



NAVAL SEA SYSTEMS COMMAND
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APL Technical Digest: Navy Missiles Issue

Foreword

In this century, war at sea was fought with guns in World War I. It was fought primarily with airplanes in World War II. Clearly the next contest, if it comes, will be fought with missiles. In naval missile warfare, missiles will be launched from aircraft, submarines, ships and land, but all analyses and wisdom indicate that a composite force will be required. The Soviets have explicitly developed such a coordinated composite force. Surface ships are, and will continue to be, an integral and important part of our composite forces because of on-station endurance, capacity for battle control, and size for carrying diverse and large weapons magazines.

The current Surface Missile Fleet is the main take-off resource for our advances in the new era of missile warfare at sea. The resource is tangible in men, ships, industries, and shore support elements. Even more important, the resource is intangible in experience and know-how and understanding.

Although much has been accomplished, the challenge to apply our growing technology to missileery is ever greater. No end is in prospect. With a formidable opposing navy challenging our power at the very frontiers of missile system technology, progress is urgent. It is truly a technological race.

Our plans must be basic and stable, distilled from the lessons of history. An innovative reach for the right extensions of capability can only be based on forward-looking technical expertise. From the beginning of the missile era, members of the Applied Physics Laboratory have provided the needed forward looking technical expertise for the Navy's missile program. While the magnitude and importance of APL's contributions to our nation's security cannot be over-emphasized, they are shadowed by the experience, know-how and understanding demanded for the future.

Sustaining that security for future generations will require the application of an even greater effort than that of the past four decades. We stand at the dawn of an era in which all the expertise that the nation can muster will be demanded if we are to successfully meet the challenges which the future holds. I fully expect to see the Laboratory continue to provide the technical leadership necessary to maintain our technological lead for naval war at sea.

In a unique way, the Applied Physics Laboratory can speak both to the history and the latest developments. This issue of the Technical Digest is a timely summary of topics now shaping Navy thinking and planning. After a useful bow and reflective salute to the past, the main emphasis is on looking ahead -- as we must.

W. E. MEYER
Project Manager
AEGIS Shipbuilding