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"TRIDENT" STRATEGIC NUCLEAR MISSILE SUBMARINE

by

Li Ou

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By: /Li Ou

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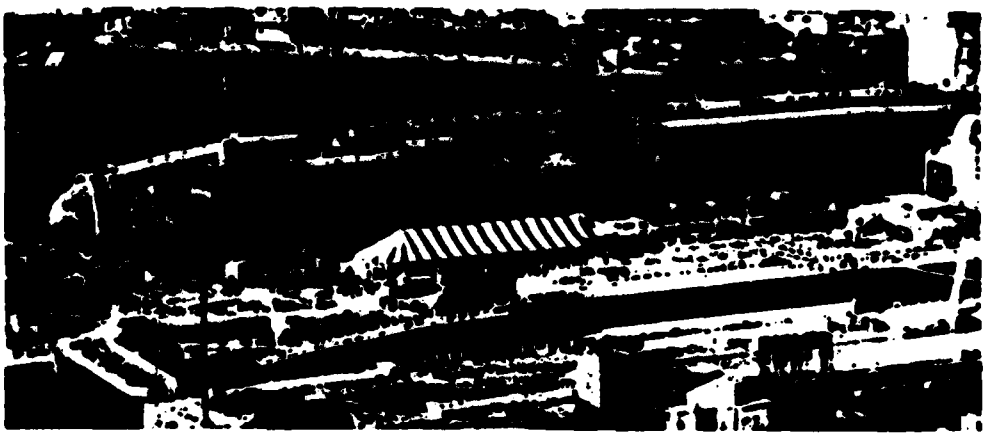
"TRIDENT" STRATEGIC NUCLEAR MISSILE SUBMARINE

Text provided by Li Ou

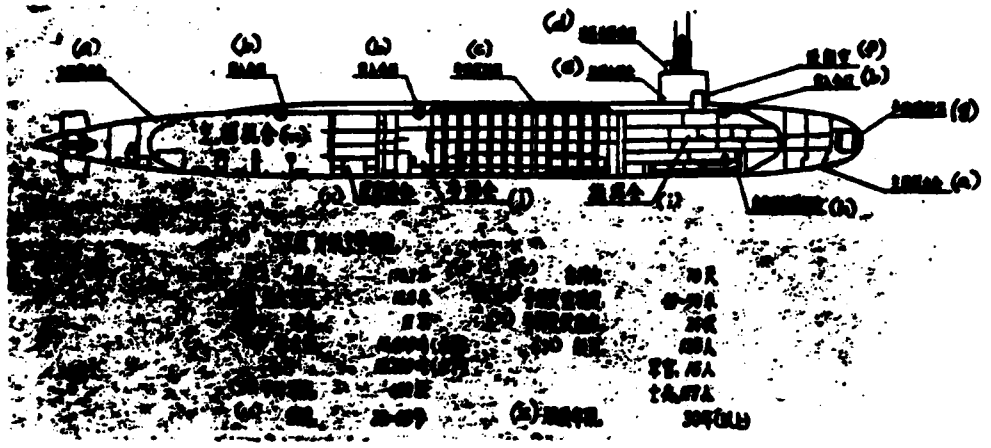
The United States' first "Trident" submarine, "Ohio" (SSN 726) was put into naval service in November 1981. Its length is 170.7 m, submerged displacement is 18,700 t, it is equipped with 24 "Trident" missiles, and is now the largest, the highest performance, and the most advanced strategic nuclear missile submarine in the world.

The "Trident" submarine's underwater speed can reach 20-25 knots and maneuverability is good. It is fully equipped with onboard navigation equipment which is of advanced performance, its submarine position fixing accuracy is high and its missile position fixing accuracy is not affected by the submarine's distance from the U.S. mainland. In addition there is an electrostatic floated-type gy monitor installed onboard, which improves the accuracy of the onb autonomous navigation system and reduces the number of times the submarine surfaces for position fixing. Moreover, the submarine is equipped with a multipurpose radio communication system, which is fast and reliable for external communications and enhances the concealment ability of the submarine. The submarine also employs noise reduction measures such as a natural circulation pressurized water reactor and direct electric power propulsion, it has an advanced BQQ-6 multipurpose sonar system, an MK118 torpedo fire control system, Mark 48 acoustic and wire guided torpedoes, which enable the "Trident" submarine to have an advantageous position in opposition to enemy ships, and enhances the survivability of the submarine.

Playing the most important part with respect to enhancing the ability of the submarine to servive is the range of the "Trident" missiles. "Trident" missiles are divided into two types. At present, the submarine carries the "Trident 1"; the "Trident II" is under development. Their warhead equivalent weight is high and their ability to defend against attack is great. Furthermore, their hit accuracy is high (the circle of probable error at maximum range does not exceed 230 m). The range of the two types of missiles are 4600 nmi and 6000 nmi, respectively. Thus, when cruising in waters with an area of 1400 square nmi, a submarine equipped with Trident I missiles can threaten Soviet targets everywhere. Carrying Trident II missiles on the other hand can enable the submarine's combat cruising area to be expanded to 5500 square nmi. Such a vast area will be difficult for Soviet anti-submarine capability to deal with. The advanced performance of the Trident submarine has aroused wide-spread attention in the world, particularly with the Soviet Union even more unwilling to lag behind. According to reports, the Soviet Union is presently hard at work building a "Typhoon" class submarine similar to the "Trident" submarine.

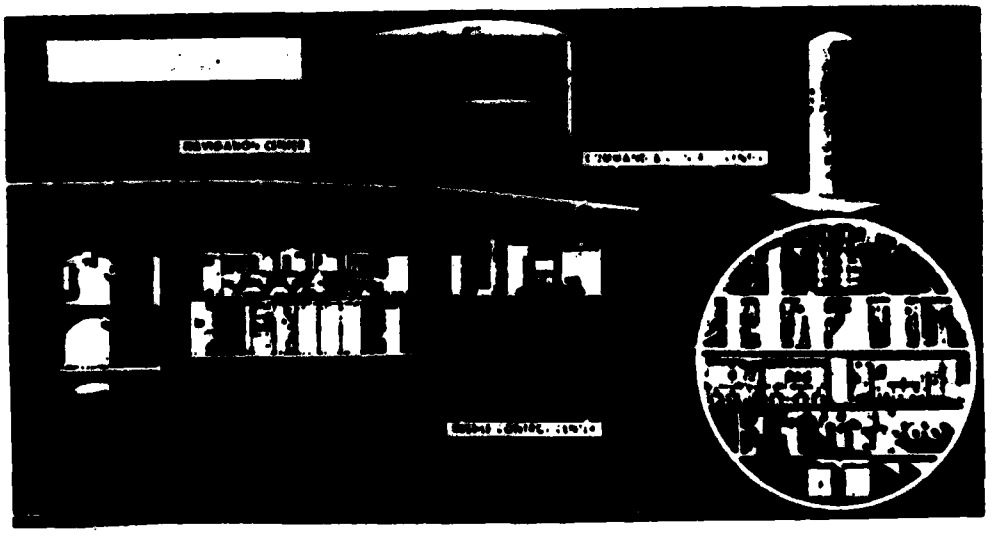


A Trident submarine, the "Michigan", under construction. Its outer hull has still not been installed and the arrangement of the guided missile launch tubes is cleary visible.

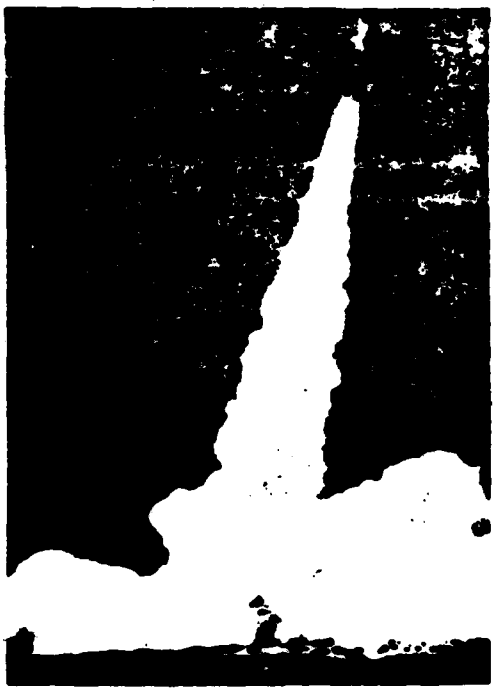


A sketch of compartments of the Trident submarine.

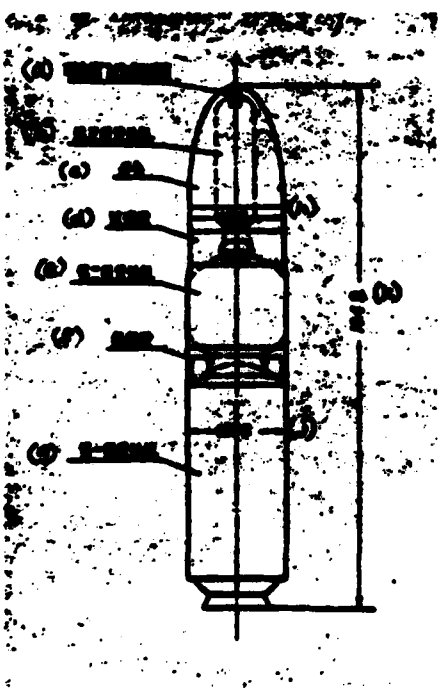
KEY: (a) Main ballast tank; (b) Entry and exit hatch; (c) Guided missile launch tubes; (d) wave pressure elevator tower; (e) command bridge circular hull; (f) (illegible) chamber; (g) sonar (illegible); (h) Torpedo launch tube location; (i) Command bay; (j) Guided missile bay; (k) Reactor bay; (m) Main and auxiliary engine bay; (n) Main characteristics of Trident submarine; (p) Overall length 170.7 m; (q) Maximum width 12.8 m; (r) Draft 11 m; (s) Displacement, 16,600 t (surfaced), 18,700 t (submerged); (t) Diving depth 400 m; (u) Speed 20-25 knots; (v) Self-sufficiency 70 days; (w) Navigational position fixing accuracy 45-50 m; (x) Missile carrying capacity 24 missiles; (y) Personnel 133, officers 16, seamen 117; (z) Service life 30 years.



Guided missile launch control center of the Trident submarine.

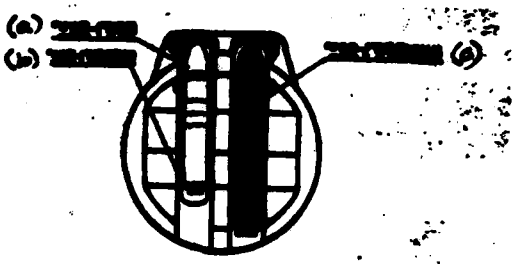


Trident I missile surface launch test being carried out.



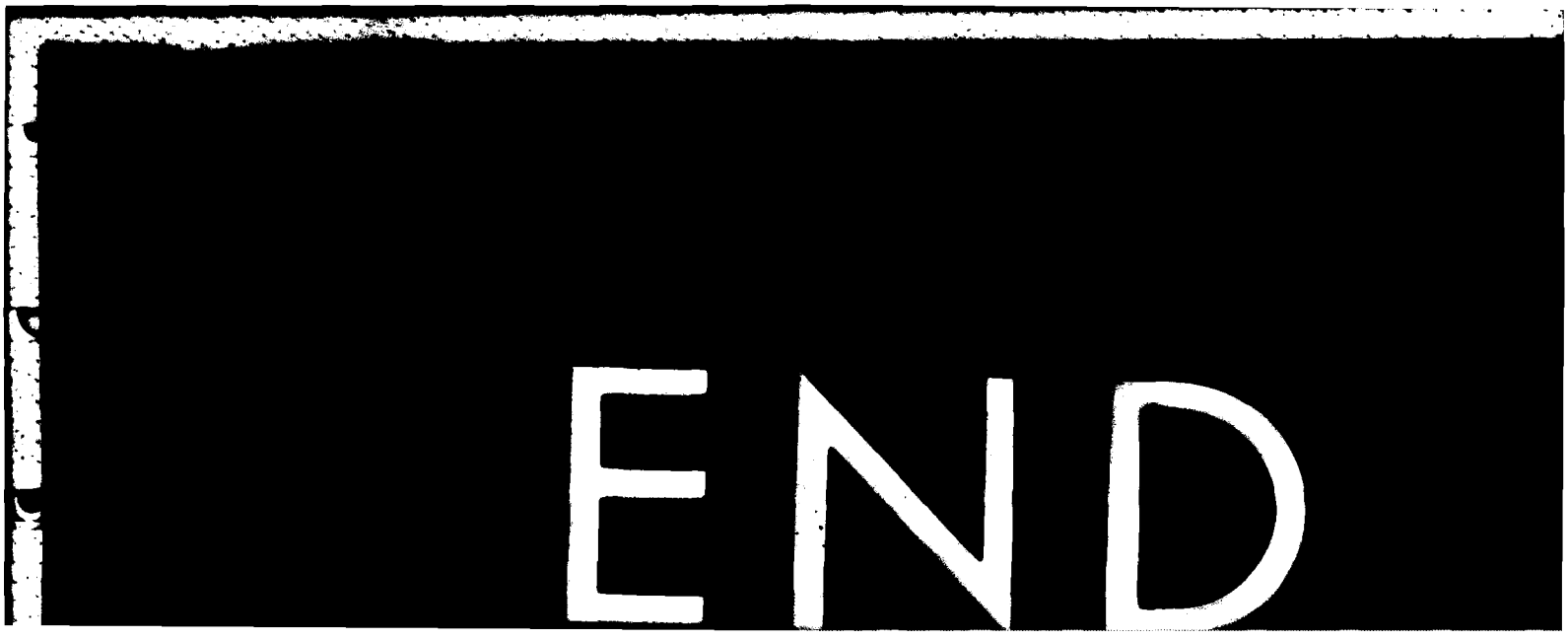
Structural sketch of Trident I missile. Main characteristics: Overall length 10.4 m, diameter 1.88 m, number of rocket stages 3, range 4600 nmi (8500 km), warhead MK4 - MIRV package-type warhead. Has a total of 8-10 separate warheads, each separate warhead has a 1000 kiloton equivalent weight. Circle of probable error at maximum range is 230 m.

KEY: (a) Extendable flight (illegible); (b) Third stage engine; (c) Main bay; (d) transition stage; (e) Second stage engine; (f) (illegible) stage; (g) First stage engine; (h) 1.83 m; (j) 1.88 m; (k) 10.4 m.



Missile launch tube arrangement. The right launch tube in the figure represents the Trident II missile with which nuclear submarines will be equipped in the future. Since the nuclear missiles are still under development, the launch tubes presently use a sleeve insert in each launch tube to accomodate the smaller Trident I missiles, as shown on the left.

KEY: (a) Trident I missile; (b) Trident I (illegible); (c) Trident II missile (under development).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