FIRE ATTACK SYSTEM technology

Gary McDowall

A number to remember

5
Importance of water

- We fight fire with water. Without it or enough of it, we will fail to extinguish or lose control of the event.
- Water costs money to use it. It does not come free.
- Let’s forget the following:
  - Cost of water itself.
  - Cost of fire run-off (environmental)
  - Cost of waste disposal or water treatment.

The real cost

- Pump: 2700 lpm @ 10 bar
- Hosereels: 2 x 120 lpm @ 30 bar
- Tank Capacity: 1800lt Approx.
- Atomony: < 1 min
- Crew: 5
- Weight: 13,000 Kg
- Fuel Economy: 47 l/100km
- Size: 7 m x 2.5 m x 3.3 m (LxWxH)

Cost: £250,000
Can this work?

- Pump: 20 lpm @ 180bar
- Tank Capacity: 460lt Approx.
- Atonomy: 23 min
- Crew: 2 or 3
- Weight: 3,500Kg
- Fuel Economy: 8.5 l/100km
- Size: 5.3 m x 1.8m x 1.8m (LxWxH)

Cost: £50,000

Water Usage Comparisons

<table>
<thead>
<tr>
<th>Type Of Fire</th>
<th>Conventional Delivery @ 200 lt/min⁻¹ Water Requirement</th>
<th>FAS Ultra @ 19 lt/min⁻¹ Water Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet (15)</td>
<td>950 lt</td>
<td>85 lt</td>
</tr>
<tr>
<td>Car</td>
<td>850 lt</td>
<td>60 lt</td>
</tr>
<tr>
<td>Grass Fire 200m²</td>
<td>1,800 lt</td>
<td>225 lt</td>
</tr>
<tr>
<td>Rubbish Skip 10m³</td>
<td>1,200 lt</td>
<td>160 lt</td>
</tr>
<tr>
<td>Tyre Fire (35)</td>
<td>1,800 lt</td>
<td>100 lt</td>
</tr>
</tbody>
</table>
West Yorkshire
West Yorkshire Fire and Rescue Services study FAS

- Rapid intervention reduced response time.
- 4 x 4 vehicle
- From 5 fire fighters to 3 fire fighters
- 750 fires in 8 weeks
- Plan to scope out to 49 Fire Stations

- Financial benefits:-
  - Manpower
  - Vehicle build
  - Vehicle maintenance
  - Fuel costs
  - Training

Fire Attack Systems

- 3FFF Limited introduce the High Pressure Fire Attack System
- Manufactured in Corby, Northants. UK
- Firebuy Framework Agreement (Portable Pumps)
- Designed for first response with rapid fire attack
- Skid mounted for 4x4 vehicle application
- Completely independent fire fighting system
- Up to 23 minutes constant application with independent 450 litre water tank
FAS
Fire Attack Systems

FAS units complete with 450 litre tank can be fitted to most 4x4 off road (RIV) Rapid Intervention vehicles.

Nissan Navara
Ford Ranger
Toyota Hilux
Land Rover

The FAS units can be adapted to fit any vehicle

Fire Attack Systems 3Q’s

• Quality products
  • Designed and engineered to a high specification
  • Reliable – Efficient – Durable

• Quality partnership’s
  • Understanding that is based on support, trust and security
  • Appreciation of needs and local requirements
  • Distributed by Firesource in New Zealand

• Questions
  • Never think twice about asking questions. The answer should always be positive. Fire Attack Systems have many advantages over conventional water delivery
Fire Attack Systems

- 3FFF Limited equipment, fire fighting foams, wetting agents and dry chemical products. Sister companies include ABC MacIntosh Limited manufacturer of FAS and Foamclean Limited

World distribution of Fire Attack Systems and equipment
- Ultra
- Mini
- Tanks and auxiliary equipment

- Distribution of CTD systems
  - Triton
  - Cameleon
  - Salamandre
  - Iguane

FAS Ultra
FAS Mini

High Pressure water systems used by Municipal, Industrial Fire Rescue Services and event organisers
- Low water usage
- Light and easy to operate
- Versatile delivery of jet and spray
Discover FAS Ultra Video
Fire & Rescue Services UK

West Yorkshire
South Wales
Kent
Manchester
Wiltshire
Highlands & Islands
Strathclyde
Central Scotland

FAS Ultra

- Twin 30 metre hose reels
- 180-200 bar pressure
- Electric start engine
- Only 19 Litres of water /p/m
- Delivering high / low pressure
- Up to 90 metre hose on single reel with no pressure loss.
- No pressure loss on single reel with 16 metre head
- 105 kilo weight
- Taco run time meter
- Anti kink 800 bar hose
**FAS Mini**

- Single 30 metre reel
- 140-150 bar pressure
- Manual start engine
- Only 14 litres water /p/m
- Delivering high / low pressure
- Up to 90 metre hose
- No pressure loss on single reel
- 50 kilo weight
- Anti kink 800 bar hose

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**Fire Attack Systems**

- Why choose Fire Attack Systems
- Ultimately designed for light transport vehicles
- Short set up time for fire attack
- Easy to operate and maintain
- Lowest volume of water usage
- Optimum pressure for highest efficiency
- Optimum water droplet size
- Lowest extinction times achieved
- Least amount of water damage
- High quality build on aluminium frame
- Highest specification engine and pump
- Lightest unit – kilo to litre ratio
- Foam delivery options
- Hose reels with extension options
Fire Attack Systems

Where would Fire Attack Systems be used most effectively in fire fighting?
- Vehicle and equipment fires
- Forest fires
- Land fires
- Peat fires
- Tyre fires
- Pallet fires
- Waste material fires
- Small building fires
- Small oil or petrol fires

- FAS can also be used for fire prevention by creating a foam or wetting agent barrier to prevent fire spread

Fire Attack Systems

Are there other applications for Fire Attack Systems?
- Post fire clean up
- Applying D-Foam
- Anti foaming agent
- Applying K-Foam: Oil slick breakdown
- Applying OD4000: Coastline oil clearance

- FAS can also be used offshore secured to small water craft or amphibious vehicles
Fire Attack Systems

• **Pressure**
  - High pressure
  - Reduces the water droplet size
  - Between 5 and 20 micron
  - Uses less water
  - Improves penetration
  - Cost efficient

• Low pressure
  - Uses 10 times more water
  - Requires specialised nozzle
  - Larger and heavier equipment
  - Less efficient
  - More expensive

Fire Attack Systems

• **Water**
  - Best use of available water
  - Fresh, brackish or salt water
  - Less water requires smaller tank
  - Lower carrying weight

• **Wetting agent ‘FREEFOR’**
  - UL approved
  - Reduces water surface tension
  - Increases water capacity x 10
  - Promotes penetration of solid fuel
  - Provides rapid cooling effect
  - Improves versatility of equipment
FAS Dual Lance

- High pressure water delivery on upper lance via FAS adjustable nozzle with low pressure option at the nozzle
- Low pressure foam delivery on lower lance via aspirated foam nozzle with foam induction control
- Blue / Red change over valve with snap on male fitting

FAS Nozzle

The FAS nozzle has four easily adjustable settings

- High Pressure (H)
  - Pull out
- Low Pressure (L)
  - Pull in
- Jet (I)
  - Turn right
- Spray (<)
  - Turn Left
FAS Connections

• FAS lances use quick snap on / snap off connections on the trigger or gun for ease of use

• The blue button is pressed for water lance

• The red button is pressed for foam lance

FAS Lances

• FAS Piercing Lance used to prevent to need to open an enclosed space.

  Safety First

• FAS Dual Lance

  Used to deliver aspirated foam from FREEFOR at 1% to prevent burn back

  Safety First
**FAS LANCES**

The FAS Peat Lance designed for deep seated peat fires down to 6 metres in depth.

Can also be used for roof fires and providing a fire break to high brush area’s.

Lance extends to 6 metres with 1.5 metre sections

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**FAS Water Transfer Pump**

The FAS Water Transfer pump will deliver up to 130 litres of water per minute to any of the FAS high pressure systems.

Water can be taken from any source including a river, brook or steam, pond, lake or well or a salt water source.
Fire Attack Systems

• Key Start Package:

  – FAS Ultra
  – 450 litre water tank and galvanised skid
  – Petrol driven water pump (130 l/p/m) and feed lines
  – Stortz adaptor for tank filling
  – 30 metre free standing hose reel
  – Foam Scottie Bag with 19 litre foam capacity
  – FREEFOR – 20 litre drum
  – Portable fuel tank - 10 litre capacity
  – 15 metre x 1 inch lay flat hose and nozzle

I trust this presentation has been of interest and hope you find the DVD informative.

3F and our partners Fire Resource look forward to demonstrating the versatility of the FAS units together with the FAS auxiliary equipment at your facility in the near future.

My thanks for your kind attention