Fire Engineering

Pty Limited

LONGREACH
HIGH PERFORMANCE
TRAILER MOUNTED MONITORS

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The Longreach trailer mounted monitors are the most versatile, manoeuvrable and best performing monitor platforms on the market.

- Choice of aspirating nozzles or non-aspirating nozzles.
- Orion Foam Lord Nozzles produce superior fire streams.
- Your choice of proportioning system.
- Your choice of hose coupling systems.
- Light weight but extremely stable trailer design.
- Built for use with seawater.
- 5-year waterway warranty.
- Longest throws available.
- Field adjustable flow rates for non-aspirating nozzles.
- A full range of accessories.

200mm Longreach Trailer Mounted Monitor with 4 x 125mm inlets flowing 15,000 lpm at 1000 kPa and throwing about 105M.

Large Capacity Monitor Overview

Some important points need to be considered when designing or selecting large capacity trailer monitors.

1. From a fire fighting point of view there is no reason to have a trailer with 360 degrees travel. When the trailer is in use it will be dealing with a fire up to 80 meters away and no more than 80M wide. The maximum apparent width of such a fire is 53 degrees. The working travel needed for the trailer would be about 60 degrees if a margin for flexibility were included. It might be worth considering that if you ever need to turn the monitor through 180 degrees when fighting a fire you could be in serious trouble.
2. For fire fighting there is no reason to have the nozzle depressed below 30 degrees elevation. Maximum throw will occur at an elevation of about 35 degrees. If less throw is required the nozzle can be elevated further or adjusted to a wider spray pattern. It is important to note that foam should be applied gently, if the nozzle is depressed below 35 degrees the foam stream will have a high horizontal velocity when it hits the fuel and will be much less effective.
3. When fighting large tank fires (or any other fire) will one large fire stream be more effective than two moderate sized streams? The answer to this is simple. In many fire fighting situations two fire streams are needed to extinguish a fire. When dealing with large capacity monitor trailers other considerations such as the management of the hoses and other resources makes two smaller trailers easier to use.
4. Is putting all your eggs in one basket good strategy?
5. Having smaller equipment makes training easier, and the equipment can be deployed for smaller incidents. Smaller equipment will be used more often making it a better investment.

The first three points are very important in the design of large capacity monitor trailers. If the nozzle is depressed below 30 degrees it will be more difficult to stabilise the trailer. Since there are no good fire fighting reasons for depressing the nozzle below 30 degrees the trailer is more stable if the monitor travel is restricted to a minimum of 30 degrees.

Similarly, if horizontal travel is restricted the trailer can also be simplified. A trailer that has more movement than is necessary becomes large, cumbersome and more difficult to use. Ballast tanks are needed for stabilisation and in the long run the tanks will also be the biggest maintenance problem. If the ballast tanks can be eliminated the trailer will be lighter, easier to tow and manoeuvre and require less maintenance. It will also be easier to set up the trailer when it is needed and easier to pack up after.

Handling and management of the hoses supplying the monitors is also a significant issue. Smaller hoses are easier for personnel to deploy and smaller monitors

By using these design principals a well balanced trailer that can be moved by two or three people is made possible. No ballast tank is required and a reasonable sized sedan can tow the trailer. They are simple, reliable and can be set up quickly by a very small crew. Two men can set up a 200mm trailer in only a few minutes. The most time consuming job is connecting the hoses. Training is also simplified.

With good nozzle design it is possible achieve throws at 25,000 litres per minute that are superior to other nozzles at 50,000 litres per minute. The bottom line is that two trailers can fight the same fire just as effectively as one; in fact they can do it better if they are designed correctly.

Fire Fighting Techniques

It has been recommended by some that one fire stream aimed at the centre of a tank fire is the most efficient method for using monitors. In our opinion there are two fundamental problems with this fire fighting technique. The centre of the tank fire has the strongest updraught and the hottest temperatures. These conditions will be very destructive of any foam stream that passes through this part of the fire.

A far better fire fighting technique is to apply foam at the edge on each side of the tank. Here the foam is actually drawn down into the tank by the airflow and has the least exposure to high temperatures. Basically, this way we will get the most foam onto the fuel and thereby extinguish the fire most efficiently.

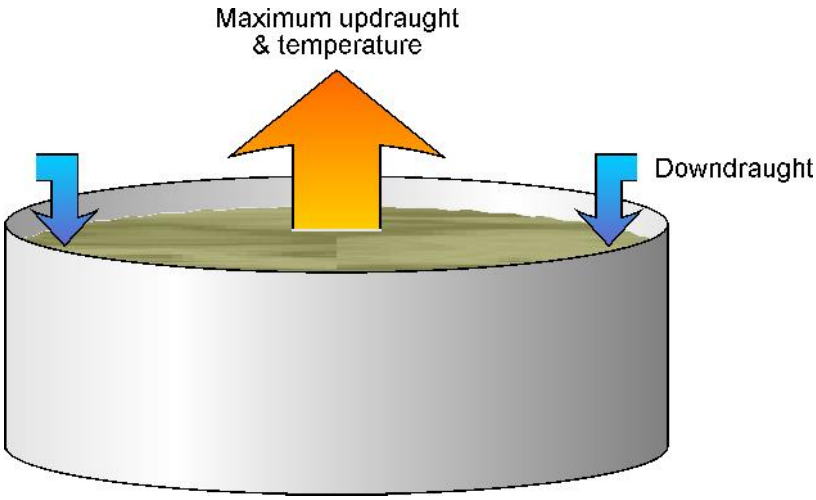


Fig 1. Tank Fire Air Flow

Two fire streams will also set up efficient counter currents within the tank to bring foam to the front face of the tank, thus extinguishing the fire at the front edge quicker.

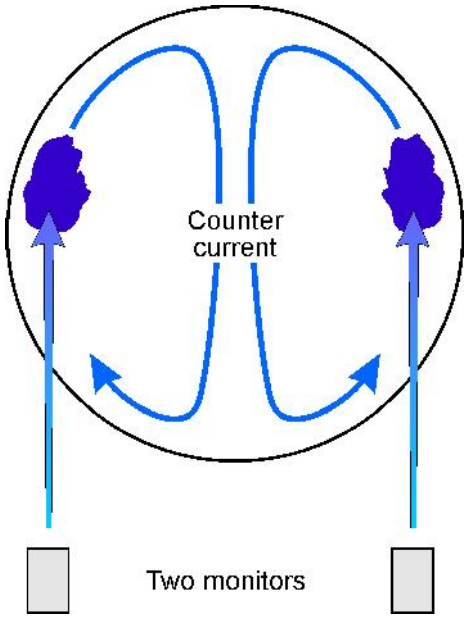


Fig 2. Two monitor fire fighting method

There are other advantages with the use of two monitors, such as:-

1. If a hose bursts only one monitor will be out of action or at reduced performance, basically it is bad practice to put all your eggs in one basket,
2. One monitor can be shut down and moved without completely stopping fire fighting operations, and
3. When a monitor needs to be moved it can be carried out more easily and faster if the monitor is smaller.
4. In the worst case scenario of a floating roof tank with a partially submerged roof two monitors will be far more effective than one.

Nozzle Selection

There are two schools of thought on the right selection of nozzle for fighting large tank fires. One school insists that non-aspirated foam is best while the other school insists that only aspirated foam will work.

Test data on aspirated Vv non-aspirated foam is strongly in favour of aspirated foam as being the most effective for tank or pool fires. If this were the only issue aspirated foam would be the only choice. Unfortunately aspirated foam will not throw long distances so that for large tank fires it may not be possible to apply it. Consequently, non-aspirated foam nozzles may be needed to gain control of large tank fires.

Aspirated foam will also be far more efficient when securing a tank after a fire.

Consequently, large capacity trailers should be able to use both aspirated and non-aspirated nozzles.

Longreach trailers

Longreach trailers are available in three sizes. Each trailer uses a well-proven Ranger geared monitor and is dynamically stabilised by the nozzle reaction.

The trailer units can be fitted with a wide range of nozzles. Our Foam Lord nozzles provide the best non-aspirated performance available and can be quickly substituted for aspirated nozzles when required.

Model No:	Nominal Size:	Maximum Flow	Maximum Throw	Weight
LRT-100	100mm	7,500 lpm	80M	350 kg
LRT-150	150mm	16,000 lpm	100M	500 kg
LRT200	200mm	30,000 lpm	130M	750 kg

Maximum Working Pressure: 1600 kPa

The trailers and waterways are designed for long term use in refinery environments. Our 5-year waterway warranty is a sign of our commitment to quality. A full range of accessories is available with each trailer.

Some Longreach Trailer Stories

150mm Longreach Trailer Mounted Monitor with 4 x 90mm Storz Inlets.

These units were supplied with 9000 lpm fog nozzles and 6000 lpm FLD-100 foam inducting fog nozzles that can directly induct foam concentrate or be used with a transfer proportioner. They are regularly used by a fire brigade for rubbish tip fires, warehouse fires and are available for large petrochemical fires when needed. The multi-role nature of the trailer means that it is used regularly and is a valuable piece of fire fighting apparatus that is not locked away and neglected. They have been in service for more than 6 years with zero maintenance problems.

150mm Longreach Trailer Mounted Monitor.

The trailer is flowing 6,000 lpm at 1,000 kPa and throwing water more than 80 meters.

Even with the nozzle at a relatively low angle the trailer is stable and one man can operate it with ease.

This trailer is ideal for fire service use or around a small petrochemical plant.

200mm Longreach trailer with an aspirated foam nozzle

The nozzle is our Model FF-10000 Aspirated Foam Nozzle Flowing at 10,000 lpm

It takes about three minutes to change from a Foam Lord nozzle to an-aspirating nozzle.

This operational trailer is a hit with the fire fighters due to the ease of use and superior throw from the FLD2-150 nozzle.

The 200mm Longreach Trailer

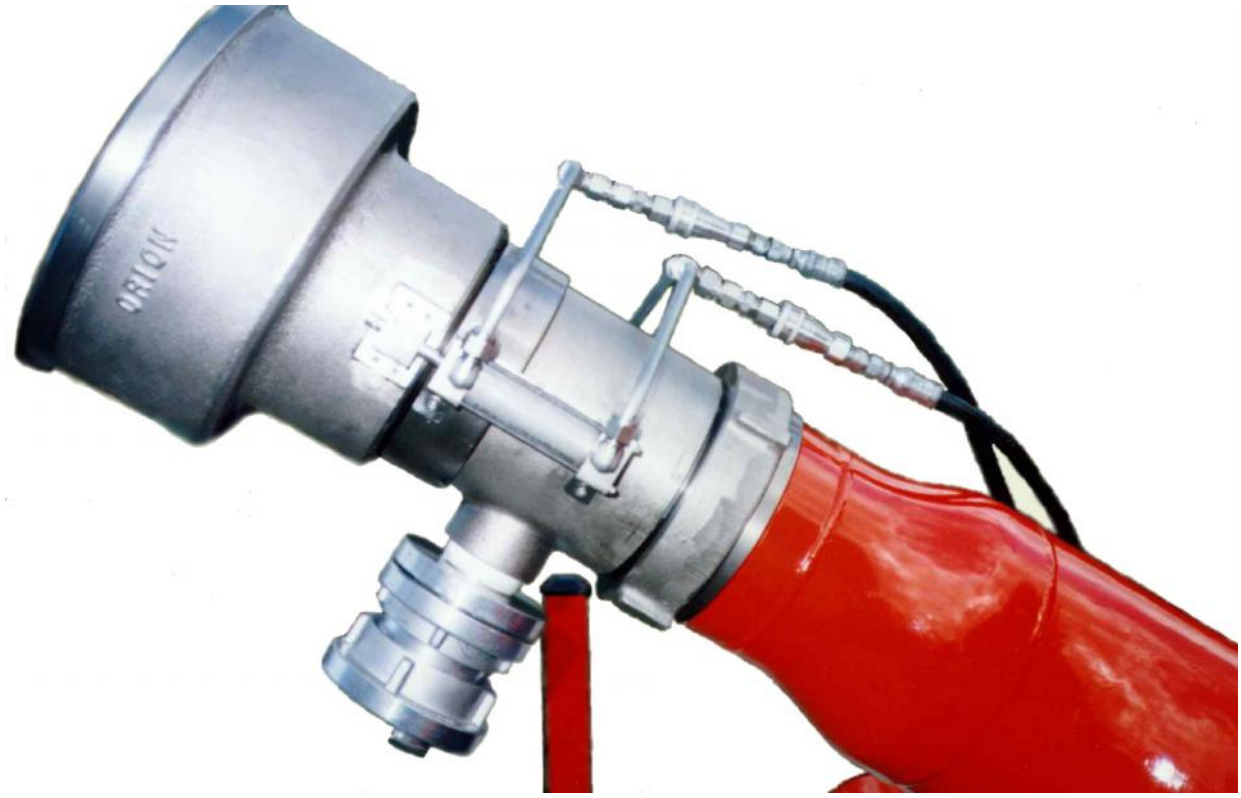
The nozzle is our FLD-150 operating at 1,000 kPa and flowing @ 15,000 lpm.

This picture illustrates the full fog setting for this nozzle. Great for fast knock down of spill fires, applying large volumes of cooling water or vapour cloud mitigation.

The Nozzle of Choice

Our Foam Lord nozzles add the performance advantage to our well designed and robust trailers.

Our FLD2-100 nozzle is used on or 100mm trailer while the FLD2-150 is used on the 150mm and 200mm tailers.



The FLD2-150 foam inducting fog nozzle.

Fitted to a 200mm Longreach trailer

The FLD2-150 nozzle is fitted with hydraulic control rams for ease of use from behind the trailer.

Distributed By:

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