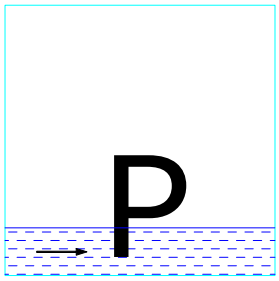
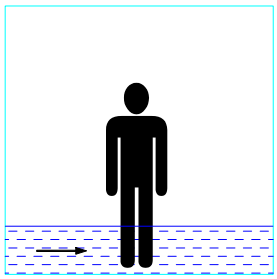
WATER CROSSING CARE

Several people have been lost when they tried to cross flooded roads either by car or on foot. Some considerations, which can be applied in the case of flooded roads, are presented below.



Applying the laws of Hydraulics and Physics it can be concluded that for an average car size the critical depth of water over which a car is carried down by the flood waves is about 36 – 47 cm.

The critical depth of flooded road for a person of medium weight is about 52 cm.



Therefore it can be concluded that in most of the cases a person walking in a flooded road or stream faces a danger at a higher depth of water.

Needless to say that under different conditions the danger is high at 24 – 31 cm for a car and 35 cm for a person.

The diagrams have been calculated based on the following assumption:

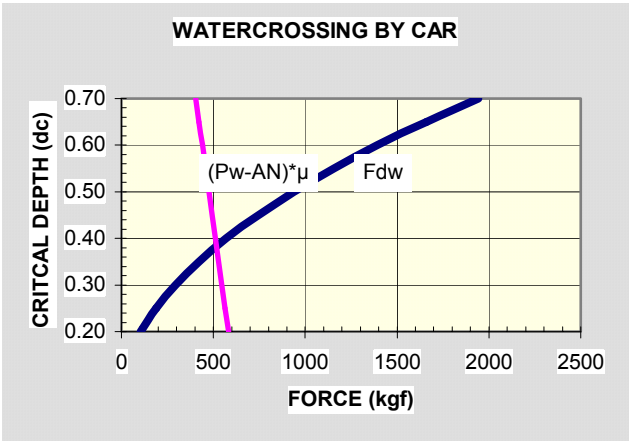
Critical velocity: $V_c = \sqrt{2gd_c / 2}$

Dragforce: $F_D = \frac{1}{2} \cdot C_D \cdot \rho \cdot A \cdot V_C^2$

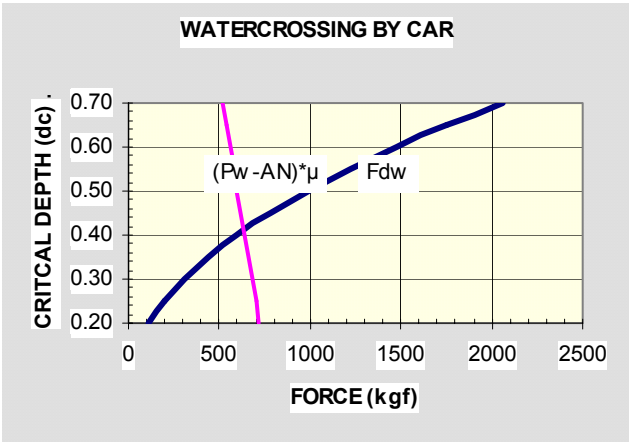
Uplift force: $F_u = \gamma \cdot V_{sub}$

Friction force $= \mu \cdot F_n$

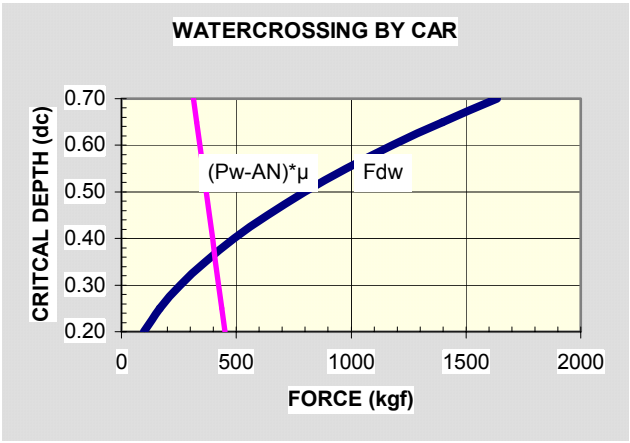
$\mu = 0.5$



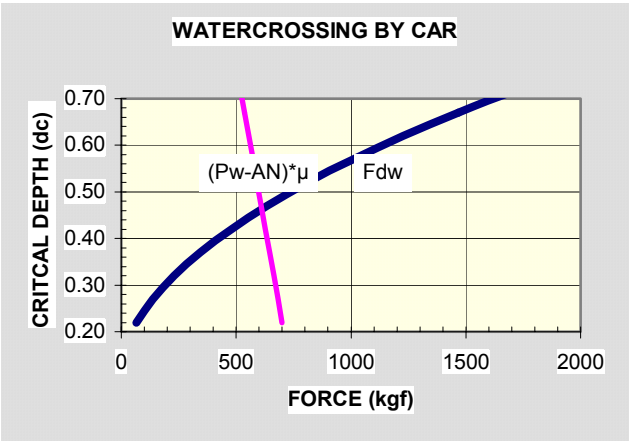
Water crossing by a medium size car



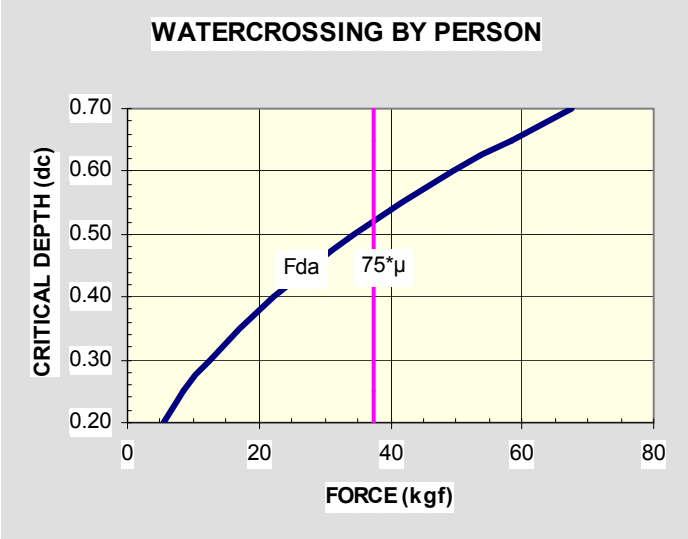
Water crossing by a large size car



Water crossing by a small size car



Water crossing by a jeep



Water crossing by a person of medium weight