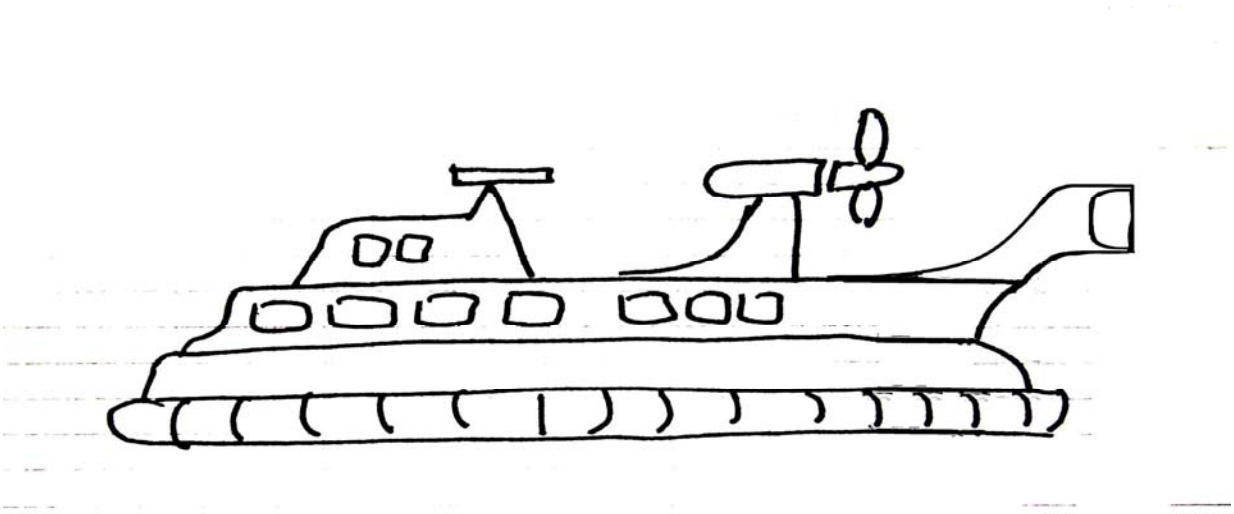
611 Bilingual – v-t-Diagramm

... der Hinweis für diese Arbeitsblatt-Idee kam aus dem Kollegium – leider ist mir die Original-Quelle nicht bekannt.

A hovercraft moves on a cushion of air, which is trapped underneath it to reduce friction.



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Arbeitsauftrag

Answer all the questions about this machine:

[01] The hovercraft starts from rest and as it starts, the propeller produces it forward of 22 000 N. The mass of the hovercraft is 25 t. Calculate the initial acceleration of the hovercraft. You may assume – in this part - there is no friction.

[02] Some time later the hovercraft reaches a steady speed, even though the Force is unchanged 22 000 N. Suggest in terms of the force acting on the hovercraft why the speed is now constant.

[03] When the hovercraft is travelling at a speed of 10 m/s the force is switched into reverse and the hovercraft gradually slows down. Draw a graph of the variation of speed with time. State how the graph shows that the acceleration is not constant.