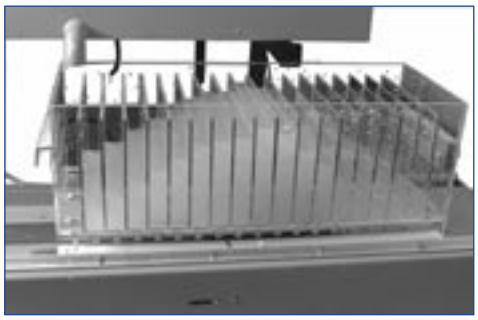
armfield

RAINFALL HYDROGRAPHS

S10
issue 9

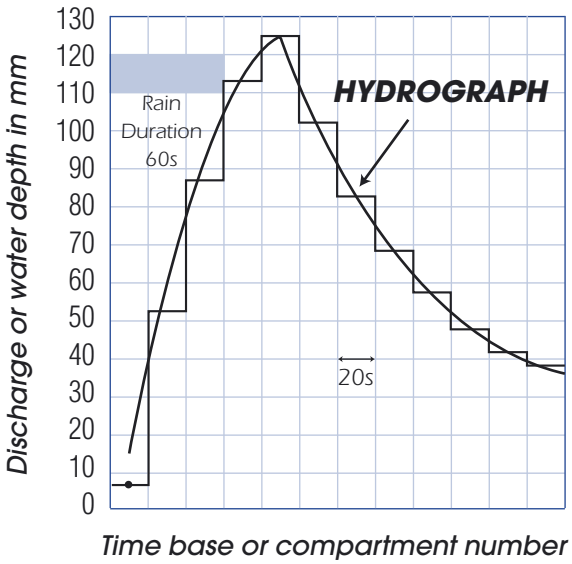


This apparatus sets out to demonstrate, on a small scale, some of the physical processes found in hydrology. These fall into two related categories: the relationship between rainfall and runoff from catchment areas of variable permeability and the abstraction of ground water by wells, with or without surface recharge from rainfall.

Thus it is concerned with that part of the hydrological cycle bounded by the arrival of 'net rainfall' on the ground surface and the catchment runoff by surface streams.

DEMONSTRATION CAPABILITIES

- *storm hydrographs from single or multiple storms*
- *storm hydrograph from a previously saturated catchment*
- *storm runoff from an impermeable catchment*
- *effect of a moving storm on flood hydrograph*
- *effect of reservoir storage on flood hydrograph*
- *effect of land drains on flood hydrograph*



A hydrograph from a simple storm

Applied Hydraulics and Hydrology

DESCRIPTION

Demonstrations are initiated using a gravel filled tank which incorporates facilities for supplying water to the surface of the gravel and measuring the runoff. The gravel tank is manufactured in stove enamelled mild steel supported by a painted mild steel frame

The equipment can be bench mounted or free standing on a laboratory floor. Water is supplied to two overhead square pattern spray nozzles via a flow control valve, flow meter and solenoid valve. Detachable see-through curtains around the tank contain any spray. Runoff is conducted to an outlet at one end of the tank.

A collection and measuring unit is located near to the outlet from the tank. This comprises a traversing vessel divided internally into 17 storage compartments. The collecting vessel is mounted on a plinth incorporating a motor drive and central drainage trough.

A control console is used to control the traversing vessel and the water supplied to the spray heads. The time each compartment is located under the tank outlet can be preselected and the overall time from the start is displayed.

Water collected in the vessel provides an immediate histogram of runoff as a function of time.

A range of accessories allows demonstrations of surface reservoir retention, depression storage effect and land drainage.

These comprise:

- *Polythene sheet for impermeable catchment*
- *Four plastic containers for reservoir storage*
- *Permeable pipe for tile drain*

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TECHNICAL SPECIFICATION

Tank dimensions:

Length:	*1.2m*
Width:	*0.6m*
Height:	*0.2m*
Flow meter range:	*0.4 - 4.4 litres/min*
Runoff collector:	*17 x 0.5l compartments*

ORDERING SPECIFICATION

- ***A unit designed to obtain catchment rainfall and runoff values as functions of time.***
- ***Comprising a bench- or floor-standing tank with two overhead square pattern spray nozzles supplying water via a flow control valve, flow meter and solenoid valve.***
- ***A motor driven traversing vessel with seventeen compartments is moved by timer beneath the outlet at a preselected rate to collect the runoff and provide an immediate display of the hydrograph.***
- ***The tank is 1.2m in length x 0.8m wide x 0.2m deep.***
- ***The flow range is 0.4 to 4.4 litres/minute.***
- ***A comprehensive user manual is included in the supply.***

SERVICES REQUIRED

- *Hydraulics bench (F1-10) or cold water supply (4 litres/min required)*
- *Drain*
- *Electrical supply:*
  S10-A: 220-240V/1ph/50Hz
  S10-B: 120V/1ph/60Hz
- *1m³ washed,well graded gravel, range 2.0 - 5.0mm*

OVERALL DIMENSIONS

Length:	*1.58m*
Width:	*0.9m*
Height:	*1.05m*

SHIPPING SPECIFICATION

Volume:	*1.6m³*
Gross Weight:	*200kg*

Specifications may change without notice.
iss9/5k/1105/BCP.