

# JBA Trust Trailer Flume

## Demonstration Information

### Background

The flume is a scale model of the flow of water in a simple channel, driven by a system of recirculating pumps and featuring scale models of typical engineered structures such as weirs, bridges, culverts and debris screens.

The flume appeals equally to those with a keen interest in hydraulics and to those for whom it is an unknown science. It is particularly useful in helping to understand some of the causes of flooding and how good design and maintenance of rivers and drainage channels can help to manage flood risk.

In 2012 the hydraulic flume was trailer mounted and since then JBA Trust has supported a number of demonstrations around the country as part of its education and knowledge sharing programme.



*Photo: The trailer flume in action*

### Demonstration capabilities

The demonstration flume has been developed to demonstrate open channel hydraulic flow. It is self contained and recirculates water from a sump.

Within the 3m long, 250mm wide rectangular channel the flume can demonstrate:

- Open channel flow (and the effects of channel slope)
- Orifice flow (circular and rectangular orifice), free flow and submerged
- In line weir and skewed weir (modular and non-modular)
- Sluice flow (free and submerged)
- Arched culvert flow (all 6 flow types plus overtopping flow)
- Effect of blockage on culvert flow
- Trash screen hydraulics
- Hydraulic jump

All the above can be demonstrated in supercritical or subcritical flow.

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### Risk Assessment

The demonstrator (from JBA) must ensure that they have reviewed the risk assessment and updated it where necessary. The risk assessment template is available from Alex Scott. (Nb. this is the risk assessment for the demonstrator not the delegates).

The demonstration takes place outside and delegates will need to dress appropriately for standing outside for approximately an hour.

The flume stays on the trailer. Delegates stay at ground level and view the flume at eye level. The trailer is stable (and has additional legs to secure it when parked)

### Facilities required

The requirements for the flume in terms of facilities are:

- Two adjacent parking places (so there is room for everyone to gather around)
- Access to water (the flume has a 50m hose – but the trailer can be moved to the tap and then towed in to final position) so tap doesn't need to be near parking spaces.
- Within 50m of a 13amp/240v mains socket (although if needed we can bring a portable generator)
- Access to a drain (a car park drain will be fine – trailer can be towed to one before emptying the sump)

### Dimensions

Dimensions (approximate): Length 3000mm; Width: 2300mm;



*Photo: Flume in travel mode*