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THE SECRETARY OF DEFENSE
WASHINGTON, D. C. 20301

March 2, 1976

MEMO FOR: BRENT SCOWCROFT

FROM: DONALD RUMSFELD

I gave the President a copy of the attached this morning in response to his earlier request for information on the cruise missile test.

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Brent

2 March 1976

FACT SHEET

TOMAHAWK CRUISE MISSILE TESTS

It has been recently reported in the press that the Vought version of the SLCM missile suffered two failures at the Navy's test range in the Pacific. This press release by Reuter should be clarified to indicate that the reported failures effected only the Vought version of the missile, during but one of the on-going related tests by the two contractors, General Dynamics and Vought Corporation, which will be utilized in selecting a winner to proceed into further development of the TOMAHAWK missile.

To date, both contractors have successfully demonstrated the ability of their designs to withstand the shock effects of near-miss depth charge explosions. They have also both demonstrated the proper functioning of their turbo-fan sustainer engines in a full scale wind tunnel test at an Air Force facility in Tennessee. The reported failure on the part of one of the competing contractors does not mean that there has been a breakdown in the basic test program, but rather points out the advantage of having alternatives available which will permit the orderly achievement of basic program objectives at low technical risk. It should also be pointed out that the two failures of the Vought version of the TOMAHAWK missile yielded valuable technical data which is presently being utilized by that company in a modification program prior to an additional launch demonstration tentatively scheduled for 24 March 1976 at the San Clemente Island facility of the Naval Undersea Center, San Diego.

DETAILS OF THE TWO TEST FAILURES

On Friday, 20 February 1976, a launch of the Vought version of the missile was attempted from a depth of 190 feet from a hydraulic torpedo tube suspended beneath a test barge off San Clemente Island. The purpose of this competitive demonstration was to prove the ability of the Vought missile to be ejected from a submarine torpedo tube, ignite the rocket motor under water, propel the missile to the surface, broach the surface, deploy the wing and tail surfaces from their stowed position within the missile, and establish controlled flight prior to initiation of the recovery sequence by parachute. In this test, a defect in the torpedo tube caused the missile to be ejected at a very low velocity. The missile, sensing this low launch velocity, initiated a pre-programmed safety shutdown which prevents the ignition of the booster motor as a means of protecting the launching submarine from the blast effects of the rocket motor at too close a standoff distance. The failure, in this case, was in the Navy equipment not the missile. The missile did exactly as it had been programmed to do, shut down without lighting the rocket motor. The failure in the Navy equipment was caused by a stray voltage in a gyroscope circuit interacting with an air valve in the torpedo tube impulse circuit which caused the missile to receive a less than normal eject velocity. The missile sank in 400 feet of water and was later recovered by a Navy recovery vehicle for refurbishment and later test firing.

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The second Vought demonstration was attempted on 24 February 1976 at the San Clemente Island following the repair of the defective torpedo tube. This launch was also conducted at a depth of 190 feet from the suspended torpedo tube. Shortly after the weapon cleared the end of the torpedo tube, a premature ignition of the rocket motor took place due to a design defect in the firing circuit of the missile which by-passed firing interlocks. The rocket motor then propelled the missile to the surface normally, but a premature broach signal caused the pyrotechnic system to begin the programmed deployment of the missile tail surfaces too early in the flight. The missile, in attempting to recover from the two previous premature events, went out of control and terminated the flight short of the designed range. The causes of the failures have been determined from on-board instrumentation and high speed camera coverage and corrective modifications are being incorporated in the re-work of the previously failed missile prior to a further flight test.

General Dynamics, in their conduct of a similar test demonstration, achieved more successful results in that their missile was ejected normally and went through its pre-programmed sequence of ignition, broach, wing deployment and stable flight to recovery from its water impact.



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