Speed of outflow from a vessel (Item No.: P1297400)

Curricular Relevance

Area of Expertise: Physik
Education Level: Klasse 7-10
Topic: Mechanik
Subtopic: Mechanik der Flüssigkeiten
Experiment: Auslaufgeschwindigkei bei einem Gefäß

Difficulty	Preparation Time	Execution Time	Recommended Group Size
Intermediate	10 Minutes	20 Minutes	1 Student

Additional Requirements:

Experiment Variations:

Keywords:

Principle and equipment

Principle

The behaviour of the speeds at which water flows out of a vessel through outlets at various heights is to be examined.

Equipment

Position No.	Material	Order No.	Quantity
1	Demo Physics board with stand	02150-00	1
2	Pointers f. Demonst.Board, 4 pcs	02154-01	1
3	Marker points for demonstration board, 24 pcs	02154-02	1
4	Clamping holder, 0-13 mm, fixing magnet	02151-07	1
5	Storage tray, 413 x 120 x 100 mm	47325-01	1
6	Overflow vessel on fixing magnet	02158-00	1
7	Graduated vessel, 1 l, with handle	36640-00	1

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Set-up and procedure

- Position the efflux vessel top left on the white, gridded side of the demo-board. Fit the tube clamp on the tubing immediately in front of the glass nozzle and tighten it. Pour 1000 ml of water into the vessel and press air bubbles out of the tubing by squeezing it.
- Draw the ouline of an imaginary larger vessel, which is to be represented by the efflux vessel, on the board (Fig. 1).
- Use pointers to mark the water level, as weil as suitable positions where the outlets are intended to be.
- Place a dish on the bench beneath the board.
- Adjust the position of the magnetic clip holding the glass nozzle of the efflux vessel on the board, that the nozzle is held horizontally with its tip ending at one of the marked outlets.

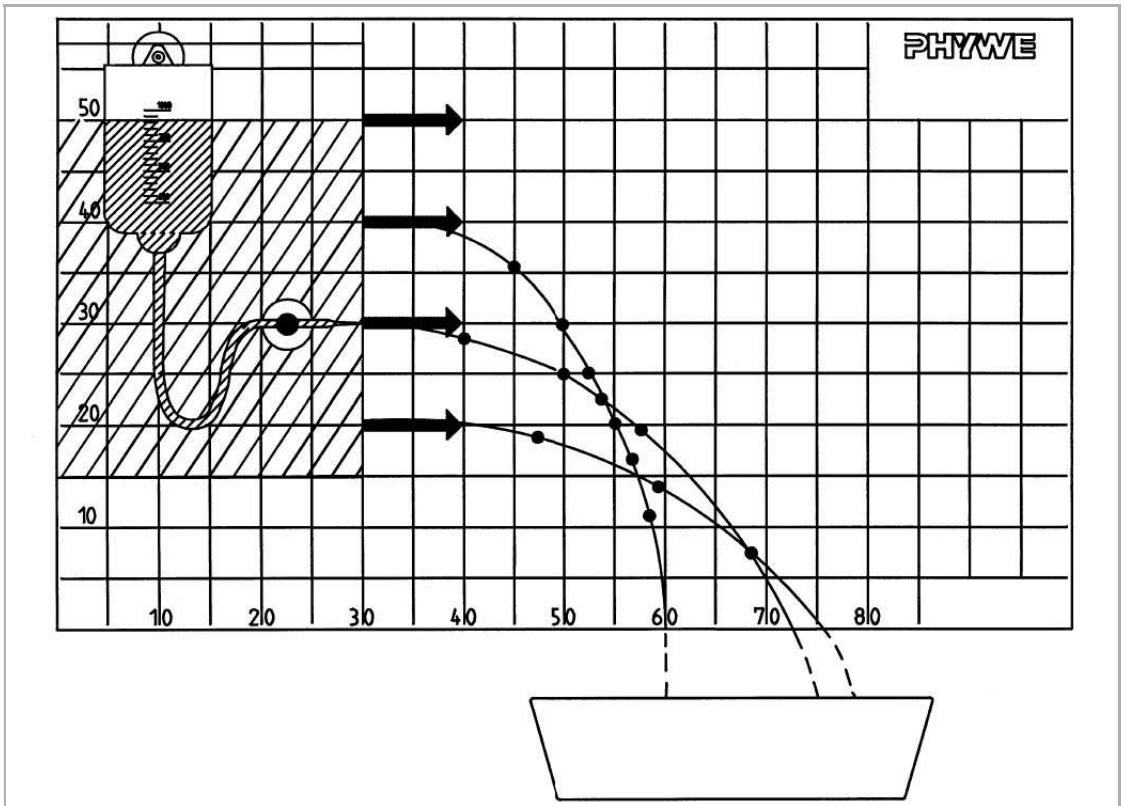

Fig. 1

- Open the tube clamp and mark the path of the water with marking points all having the same colour.
- Close the tube clamp and pour the discharged water back into the efflux vessel.
- Move the clamp with glass nozzle to the second, then the third, outlet and proceed in the same way as above for each, again marking the paths with points of a single colour.

Observations and evaluation