Subject: Re: Renegade Alert Submarine Test #2
Posted by mahkra on Mon, 31 May 2004 05:38:10 GMT
View Forum Message <> Reply to Message

AircraftkillerThe Submarine propeller cavitates, a Navy term for "creates air bubbles", due to the speed of the propeller in water that isn't dense enough to prevent air from being released.

actually, it's not really "air being released." air being released would be something like carbonation bubbles in soda.

what actually happens in cavitation is that little pockets of water are boiling. the water doesn't boil from the temperature increasing, though; it boils because the spinning propeller makes the pressure drop along its blades (especially at the edges and the outer tips). if the prop spins fast enough, the pressure will drop so much that the water will start to boil. (this reduces thrust, makes lots of noise, and damages the propeller, so it's generally avoided. but it DOES look cool.)

there's actually a different phenomenon called "ventilation" which creates air bubbles in the water (actually air this time, not water vapor). this happens when the prop is too close to the surface (usually in ships with a low draft, especially in rough seas). surface air or engine exhaust are drawn in to the propeller because of the localized low pressure the prop creates. as the air mixes with the water, it makes little bubbles and reduces thrust (kinda like cavitation).

(ACK, please don't be offended by my nitpicking. i just think this stuff is kinda cool and don't want people to get the wrong idea about what it is.)