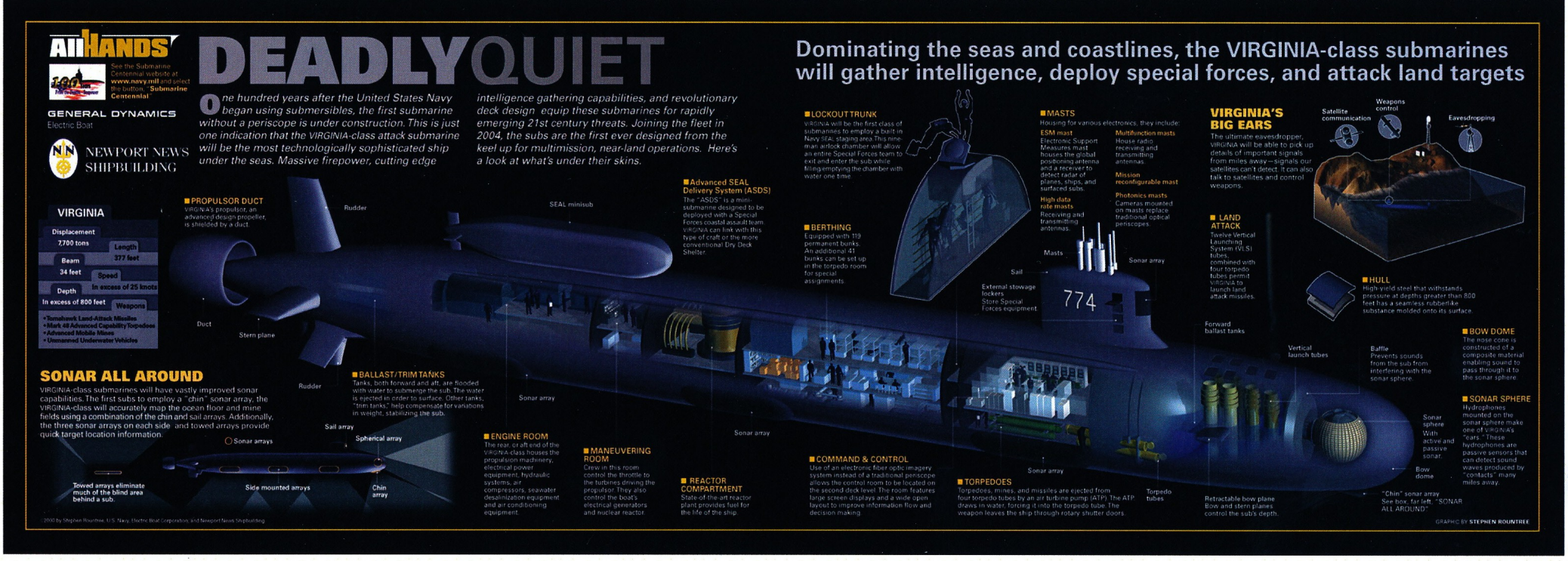

The USS *Illinois*, a new attack submarine is an advanced stealth multi-mission nuclear-powered submarine for deep ocean anti-submarine warfare and littoral (shallow water) operations.

Design: The hull size is length 377ft by beam 34ft and the displacement is 7,300 tons submerged, which is smaller than the more expensive Seawolf attack submarine with displacement 9,137 ton submerged. The hull structure contains structurally integrated enclosures, which accommodate standard 19″ and 24″ width equipment for ease of installation, repair and upgrade of the submarine's systems. The submarine is fitted with modular isolated deck structures, for example the submarine's command center will be installed as one single unit resting on cushioned mounting points. The submarine's control suite is equipped with computer touch screens. The submarine's steering and diving control is via a four-button, two-axis joystick. The noise level of the Virginia is equal to that of the US Navy Seawolf, SSN 21, with a lower acoustic signature than the Russian Improved Akula Class and fourth-generation attack submarines. To achieve this low acoustic signature, the Virginia incorporates newly designed anechoic coatings, isolated deck structures and a new design of propulsor. Goodrich is supplying high-frequency sail array acoustic windows and composite sonar domes.

Weapon systems: The submarine is equipped with 2 vertical missile launch modules and four 21″ torpedo tubes. The vertical launching system has the capacity to launch 16 Tomahawk submarine-launched cruise missiles (SLCM) in a single salvo. There is capacity for up to 26 mk48 ADCAP mod 6 heavyweight torpedoes and sub harpoon anti-ship missiles to be fired from the 21″ torpedo tubes. Mk60 CAPTOR mines may also be fitted. An integral lock-out / lock-in chamber is incorporated into the hull for special operations. The chamber can host a mini-submarine, such as Northrop Grumman's Oceanic and Naval Systems advanced SEAL delivery system (ASDS), to deliver special warfare forces such as navy sea air land (SEAL) teams or Marine reconnaissance units for counter-terrorism or localized conflict operations.

Propulsion: The main propulsion units are the GE pressure water reactor S9G, designed to last as long the submarine, two turbine engines with one shaft and a United Defense pump jet propulser, providing 29.84MW. The speed is over 25kt submerged.