the overall challenge by the UFBA Challenge Panel for bringing the UFBA or FENZ into disrepute by use of disrespectful behaviour whilst attending and / or participating in the Challenge. In the event of a team disqualification, your team will not retain nor receive any points, certificates and event prizes and may be held responsible for any team costs related to the Challenge.
- Reassemble on the start line after being recalled following starting break. The team will be readdressed only if there is a starting malfunction (see Starter/Marshall).
- Have 20 minutes to lodge a protest from the completion time as indicated on the timecard. Any protest against a referee's ruling must be lodged with the Field Secretary.
- Submit any protest in writing on the prescribed form accompanied by a cash deposit of \$100.00.
- Be entitled to use a substitute that meets the approval of the Challenge Panel if a team member becomes ill, injured or incapacitated during events. Have one person present in the protest room only to present evidence in support of the protest enquiry and speak on behalf of the team's written submission.
- Aside from Allotted Duties Events, ensure that only the team members physically competing
 in each particular event enter the challenge area to stow the appliance prior to each event
 (i.e., the third / fifth team member cannot assist). Non-compliance may result in a
 disqualification for that event. All members may assist to clear track providing correct PPE
 is worn.
- Comply with the requirements to be fully dressed, including helmets, during each event.
- The Time Keeping area on any track is out of bounds to EVERYONE except the Referee.
- In order to qualify for team points, each team member must compete in a minimum of four events lining up for the draw in allotted duties events is classed as competing. **ALL** team members will line up for the draw in allotted duties events.

TEAM CAPTAIN

The Team Captain will:

- Ensure the team registration card is correctly completed and submitted to the Field Secretary prior to the challenge commencing.
- Attend the Team Captains' meeting with the Challenge Panel prior to the challenge commencing.
- Have the right to object to the Referee if it is considered a Judge is compelling the team to place gear contrary to the printed conditions.
- Respond to the Marshall immediately the team is called.
- Approach the Referee for interpretation of the event being run if required.
- The Team Captain is required to report at the completion of the run, to the mark which has been identified on the Track with the letters "TC" sprayed. This mark is generally between the Start Line and the Timekeepers Tent.
- Request a Re-Run from the Referee if applicable before accepting signing of the card

TEAM UNIFORM

- At all challenges held under the auspices of the UFBA, team members will run in the approved team uniform during all events.
- The approved uniform will consist of full-length shirt **sleeves** and full-length **trousers** or FENZ approved Level One equivalent. Sleeves will not be rolled up nor will they be taped up at the cuff. Trousers may be tucked into the socks and no tape is to be used above knee height. (This excludes skins or lycra styled clothing)
- Where service-type jackets are worn during challenges, then no belt is to be worn around the waist.
- Fire and Emergency NZ standard approved safety glasses (including tinted) can be worn during the event. Sunglasses are not to be worn.

FOOTWEAR

• No spikes e.g., cricket or golf sprigs or athletic spikes to be worn.

GLOVES

- Gloves of a general-purpose style will be worn. Fingerless or medical barrier gloves are not acceptable.
- Gloves will be worn during all events. In the event of a glove falling off, that member must take immediate action to put it back on.

HELMETS

- ALL helmets must be manufactured to meet the minimum FENZ standard, which are AS/NZS4067:2012 or AS/NZS 1801:1997.
- Helmets will be worn during all events. In the event of a helmet falling off, that member must take immediate action to put it back on.

SPONSORSHIP

• Sponsorship is not to be displayed on any clothing within the confines of the competing area. (This includes helmets)

OFFICIALS

UFBA

Events Team will:

- Take minutes at the Team Captain's meeting and email immediately following the meeting
 to all team captains and post a copy at the track a copy will be available for viewing on
 request.
- Call for nominations from brigades for potential officials for all UFBA Challenges.
- Advise officials of their positions prior to the due date for challenge registrations.
- Destroy score cards one week following the conclusion of each UFBA Challenge.
- Receive the protest register and account for the protest monies at the end of the Challenge.
- Display results from UFBA Challenges on the Association website within one week of the Challenge.

Challenge Panel will:

- Appoint officials to run the National, Regional and Island Challenges.
- Approve the track setup with the equipment that is available on the day.
- Decide a charitable organisation to receive protest monies and announce at prize giving including total donated.
- Be enabled to nominate one member from the Challenge Panel to fulfil a position on the track as an official, in the event of an emergency.

OFFICIALS

Officials will:

- Meet the Challenge Panel at a directed time and location prior to the challenge commencing.
- Attend the Team Captain's meeting.
- Dress for challenges to comply with Fire and Emergency NZ dress regulations or wet weather gear including Fire and Emergency NZ or UFBA approved caps or sun hats or any uniform supplied by the UFBA. Shorts are not an acceptable form of dress.
- Have judged or refereed in a Regional-Island or Provincial Waterway Challenge in the 12month period prior to the date of the National Challenge in order to be considered as a judge or referee at any National Event.
- The referee and Starter/Marshall will be clearly identifiable.
- NOT use cell phones on the track during challenge.
- NOT use individual stop watches during challenge (Marshalls & Timekeepers excluded).
- NOT smoke on the track.
- Approach the Referee if seeking interpretation of the event being run.
- Only allow competitors competing or picking up gear on to the track.
- Wear gloves when handling any Waterways equipment.

REFEREES

Referees will:

- Be the designated safety officer in charge of that track.
- Stop an event in the likelihood of any person or persons being injured or if any equipment is in danger of being damaged.
- Be responsible for the placing and management of the officials on the track.
- Collect the score card from the Timekeeper, sign all time score cards and record the appropriate penalties (Field Secretary to total event time). Explain penalties to Team Captain and ensure the Team Captain signs the card
- Determine and approve a re-run if requested by the Team Captain where appropriate.
- Have the sole rights of imposing penalties after considering reports from Judges.
- Give an interpretation of the event being run if requested.
- In the event of a re-run, change a team's draw position in consultation with the Marshall.
- Have the power to disqualify from the overall challenge any team whose members practice with or adjust any equipment without authority once the challenge has officially started. A disqualification is defined as any deliberate attempt to gain an advantage that is not already covered under the Waterway rules.
- Be responsible for the security of equipment during any breaks and at the conclusion of the challenge.
- Not allow the removal of any equipment from the track at the conclusion of an event, pending any protests.
- Advise track officials of any pending re-runs.
- Will advise the Starter / Marshalls and Officials when the track is ready to proceed with each new event.
- Seek approval of the nominated Challenge Panel member before requesting the Equipment Officer to adjust or replace any equipment.

JUDGES

Judges will:

- Be assigned to a position by the Referee Challenge Panel and will remain in that same position until the completion of that particular event.
- Be responsible for fair and accurate judging of all events that they are assigned to officiate at.
- Ensure team members do not exceed their permissible number when they place equipment in the appliance prior to the commencement of an event.
- Ensure equipment is set and placed as outlined in these General Conditions, Requirements and Specifications.
- On instruction from the Referee (and not until) break down or change any event set up.
- Not clarify with teams around placement of equipment and/or hose.
- Not discuss with teams any impending penalties.

STARTER / MARSHALLS

Starter / Marshalls will:

- As far as possible, ensure that teams compete in the order of the draw.
- Call a team three times and if there is no response, advise the Referee as the team may be disqualified from that event.
- Allow three minutes from the time a team is called to assemble their gear in the appliance until the start of the event.
- Before the start of each event, inspect each member of the team to ensure they are correctly dressed and record names of competing team members against a checklist provided by the Events Team.
- Assemble the team on the start line.
- Face the team when addressing them but be in front of and to one side of the team.
- Signal by whistle to the timekeepers to ensure they are ready for the start of the event.
- Bring the team properly to attention and then ask the Team Captain if he is satisfied with the gear.
- After the Marshall has addressed the team and the Team Captain has replied, the Marshall will call "set", and then start the event by means of some type of audible mechanism.
- Where a Team Captain intends to start under protest, the process is as follows. When the Team Captain is addressed on the start line by the Starter / Marshall, they are to reply using the words, "No Under Protest", at which stage the Starter / Marshall will notify the Referee who will address the Team Captain concerned. All members will remain at attention on the start line. The Referee will conclude the process using the words "Duly Noted" or address the issue, at which stage we will return to the normal procedure. (i.e., "set", "go")
- Re-address the team in the event of a starting malfunction. (See team requirements)
- Arrange for a team being granted a re-run, to run again when practicable with permission of the Referee.
- Use a long horn blast to recall a team when a malfunction has occurred. Team will reassemble at start mark and be readdressed.
- Check with the timekeepers after a malfunction has occurred.
- NOT readdress a team if a team breaks (false start) and a malfunction has not occurred. The team will still be in the hands of the Starter/Marshall. **N.B.** Where laser beams are used as an additional timing equipment starting measure, false starts will not be recalled, and the event will continue.
- Ensure all team members are FULLY DRESSED, including helmets, when they enter the track to place equipment in the appliance prior to the commencement of an event.

TIMEKEEPERS

The Chief Timekeepers will:

- Manage the timing equipment on the designated track.
- Record the team's name and completion time on each card.
- Check all stopwatches where used, record all times on the timecard and give an event time by averaging the times from each correct stopwatch.
 - o Discount any incorrect times (e.g., late to start or late to stop the stopwatch)
 - Discount any time that is 0.5 seconds below or above either of the other two correct stopwatches.
- Where electronic timing is used, record the event time on the card.
- Use a whistle to recall a team following a timing malfunction.

JUDICIAL COMMITTEE

The Judicial Committee will:

- Comprise of the following:
 - o Challenge Panel Leader (Will act as the Chair).
 - o Two other members of the Challenge Panel.
 - o One member nominated by the UFBA Management.
 - One nominated member of the Host Brigade.
 Note All of the above must be available for the duration of the event.
- Be appointed to hear protests.
- Assemble as soon as practicable to conduct an enquiry into any protest lodged by any team.
- Consider all evidence, including video film, and make a decision as quickly as possible. Such a This decision will be final, and no further discussion will be entered into.
- Have the power to disqualify from the overall challenge any team found using disrespectful language or behaviour during or between any event, or any team deliberately attempting to gain an advantage that is not already covered under these rules.
- Ensure that any member of the committee having a pecuniary interest in a team lodging a protest will retire from the hearing until after a decision has been made.
- Advise the Team Captain, Referee and Field Secretary of the outcome.

EQUIPMENT OFFICERS

Equipment Officers will:

- Be responsible for ensuring all equipment to be used meets specification, is correctly adjusted and maintained.
- Adjust any equipment only when requested by the Referee during the challenge under the approval of the nominated Challenge Panel member.
- Ensure that there is adequate fuel available for pumps for the duration of the challenge.
- Ensure the security of equipment during any breaks and at the conclusion of the challenge.
- Record time taken to draught by appliance pumps prior to the challenge.

•

FIELD SECRETARIES

Field Secretaries will:

- Manage the secretarial resources.
- Make a "protest form" available to any team on request.
- Ensure they receive all protests and a \$100.00 cash deposit within 20 minutes from the completion of the team's run as recorded on the timecard and notify Challenge Panel immediately.
- Maintain a protest register, including whether or not protest was won and pass on to the UFBA Events team at the end of the challenge.
- Call the Judicial Committee together as and when required.
- Return the deposit to the team if their protest is won.
- Retain the deposit for the charity chosen by the Challenge Panel if the protest is lost.
- Sight a medical clearance before reinstatement of any team member following sickness or accident where medical consultation was obtained and advise Challenge Panel.
- Prepare a full summary of results including trophies and awards ready for presentation.
- Receive, total and record timecards.
- Ensure an accurate record of the results is posted at frequent intervals during the challenge.

EQUIPMENT

EQUIPMENT GENERAL

- All equipment will conform with the current Fire and Emergency NZ standard and must be fit for purpose and be current in test date.
- As the challenge is conducted on grass, Penalty 2 on timecards, including throwing equipment, will be interpreted in a reasonable manner and will be applied at the discretion of the Referee.
- No equipment is to be carried in the mouth.
- Where forestry couplings are fitted with British Standard Pipe (BSP) thread, appropriate Canadian Quick Connect (QC) coupling adaptors will be fitted.
- For Events F9-F12, equipment is to be placed on the equipment line either touching or bridging it. Equipment and hoses must be parallel or perpendicular to the equipment line. The standpipe may be laying so that it is resting on a coupling. Bighted and coiled hoses may touch each other to assist with remaining upright on the equipment line, but all other items are to have separation from each other.

FAULTY EQUIPMENT

• Should the Referee's attention be drawn to any faulty equipment, then the Referee has the power to replace that equipment at their discretion and without protest or re-run from any previous team except the team drawing attention to the faulty equipment.

BRANCHES

- Controlled branches to be used on all events and placed in the equipment locker or attached to flaked hose, in the closed position. For events F9-F12 the branches will be placed on the equipment line and may be coupled to any flaked delivery, under normal flake rules.
- Nozzle tips to be 12mm ID, except events where monitor and forestry branches are used.
- All targets shall be struck with the delivery under the arm (including the hose reel branch).
- Leaving an unattended live branch (water showing) will result in Penalty 2 being applied.

BREECHINGS

• When a breeching is used it will be placed in the appliance locker with both valves in the closed position.

COLLECTOR HEAD

- Collector heads must be the twin head type.
- Where a collector head is fitted to the pump at the commencement of an event, the twin water inlets will sit on the horizontal plane.
- If a blank cap is available, this may be fitted to the collector head at the team captain's request.

EVENT CONDITIONS

- The placing of non-permanent markers on hose and the track is allowed.
- An uncompleted event will result in a disqualification for that event.

FLAKED HOSE

- Flaked hose is to be flaked neatly from side to side or front to back in the appliance flake tray with the exception of Event F9. This can vary depending on appliance type.
- No flake is to be tucked behind any other flake.
- All flaked hose in a locker will be coupled until it is required for use. The last flake in any length of hose may be shortened to allow the coupling to finish on the near side of the tray.
- Hoses must be flaked separately.
- If at the commencement of an event the branch is connected to a length of flaked hose, then it must be in the same orientation as the flaked hose. Branch may sit on top of the flaked hose.
- Any flaked hoses used in Events F9 & F10 must be the same size as the flake tray designed for the delivery locker of the appliance that is assigned to the Flat & Open Water Tracks and must be uncoupled.

HOSE CONDITIONS

- Any reference in this document to forestry hose indicates 41mm non-percolating forestry hose.
- The minimum length of all hose used at UFBA challenges will be 24 metres for instantaneous hose and 28 metres for forestry hose.
- Disabled hoses to have knot tied in male end before event completed. Knot to be considered tied when the visible metal of the coupling is clear of the loop. When forming a knot in a disabled hose, hands are to be clear of hose before target is broken. Knots in disabled lengths are not to incorporate any other hose. Penalty 2 applies for each infraction.
- Charging is defined as water entering the hose.
- Any hose work that is incorrectly completed (e.g., flaked hose, hose conditions, hose on bight, hose on the coil, and monitor setup) will incur Penalty 2.
- Hose and Equipment may be stored in the same locker, providing it is stored in separate
 compartments within that locker. In Events P13-P18, a nearside locker may be used for hose
 stowage. That locker will be designated by the referee prior to the event. Note: Breathing
 Apparatus Sets and Hose Reel lockers are not to be used at any time for storage of hose or
 equipment during Waterway Challenge events.

HOSE ON THE BIGHT

- Where hose is stowed on an appliance on the bight it must be stowed standing on the hose rack unless otherwise specified in event conditions.
- The female coupling must be on the outside of the coil.
- Hose must be clear of locker before bowling, otherwise Penalty 2 applies.
- Bight hose must be bowled in front of the body in an underarm fashion and released at waist level or below waist level. Penalty 2 will apply if this is not followed. (This is deemed as being 180 degrees through the members shoulders at the point of bowling)
- An attempt at bowling the hose must be made, otherwise Penalty 2 applies.
- The member receiving the male coupling for the purpose of coupling to the appliance must have both feet within the designated 3m area at the pump panel, otherwise Penalty 2 applies.

HOSE ON THE COIL

- Hose on the coil must be stowed standing on the hose rack of the appliance unless otherwise specified in event conditions.
- Hose on the coil is to be neatly rolled with the female coupling at the centre of the coil.
- When running coiled hose, it must be run off the front underside of the coil, and the hose must be run with both hands on the lugs while moving and run under the arm, otherwise Penalty 2 applies.
- The member receiving the male coupling for the purpose of coupling to the appliance must have both feet within the designated 3m area at the pump panel, otherwise Penalty 2 applies.
- All feeder coils must be taken to the hydrant area before being run out, otherwise Penalty 2 applies.
- No assistance to running out the hose can be given by another member "pulling" the hose off the coil. Penalty 2 will apply.

HOSE REEL

- Hose reel is to be wound up and stored under pressure.
- Hose reel valve may remain open throughout the run.
- The hose reel branch will be set to fit in the hose reel branch holder. The competitor will be expected to adjust the nozzle accordingly.

KEY AND BAR

- The key and bar will be placed in the standard fire appliance fittings, unlatched.
- Member taking key must take bar, otherwise Penalty 2 applies.
- Hydrant cover must be opened with bar of hydrant key, otherwise Penalty 2 applies. If the cover lands back in its original position, the bar must be reused to open it.
- The Key & Bar must be always left in the working position on the horn when left unattended, otherwise Penalty 2 applies, unless the Track Referee stipulates prior the event.

ORDERS

All orders must be given and in a clear and concise manner. Additional orders, orders out of
rotation and incorrect orders are not to be given. Orders must not overlap. Penalty 10
applies for each and every infraction.

PUMP CONDITIONS

- In the event of an air lock, the pump primer may be used to clear without penalty.
- If a pump is fitted with a relief valve, it will be set at 900 kpa.
- The throttle will be set on idle and all valves in the closed or off position. The blank cap is to be set by the judge to finger tight and the relief valve to be set as above.
- In all appliances, the pump is to remain in volume (parallel) mode where fitted, for all events.
- No valves or throttle to be operated prior to the start of an event by any team member. Failure to comply may result in a disqualification for that event.
- Couplings broken out of standpipe and pump while under pressure must be retained.
- The suction blank cap is to be set by the Pump Judge. Competitors will be entitled to one
- The eye of the pump on the appliance will be filled prior to the commencement of the run.

PUMP OPERATOR DUTIES

- The pump operator's duties will include opening the delivery valves, tank to pump valve
 where required and operating the primer and the throttle. They may assist in the
 connection of hoses, and removal of hoses from lockers.
- Deliveries may be run from any outlet.
- Primer must be off before any target is struck, otherwise Penalty 2 applies.
- Where there is an electronic throttle fitted, the idle button can be used. If the pump does not decelerate to idle, Penalty 2 applies.
- Pump operator must not leave the designated area 3m from the centre of the pump panel in any direction whilst delivery and/or hose reel valves are open, and/or pump is not at idle.
- Appliance pump is not to be accelerated until water reaches inlet or tank to pump valve is open.
- Primer is not to be used until the strainer is in the water and all suction couplings are connected including to the appliance, or the tank to pump valve is open.
- Once the event has finished, close only the throttle and deliveries. The Pump Judge will then take over.

STANDPIPE

- The standpipe will be of the integral controlled valve style and placed in the standard fire appliance fittings, unlatched.
- Any member can handle the standpipe at any time, unless otherwise stated in the run conditions. The definition of a loose standpipe is half a turn (180 degrees). Penalty 7 applies.
- Couplings broken out of standpipe and pump while under pressure must be held. Penalty 2 applies.
- The setting of the standpipe prior to the event is to be done by any team member but cannot be shipped after the 30 second time call by the Starter / Marshall.
- Hydrant to be flushed through the standpipe to allow water to hit ground before connecting any feeder(s) or deliveries, otherwise Penalty 7 applies.

SUCTION SPANNERS

- Suction spanners will be placed in the appliance locker.
- Suction spanner use is optional.

SUCTION STRAINER

• Suction hose will be placed in the normally stowed position on the appliance with strainer attached and tight.

SUCTION DAM

- A suitable dam will be provided.
- An official will hold the suction lengths at the same position that it is left in by the competitor for two person events only.
- The edge of the dam shall line up with the offside of the appliance as per event diagrams. The suction couplings are to be outside the dam to a maximum of 400mm.

TRACK CONDITIONS

CENTRE LINE OF TRACK

• The centre line of the track will be through the centre of the hydrant.

FIRE APPLIANCE

- Events that require a Fire Appliance will have an appliance positioned 20 metres from the hydrant to the centre of the pump panel and two metres to the right of the centre line. The appliance will be positioned so the pump panel is facing the centre line of the track.
- Locker doors in use on appliance will be open prior to start of event. Equipment and hose lockers will be stipulated by the Referee.
- Flaked hose may only be stowed where flake trays are located. Other forms of hose or equipment may not be stored on flake trays.
- Appliance engine will be started, and pump engaged prior to start of event.
- Designated Pump Operator Area to be marked by an arc with a 3m radius from the centre of the pump panel.

HYDRANTS

- Screw down hydrants to meet FENZ standards will be set to clear the lid with a false spindle fitted and the key fitted behind the standpipe.
- The hydrant cap will be fitted with a chain, which will be attached to the hydrant.
- There will be a minimum clearance of 100 mm underground between the hydrant and the hydrant box on all sides to allow the cap to fall.
- The specification of the hydrant box will be to FENZ standard, with a wooden cover painted yellow and a slot 30 mm x 20 mm in each end.

TARGETS

- Steel targets, painted bright yellow, will be hinged at the base with a striking area measuring 350 mm x 250 mm.
- Standards will be made to a height to ensure the top of the target when erect is approximately three metres high.
- Target for Extinguisher event will be at a lower level, one metre in height.
- All targets must be knocked flat to be deemed completely broken.
- Before water is shown an assistant branch operator to be within one metre of branch operator when delivery is a 70mm hose.

WATER PRESSURE

- Suitable water pressure and flow rates will be available to allow correct operation of all equipment.
- Mains will be charged to a maximum of 600 kpa flowing, as measured with one 70mm delivery and 12mm branch.

RESULTS

ALLOCATION OF POINTS

- In the event of an overall winner dead heat, the team with the lowest aggregate time will be the winner.
- In the event of a tie for place(s), those applicable places points will be combined and divided by the number of teams that have tied. E.g., If three teams tie for 1st 1st, 2nd and 3rd would be added together giving a total of 55 then divided by three (18.33).
- Aggregate points per event will be allocated as follows:

PLACE	POINTS
1 st	21
2 nd	18
3 rd	16
4 th	14
5 th	12
6 th	10
7 th	8
8 th	7
9 th	6
10 th	5
11 th	4
12 th	3
13 th	2
14 th +	1
Disqualification	Nil

EVENT A1 - DRAW FOR PLACES (4 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. One flake length of 70mm hose to bestowed by the team in a flake locker as per flaked hose specifications. Two lengths of coiled 70mm hose and one length of coiled 45mm hose to bestowed by the team in the hose locker as per equipment specifications. One controlled branch to bestowed by the team in an equipment locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- The teams will gather at the Start Line, directly in front of the Appliance.
- Once the Starter/Marshall has gone through the Start Procedure to the point that the Team Captain is happy with the gear
- Then the draw will take place for allotted duties Team Members must call the number out loud and show the number to the Referee
- For teams with additional members The team member that draws "0" to do as above, and immediately back away with no further talking
- They will then be told to "Change around if required" (Still at attention)
- Then Set & Start as per normal procedure
- All orders must not overlap, and the order given by the pump operator must be complete with both hands clear prior to any valves being touched or operated.
- Refer to Appendix 1 (Page 56) for Referees Officiating Notes

No 1 takes a delivery hose, couples into delivery outlet, establishes delivery to first target, couples branch, then gives order for 'water on delivery'. After first target is broken, calls for 'water off delivery', then breaks out branch, becomes branch operator on extension, couples branch then gives order for 'water on delivery', hits second target. After burst length is replaced, hits second target again ending event.

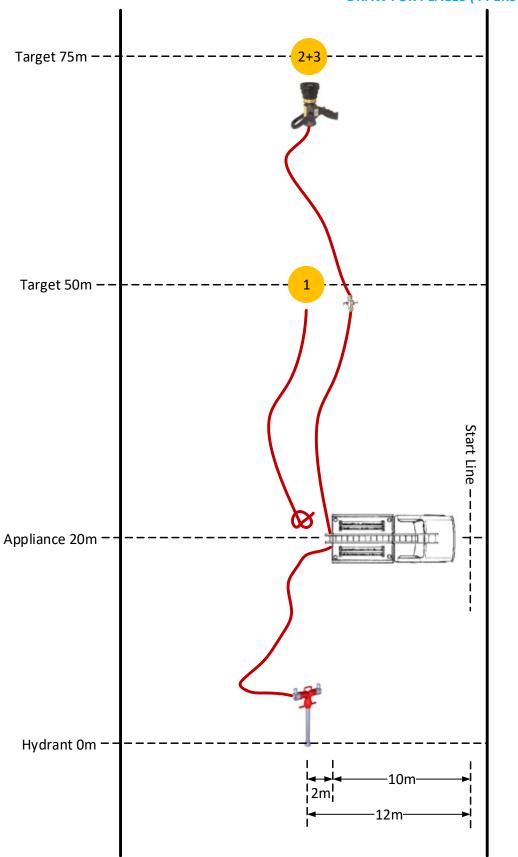
No 2 takes a hose and couples to standpipe (once flushed) and pump. Orders 'water on feeder' after feeder is coupled to pump. May open feeder inlet valve if fitted. Becomes assistant branch operator at first target. After first target is broken, takes delivery from **No 4** and couples to establish extension. Returns to pump and after second target is broken, takes replacement hose and gives male coupling to pump operator, replaces burst length and connects couplings, then orders 'water on delivery'.

No 3 takes standpipe, repeats order for 'water on feeder' from No 2 at any time, sinks standpipe fully down, goes to pump, repeats order for 'water on delivery', may open feeder inlet valve if fitted, then opens delivery valve. Repeats order 'water off delivery' from No 1, then closes delivery valve. Repeats order 'water on delivery' from No 4, then opens delivery valve to extension, repeats order 'water off delivery' from No 4, then closes delivery valve. Replaces delivery, ties knot in disabled length before target is broken, repeats order 'water on delivery' from No 2, then opens delivery valve.

No 4 takes key and bar, repeats order for 'water on feeder' from **No 3** at any time (but must be completed before **No 2** connects feeder to standpipe), clears hydrant, flushes standpipe, turns water on to feeder. Returns to appliance and once first target is broken, takes extension hose and extends delivery. Relays 'water on delivery' from **No 1** to **No 3**. Calls for 'water off delivery' once second target is broken. Breaks out middle coupling ready to replace length.



DRAW FOR PLACES (4 PERSON)



EVENT A2 - DRAW FOR PLACES (2 person)

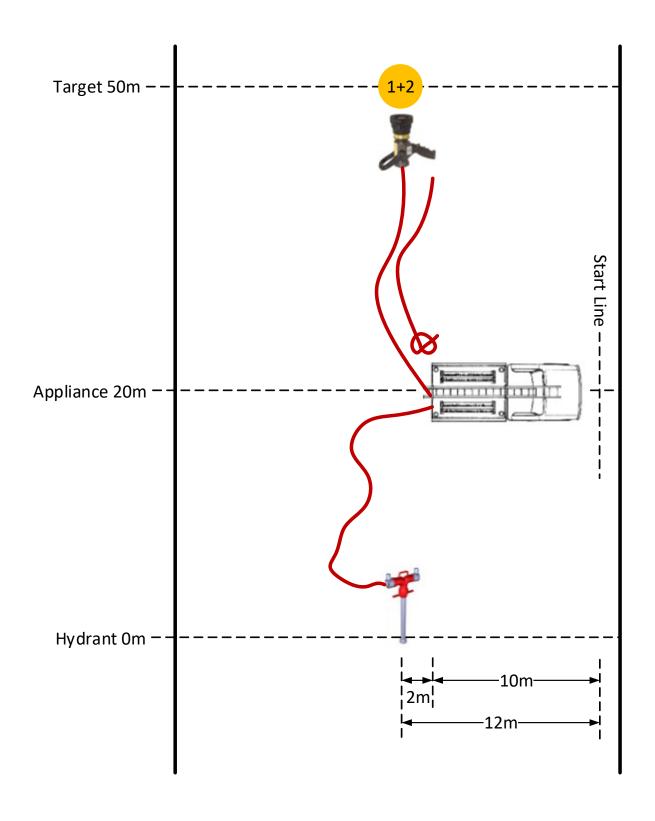
- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. One flaked length of 70 mm hose to be stowed in a flake locker. Two lengths of coiled 45mm hose to bestowed by the team in the hose locker as per equipment specifications. One controlled branch to bestowed by the team in an equipment locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- The teams will gather at the Start Line, directly in front of the Appliance.
- Once the Starter/Marshall has gone through the Start Procedure to the point that the Team Captain is happy with the gear
- Then the draw will take place for allotted duties Team Members must call the number out loud and show the number to the Referee
- For teams with additional members The team member that draws "0" to do as above, and immediately back away with no further talking
- They will then be told to "Change around if required" (Still at attention)
- Then Set & Start as per normal procedure
- All orders must not overlap, and the order given by the pump operator must be complete with both hands clear prior to any valves being touched or operated.
- Refer to Appendix 1 (Page 56) for Referees Officiating Notes

No 1 takes feeder and couples to pump. Orders 'water on feeder' after feeder is coupled to pump. May open feeder inlet valve if fitted, takes feeder to standpipe. Runs first delivery from pump, couples branch and then gives order 'water on delivery' before striking first target. After first target is struck, orders 'water off delivery', breaks out branch, returns to pump and becomes pump operator. Repeats order 'water on delivery' before opening replacement delivery to strike second target.

No 2 takes standpipe, key and bar, repeats order 'water on feeder' any time after **No 1** (but must be completed before feeder is connected to the standpipe), clears hydrant, sinks standpipe fully down, flushes standpipe, and becomes pump operator. Repeats order 'water on delivery' then opens delivery to first target. After first target is struck, repeats order 'water off delivery', closes delivery, breaks out delivery from pump and ties knot in it. Takes replacement delivery and runs out to second target, couples branch before giving order 'water on delivery'. Strikes second target, ending event.



DRAW FOR PLACES (2 PERSON)

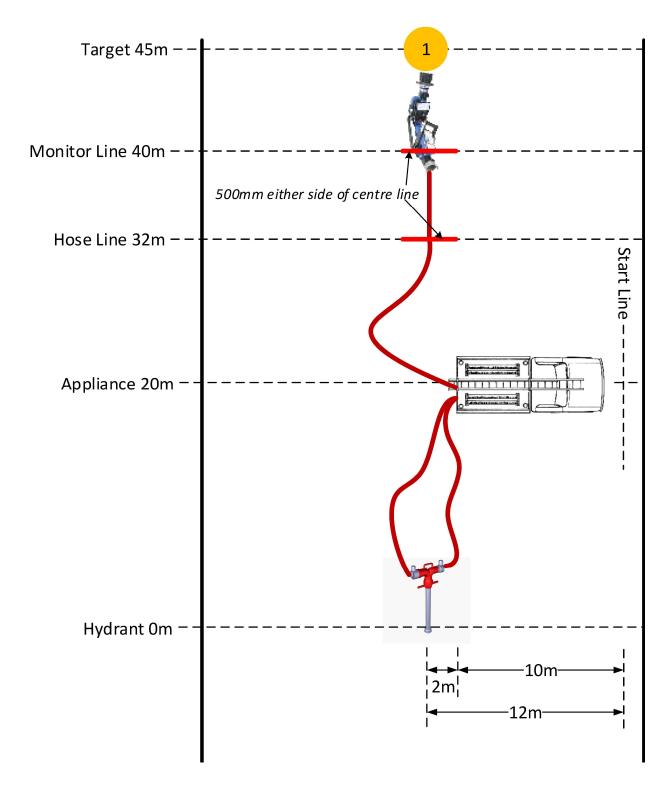


EVENT A3- GROUND MONITOR (4 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. Three lengths of 70mm hose to bestowed by the team in the format the team selects.
- Monitor to be placed in an equipment locker, set per team preference in the closed position.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- Twin feeders and delivery will be established via the appliance.
- Monitor to be established and placed correctly with the legs in the working position and operated to break target ending event.
- Any part of the monitor must be on or past the 40m Monitor Line before opening Monitor control valve otherwise penalty 2 applies.
- The Monitor delivery must cross the 32m Hose Line and continue in a straight direction to the Monitor prior to the target being struck otherwise penalty 2 applies.
- All parts of the delivery between the 32m and 40m lines must remain within 500m of the centre line as marked (measured to the inside of the delivery) otherwise Penalty 2 will apply.
- The standpipe control valve shall be fully open and hands clear prior to target being struck otherwise penalty 2 applies.
- Water is to remain flowing to the monitor post the event until instructed by the official to allow for confirming the Monitor delivery otherwise Penalty 2 applies.



GROUND MONITOR (4 PERSON)

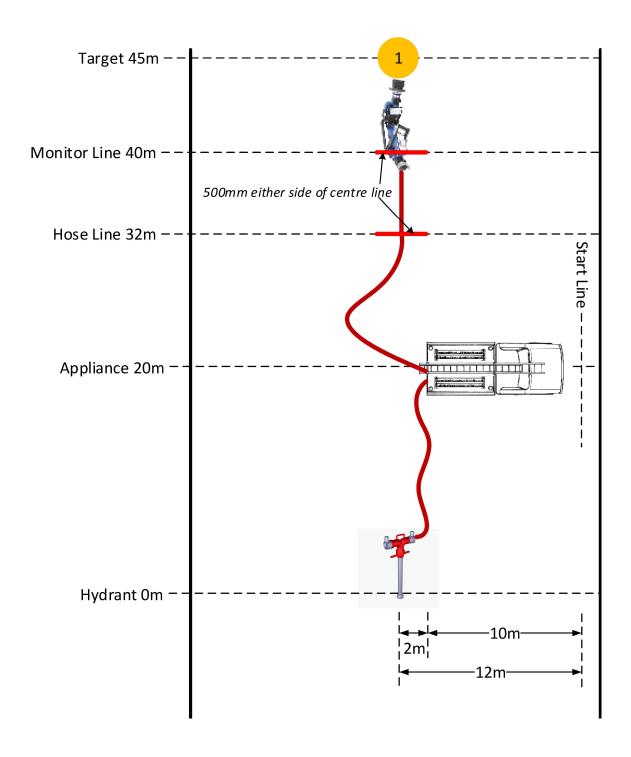


EVENT A4 - GROUND MONITOR (2 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. Two lengths of 70mm hose to bestowed by the team in the format the team selects.
- Monitor to be placed correctly with the legs in the working position on track by team. Any part of the monitor must be placed on or past the 40m Monitor Line during the appliance setup period, set per team preference in the closed position. The monitor must remain on or past the 40m Monitor throughout the duration of the event otherwise Penalty 2 will apply.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- Feeder and delivery will be established via the appliance.
- The Monitor delivery must cross the 32m Hose Line and continue in a straight direction to the Monitor prior to the target being struck otherwise Penalty 2 applies.
- All parts of the delivery between the 32m and 40m lines must remain within 500m of the centre line as marked (measured to the inside of the delivery) otherwise Penalty 2 will apply.
- Water is to remain flowing to the monitor post the event until instructed by the official to allow for confirming the Monitor delivery otherwise Penalty 2 applies.



GROUND MONITOR (2 PERSON)

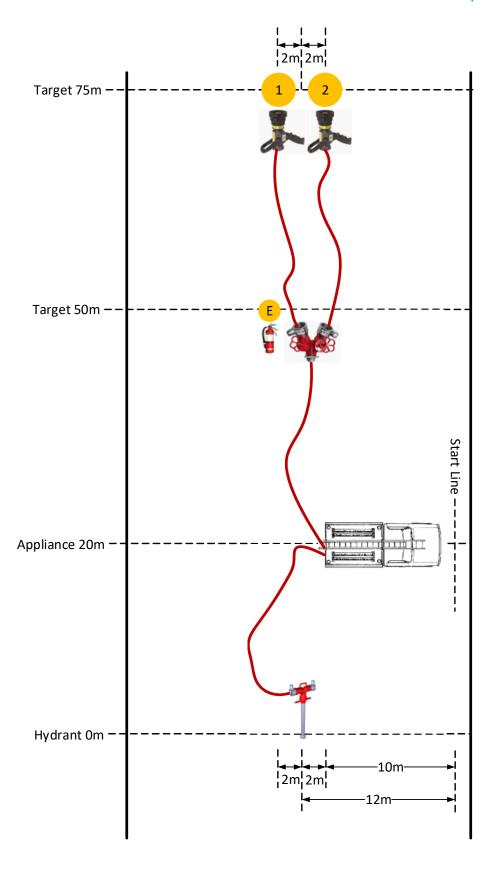


EVENT A5 - EXTINGUISHER AND DELIVERY (4 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. One flake length of 70mm hose to bestowed by the team in a flake locker as per flaked hose specifications. One length of coiled 70mm hose and two lengths of bight 45mm hose to bestowed by the team in the hose locker as per equipment specifications. Two controlled branches, one full portable water or foam type extinguisher and one controlled dividing breeching (with both valves closed) to bestowed by the team in an equipment locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- One team member must strike the extinguisher target using the nozzle of the extinguisher. Extinguisher must be left standing upright prior to leaving the target after target has been broken. The member taking the extinguisher may not handle, or assist with, any additional hose or equipment until extinguisher duties are complete.
- Extinguisher target must be the first target struck. First hose target must be struck before showing water from right hand delivery, with second hose target then struck ending event.



EXTINGUISHER AND DELIVERY (4 PERSON)

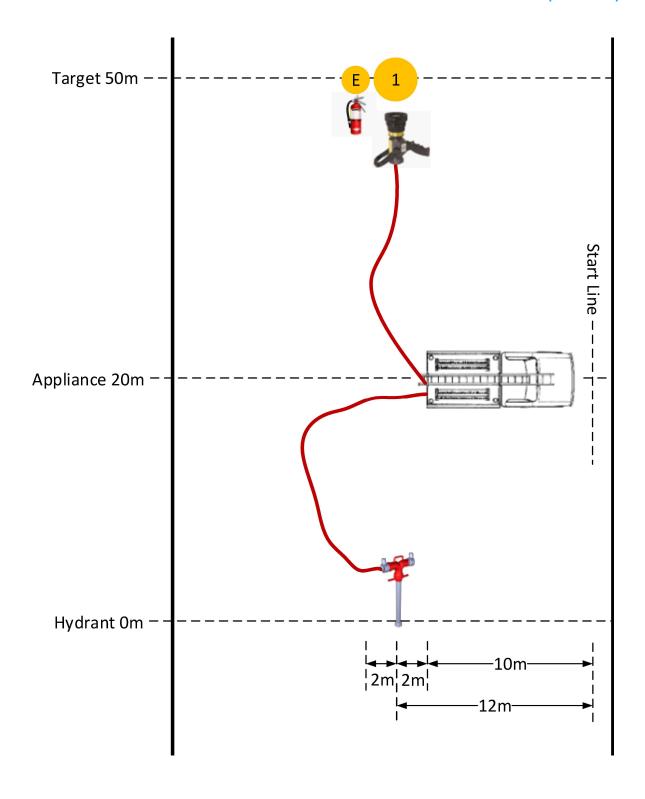


EVENT A6 - EXTINGUISHER AND DELIVERY (2 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. One flake length of 70mm hose to bestowed by the team in a flake locker as per flaked hose specifications. One length of bight 45mm hose to bestowed by the team in the hose locker as per equipment specifications. One controlled branch and one full portable water or foam type extinguisher to bestowed by the team in an equipment locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- One team member must strike the extinguisher target using the nozzle of the extinguisher. Extinguisher must be left standing upright prior to leaving the target after target has been broken. Extinguisher target must be the first target struck.
- Feeder and delivery will be established via the appliance and the second (delivery) target struck, ending the event.



EXTINGUISHER AND DELIVERY (2 PERSON)

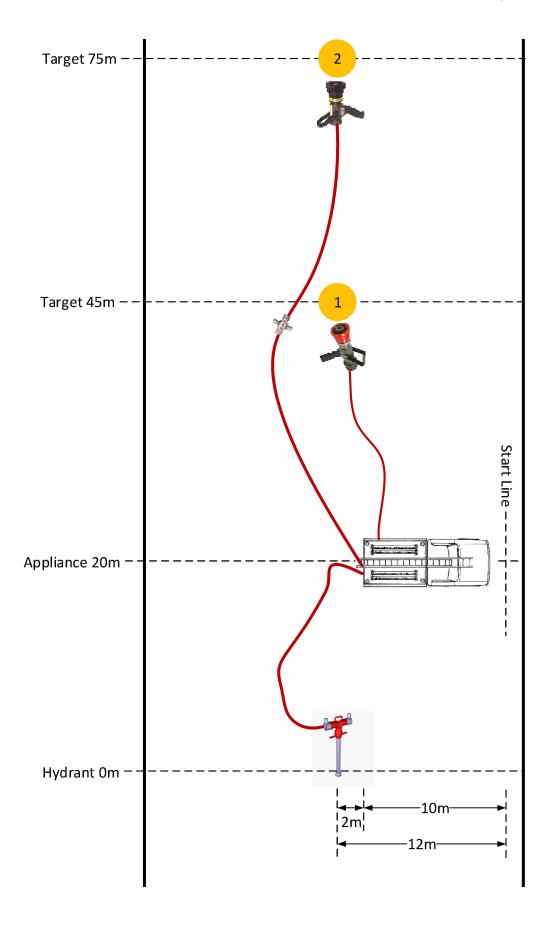


EVENT A7 - HOSE REEL AND DELIVERY (4 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. Two lengths of 70mm hose, one length of 45mm hose and one controlled branch to bestowed by the team in the format the team selects.
- The pump operator to be within the 3-metre designated area whenever delivery and/or hose reel valves are open and/or pump is not at idle.
- The tank to pump valve (if used) must be closed immediately after the hose reel target has been struck.
- Team to commence the event from the start line to the front of the appliance.
- One team member must strike the hose reel target.
- Feeder and delivery established via the appliance and the second (delivery) target struck, ending the event.
- Hose reel target must be the first target struck.
- Hose reel valve may remain open throughout the event.



HOSE REEL AND DELIVERY (4 PERSON)

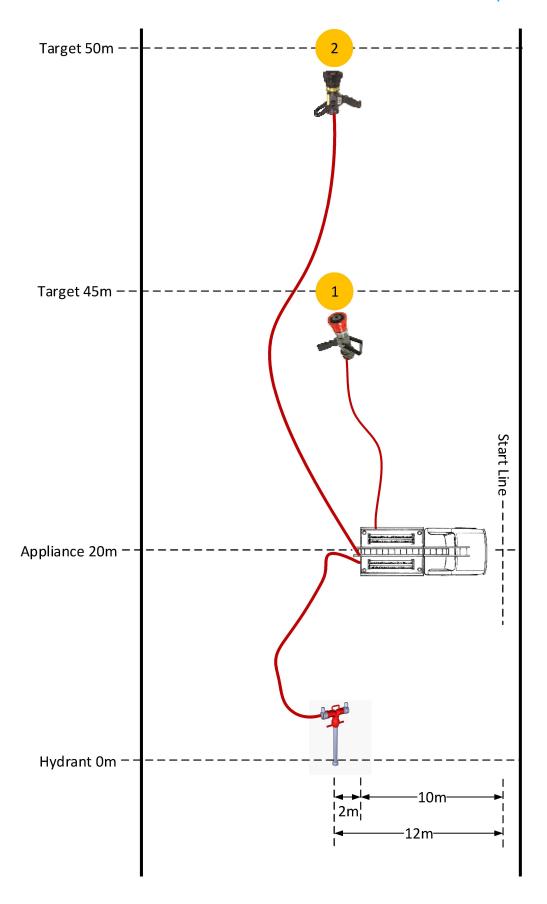


EVENT A8 - HOSE REEL AND DELIVERY (2 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. One length of 70mm hose, one length of 45mm hose and one controlled branch to bestowed by the team in the format the team selects.
- The pump operator to be within the 3-metre designated area whenever delivery and/or hose reel valves are open and/or pump is not at idle.
- The tank to pump valve (if used) must be closed immediately after the hose reel target has been struck.
- Team to commence the event from the start line to the front of the appliance.
- One team member must strike the hose reel target.
- Feeder and delivery established via the appliance and the second (delivery) target struck, ending the event.
- Hose reel target must be the first target struck.
- Hose reel valve may remain open throughout the event.



HOSE REEL AND DELIVERY (2 PERSON)



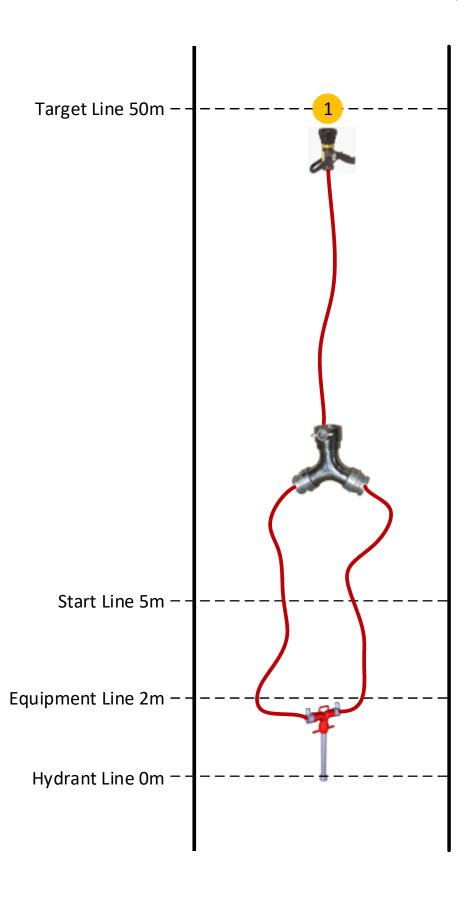
EVENT F9 - HYDRANT WITH HOSE (4 person)

- A standpipe with key and bar, three lengths of 70mm hose in the format the team selects, a collecting breeching and a controlled branch will be stowed by the team on the equipment line.
- Members will couple two 70mm hoses to the standpipe and the breeching, with a 70mm delivery being coupled from the breeching to the branch before striking target ending event.



EVENT F9

HYDRANT WITH HOSE (4 PERSON)



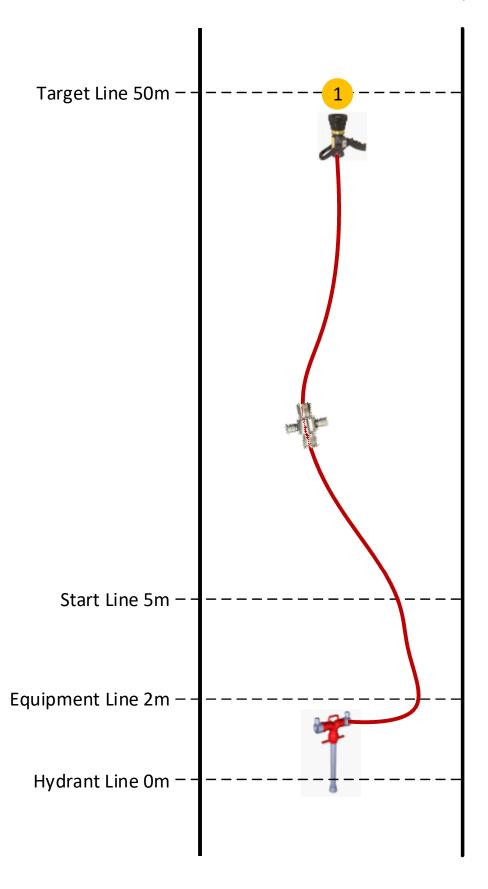
EVENT F10 - HYDRANT WITH HOSE (2 person)

- A standpipe with key and bar, one bight length of 70mm hose, one bight-length of 45mm hose and a controlled branch will be stowed by the team on the equipment line.
- Members will bowl hoses, connect to standpipe, and couple hoses together before striking target ending event.



EVENT F10

HYDRANT WITH HOSE (2 PERSON)



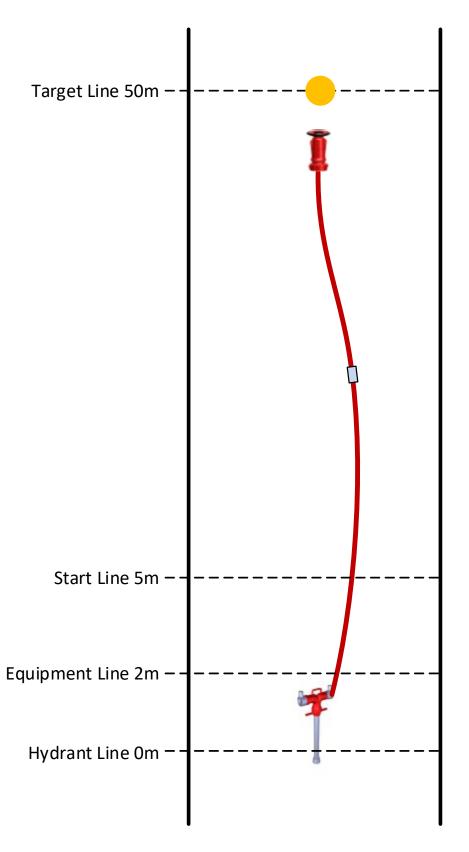
EVENT F11 - HYDRANT WITH FORESTRY HOSE (4 person)

- A standpipe with key and bar, two lengths of forestry bight hose, one pre-coupled with a forestry to instantaneous adaptor, and a forestry branch will be stowed by the team on the Equipment Line.
- Team will bowl hoses, connect to standpipe, branch and couple hoses together before striking target ending the event.



EVENT F11

HYDRANT WITH FORESTRY HOSE (4 PERSON)



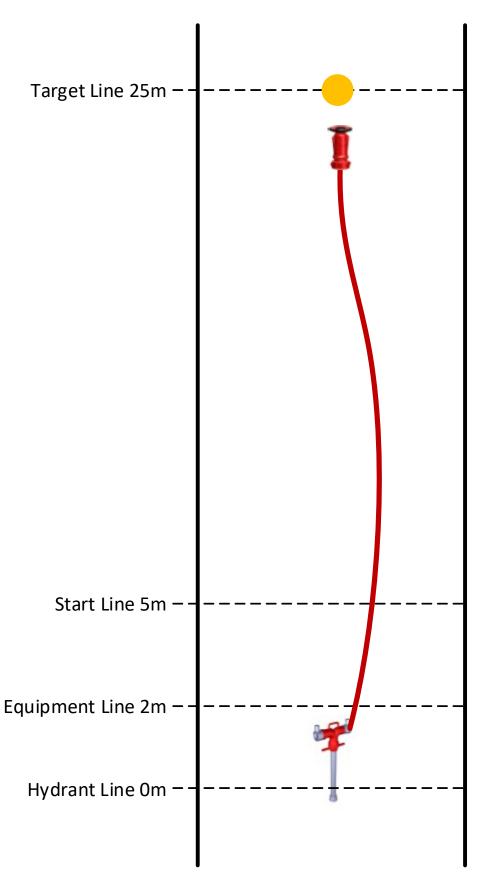
EVENT F12 - HYDRANT WITH FORESTRY HOSE (2 person)

- A standpipe with key and bar, one length of forestry bight hose pre-coupled with a forestry
 to instantaneous adaptor, and a forestry branch will be stowed by the team on the
 Equipment Line.
- Team bowls bight hose, connects to standpipe and branch and proceeds to strike target ending event.



EVENT F12

HYDRANT WITH FORESTRY HOSE (2 PERSON)

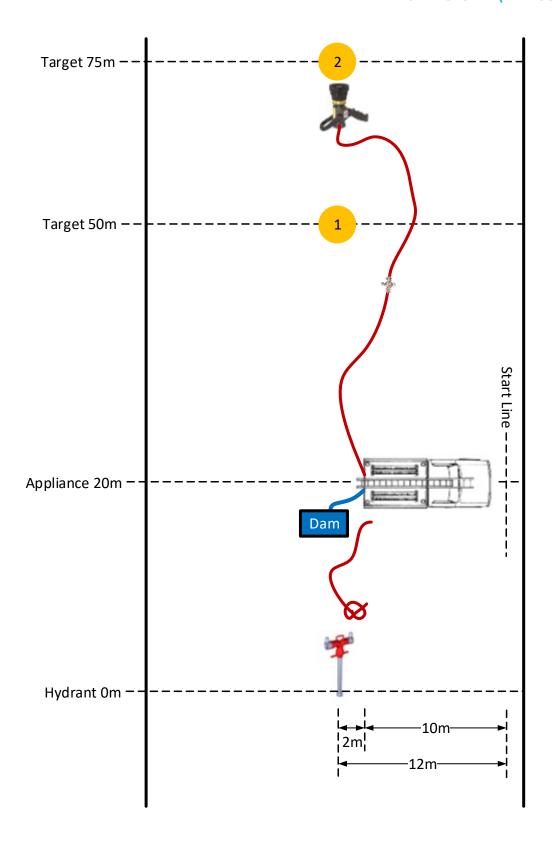


EVENT P13 - CHANGEOVER (4 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. Two bight lengths of 70mm hose and one coiled length of 70mm hose to bestowed by the team in the hose locker as per equipment specifications. One controlled branch and two suction spanners to bestowed by the team in an equipment locker. Two lengths of suction, one length with strainer pre-attached, to be stowed by the team in the suction locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- First target is to be struck by means of hydrant water via the appliance.
- Once the first target is struck, the appliance rev's (if used) must be returned to idle immediately, otherwise Penalty 5 will apply.
- Standpipe to be shut down and feeder disconnected. Knot to be tied in disabled feeder.
- Second target to be struck using open water ending the event.
- Assistant branch operator to be within one metre of branch operator when both targets are struck.
- No equipment for extension delivery, including suction to be handled until first target struck. Penalty 4 will apply.



CHANGEOVER (4 PERSON)

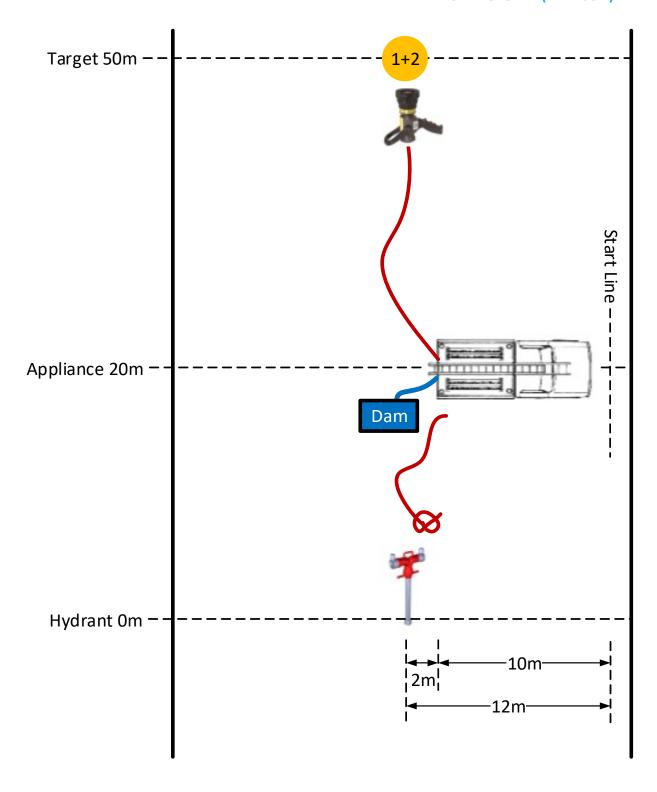


EVENT P14 - CHANGEOVER (2 person)

- An appliance with standpipe, key and bar will be positioned on the track as per the track specifications. One bight lengths of 70mm hose and one bight length of 45mm hose to bestowed by the team in the hose locker as per equipment specifications. One controlled branch and two suction spanners to bestowed by the team in an equipment locker. Two lengths of suction, one length with strainer pre-attached, to be stowed by the team in the suction locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- First target is to be struck by means of hydrant water via the appliance.
- Once the first target is struck, the appliance rev's (if used) must be returned to idle immediately, otherwise Penalty 5 will apply.
- Branch is to be broken out after target 1 is struck.
- Standpipe to be shut down and feeder disconnected. Knot to be tied in disabled feeder.
- Suction not to be handled until first target struck. Penalty 4 will apply.
- Second target shall be struck using open water ending run.



CHANGEOVER (2 PERSON)

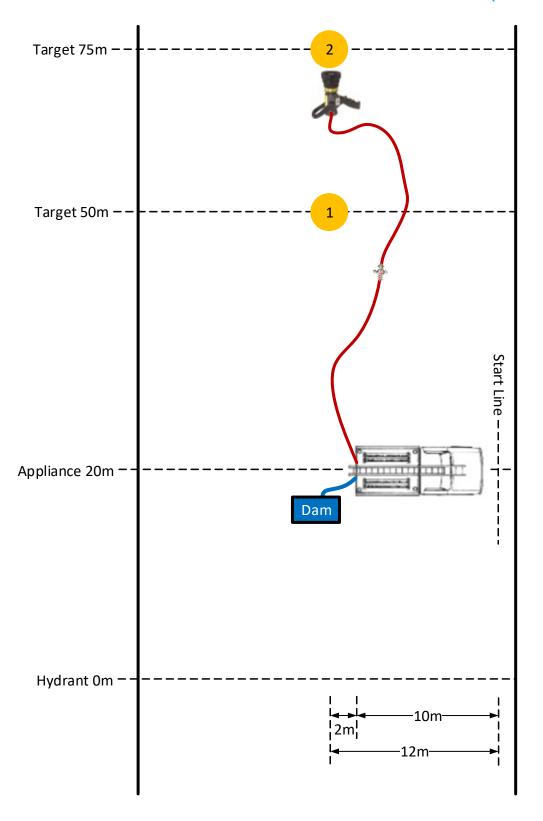


EVENT P15 - STRAIGHT SUCTION (4 person)

- An appliance will be positioned on the track as per the track specifications. One bight length of 70mm hose and one coiled length of 70mm hose to bestowed by the team in the hose locker as per equipment specifications. One controlled branch and two suction spanners to bestowed by the team in an equipment locker. Two lengths of suction, one length with strainer pre-attached, to be stowed by the team in the suction locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- Second length of 70mm hose is not to be handled until first target is struck. Penalty 4 will apply.
- Second target to be struck using open water ending the event.



STRAIGHT SUCTION (4 PERSON)

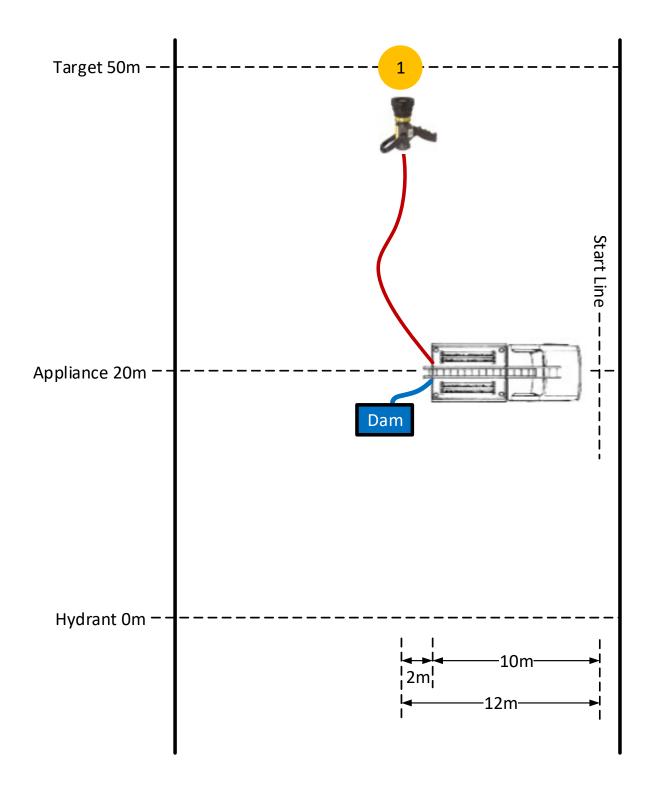


EVENT P16 - STRAIGHT SUCTION (2 person)

- An appliance will be positioned on the track as per the track specifications. One coiled length of 45mm hose to bestowed by the team in the hose locker as per equipment specifications. One controlled branch and two suction spanners to bestowed by the team in an equipment locker. Two lengths of suction, one length with strainer pre-attached, to be stowed by the team in the suction locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- Target to be struck ending the event.



STRAIGHT SUCTION (2 PERSON)

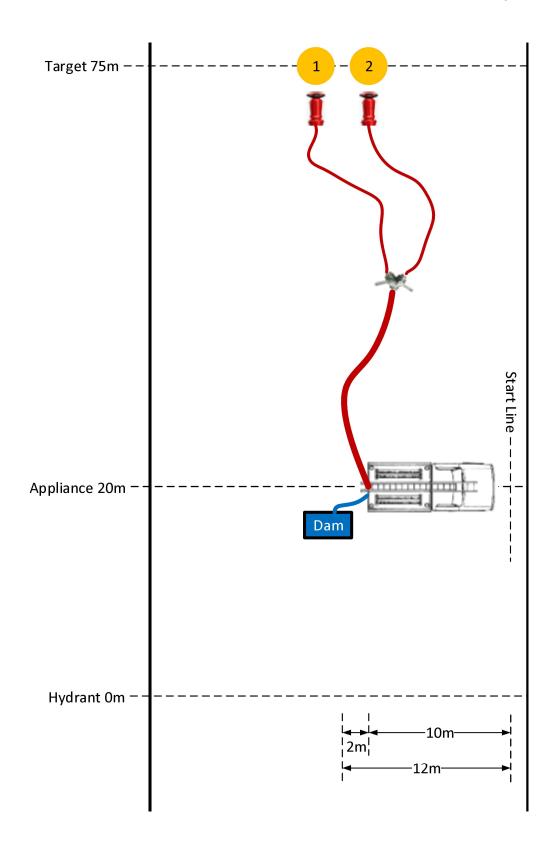


EVENT P17 - SUCTION WITH FORESTRY HOSE (4 person)

- An appliance will be positioned on the track as per the track specifications. One length of 70mm hose in the format that the team selects and two bight lengths of forestry hose to bestowed by the team in a hose locker as per equipment specifications. One forestry controlled dividing breeching with instantaneous to forestry adaptor pre-coupled, two forestry branches and two suction spanners to bestowed by the team in an equipment locker. Two lengths of suction, one length with strainer pre-attached, to be stowed by the team in the suction locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- Targets to be struck in the order as prescribed by event diagram.



SUCTION WITH FORESTRY HOSE (4 PERSON)

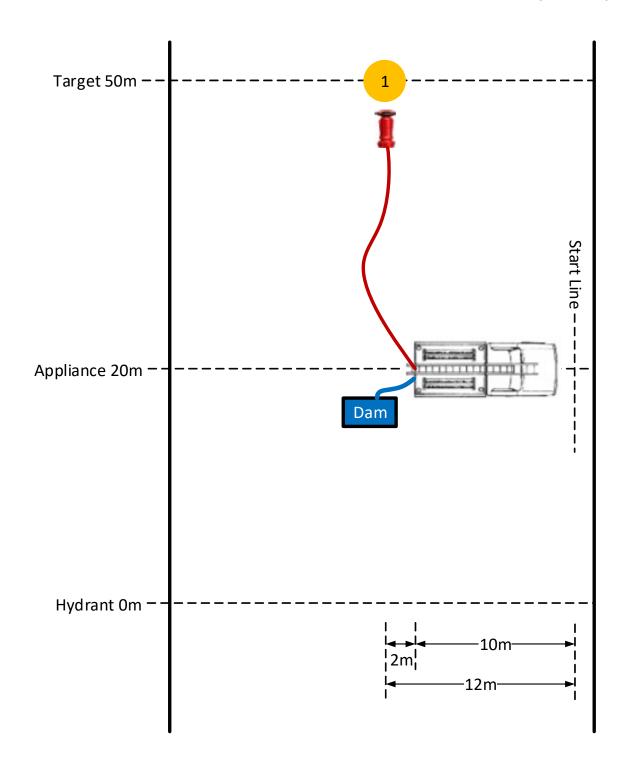


EVENT P18 - SUCTION WITH FORESTRY HOSE (2 person)

- An appliance will be positioned on the track as per the track specifications. One bight length of forestry hose with instantaneous to forestry adaptor pre-coupled to bestowed by the team in the hose locker as per equipment specifications. One forestry branch and two suction spanners to bestowed by the team in an equipment locker. Two lengths of suction, one length with strainer pre-attached, to be stowed by the team in the suction locker.
- The pump operator to be within the 3-metre designated area whenever delivery valves are open and/or pump is not at idle.
- The tank to pump valve must remain closed during the event.
- Team to commence the event from the start line to the front of the appliance.
- Target to be struck using open water via the appliance ending the event.



SUCTION WITH FORESTRY HOSE (2 PERSON)



EVENT IP - INTER-PROVINCIAL CHALLENGE (4 person)

- This event relates only to a National UFBA Waterway Challenge.
- This event is based on Event A2 F10 (with the addition of a replacement 1st length). It will use the same track layout. The two teams will may compete side by side. Orders are not required.
- Teams are to consist of 4 members, made up of at least 2 brigades from within a Provincial Association (unless otherwise approved by the National Challenge Panel).
- The event will be run either knock-out or round robin style. This will be advised on the day by the National Challenge Panel.
- A standpipe with key and bar, two lengths of 70mm hose and one 45mm hose in the format the team selects, and a controlled branch will be stowed by the team on the equipment line.
- At any stage the 1st Length 70mm hose will be replaced, and the disabled length must incorporate a knot.
- An appliance with standpipe, key and bar will be positioned on the track as per the track layout specifications. Three lengths of 70mm hose and one length of 45mm hose to bestowed by the team in the hose locker or a flake locker as appropriate and as per equipment specifications. One controlled branch to bestowed by the team in an equipment locker. All hoses may be coiled, flaked or on the bight at the choice of the team.
- Tank to pump valve must not be opened at any time during the event.



INTER-PROVINCIAL WATERWAY CHALLENGE (4 PERSON)

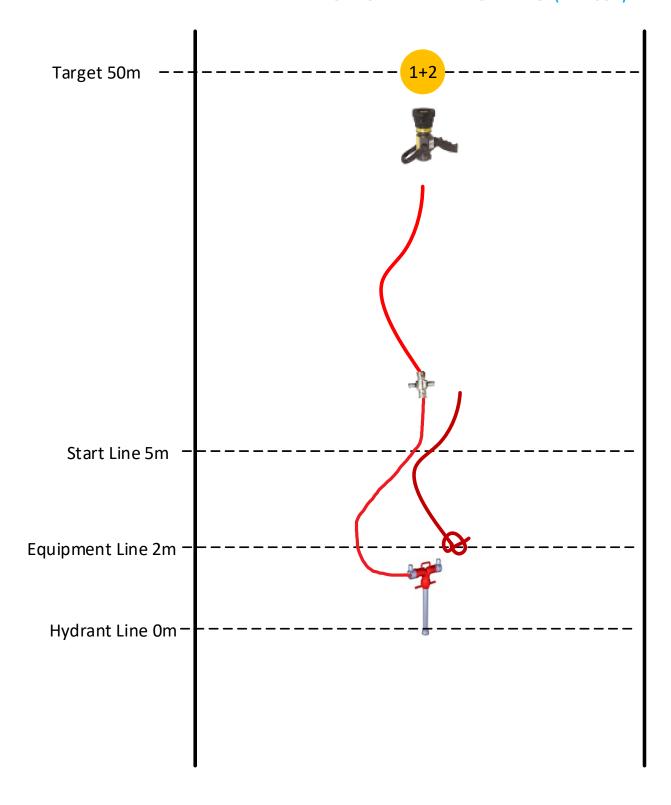


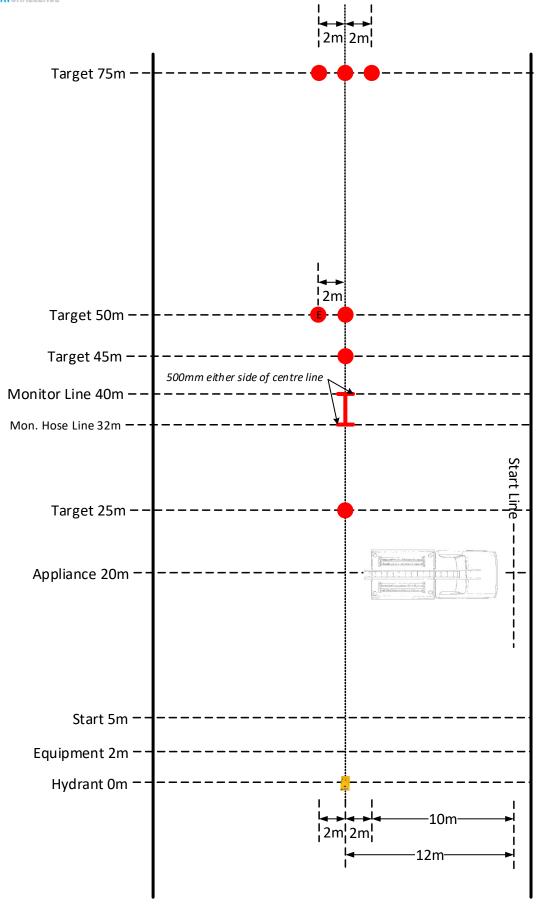
TABLE OF PENALTIES

N.B. Any penalty can be applied to any event by the Referee if required.

No	Description	Seconds	
1	In the case of any competitor using disrespectful language or any deliberate attempt to gain an advantage that is not already covered under the rules.	Disqualification from that Event	
2	All work to be gone through in a proper working manner e.g. not tying correctly stipulated knots in disabled lengths, incorrect hose work. No gear to be handled in a way likely to damage it or likely to cause injury to any person. This includes throwing equipment and not retaining equipment under pressure.	10	
3	Pump operator leaving designated area 3m from centre of pump panel in any direction when delivery and/or hose reel valves are open, or pump is not at idle. Defined as both feet within 3m circle.	30	
4	Team not carrying out the event as described in the general conditions and event description e.g., striking targets in wrong order, gear handled early. Where there are instances of multiple breaches of Penalty 4, then all infringements following the original, will be issued at 10 Sec each.	30 original breach, 10 per additional breach	
5	Using primer or accelerator before strainer is in the water and all suction couplings connected. Accelerating appliance pump before pump gauge indicates pressure, water has reached inlet, or tank valve open.	10 per breach	
6	Failure to close tank to pump valve as prescribed, or opening tank to pump valve at any time during an event in breach of the event description.	10 per breach	
7	Not flushing hydrant to allow water to hit ground before connecting feeder(s) or deliveries. Failure to fully tighten standpipe, or loose standpipe at end of the event.	10	
8	No assistant branch person when water is shown, and target struck (4 person events)	10 per breach	
9	Charging hose before clear of locker.	10	
10	Not giving clear and concise orders. Missing orders, overlapping orders, additional orders, out of rotation orders and incorrect orders.	5 per breach (Any more than 6 breaches will result in a total penalty of 60 seconds for penalty 10)	

TRACK SETUP GUIDE





Appendix for Event's A1 & A2 – Draw for Places (Referees Officiating Notes)

In	fringements	Penalty #	Secs		
•	Orders 'Water	on Feeder' not completed prior to flush	4	30	
	o 4-Person	Feeders #2, #3 & #4			
	o 2-Person	Both #1 & #2			
•	Branch not plug	gged prior giving the order 'Water on Delivery'	4	30	
	o 4-Person	# 1			
	o 2-Person	Both #1 & #2			
•	still in the moti	ump Panel Delivery Valve whilst the competitor is on of giving the orders 'Water on Delivery' or 'Water off Deliv	10 very'.	5	
	o 4-Person	#3			
	o 2-Person	Both #1 & #2			
•	Handling the Pump Panel Delivery Valve without the team or competitor giving the appropriate orders 'Water on Delivery' or 'Water off Delivery', combined with the timing of this action not complying with the event sequence or run description.				
	o 4-Person	#3 giving water prior #1 plugging and ordering (old style ch	nasing hose)		
	o 2-Person	Both #1 & #2 same as mentioned for above 4-Person #3			
	❖ Note 1	Both teams not waiting for any orders to shut off water earl advantage.	y to gain an		
•	Handling equip	ment early prior appropriate timing – traditionally hoses	4	30	
	o 4-Person	Deliveries #2 & #4			
	o 2-Person	2 nd Delivery			
•	Completing oth	er allotted duties not assigned to the role	4	30	
	4-Person2-Person	#2 Couples feeder to pump and standpipe #1 Couples the delivery to the appliance and then run to esta #4 Runs the extension #2 Makes the middle coupling of the extension #4 Breaks out the middle coupling #2 Runs the replacement #3 Traps from #2 and connect replacement coupling to the p #4 Cannot assist making the replacement 70mm (i.e., holding #3 Must be the one to tie the knot #1 Couples feeder to the pump (anyone can plug to the stand	ump the 45)		
	O 2-1 et 50ff	#1 Couples feeder to the pump (anyone can plug to the stand #1 Couples the delivery to the appliance #1 Runs the delivery and then establish & shoot #2 Must be the one to tie the knot #2 Runs the replacement and then establish and shoot	_{Ρί} ρο J		
*	Note 1	In the 2 Person, anyone can connect the replacement delivery	to the applia	nce	