

on relaxation. Relax to save your life!

For many years floating was fallaciously considered to be an inborn skill. The laws of physics explain how floating occurs and how it can be learned. Water exerts an upward pressure, "a buoyant force" upon objects immersed in it. A swimmer will float if the buoyant force of the water is greater than the force his body exerts upon the water. A swimmer in the water exerts a force downward. Acting against this force is the upward force of the water. Actual buoyancy is equal to the difference between the upward and downward forces. Physicists have computed that the buoyant force upon a submerged body is exactly equal to the weight of the liquid displaced by that body. This buoyant force acts through a point (center of buoyancy) vertically upward, and counterbalances, in whole or in part, the weight of the body. (Fig. 1)

Most individuals can be taught to float. A person, to float, must displace a weight of water equal to or greater than his own weight. For example, a recruit weighing 160 pounds equals in weight 2.56 cubic feet of water. In order for this recruit to float, he must displace a weight of water greater than 160 pounds. If he should exhale all the air in his lungs, he would displace about 2.51 cubic feet. This means that the weight of the water displaced is now 156.875 pounds. However, his actual body weight is 160. The force of his body weight downward is greater than the buoyant force of the water. Therefore, he will not float. On the other hand, by inflating his lungs, he may increase his cubic displacement in water. He should then float, since he is buoyed up by a force greater than the force exerted by his body weight. It has been computed that about 3 to 5 pounds of the recruit's body will float