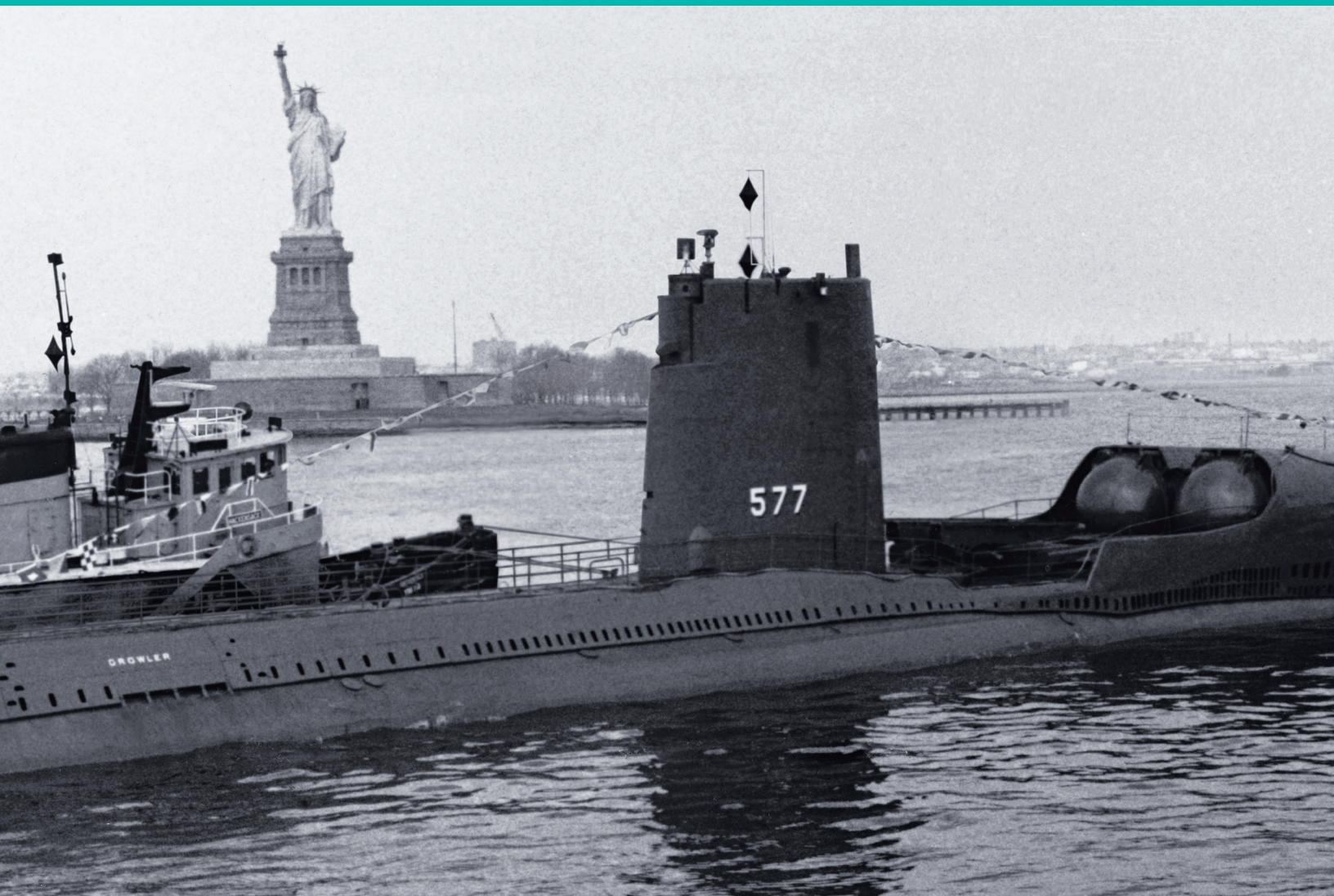
INTREPID MUSEUM

BE CURIOUS. BE INSPIRED. BE INTREPID.

A VIEW FROM THE DEEP

EDUCATOR'S GUIDE

Understanding and Teaching the Exhibition



ESSENTIAL QUESTIONS

Use the Essential Questions below to connect the themes of the exhibition to your curriculum. Identify key points that you would like students to learn. Text in blue corresponds to different sections in the exhibition. Text in green refers to key topics addressed in this exhibition. Definitions are provided in the Key Topics section of this Educator's Guide.

What factors led to the Cold War? Was it inevitable?

The Cold War

After World War II, the world was divided around two centers of power: the United States and the Soviet Union. Both countries emerged from the war with great military might and strong economies. And both saw dangerous lessons for their future safety and security.

Shifting alliances and the rapid development of new technology, including nuclear weapons, reshaped the map of military and political power in the Cold War. The large oceans that had been the United States' best defensive resource became a new battleground.

The destructive power of nuclear weapons appeared to make outright confrontation between the United States and the Soviet Union impossible. Any large-scale conflict would be mutually devastating. Instead, the Cold War was a war of ideas and diplomacy, of spies and subterfuge, of threats and restraint, with both sides preparing for a nuclear war that they hoped would never come.

What role did nuclear weapons play in the Cold War?

The Bomb

Before dawn on July 16, 1945, American scientists and military personnel gathered in the New Mexico desert to witness the first test of their top-secret work, an effort known as the Manhattan Project. At 5:29 a.m., their "gadget" exploded with a blinding flash of light, a searing ball of fire and a towering mushroom cloud.

A few weeks later, the new weapon made its public debut. United States bombers dropped atomic bombs on two Japanese cities, Hiroshima and Nagasaki. The tremendous blast, heat and radiation effects of the weapons killed and injured hundreds of thousands of people. The bombs were widely credited with ending World War II and ushering in a new atomic age.

Not If but When

In the years after Hiroshima and Nagasaki, the American public was inundated with discussions of the future "push-button" war, long before the technologies were ready for use. Newspapers, magazines, films and newsreels depicted powerful new weapons and their potential impact.

The stakes of the race for weapons technology were high: the world might, at any time, erupt into a third world war. The public understood that nuclear weapons might be used in such a war and that the effects would be unprecedented. Many wondered whether civilization, or humanity itself, could survive such a conflict.

Throughout the Cold War, especially the period in which *Growler* was created and deployed, the question was often not if nuclear war might happen, but when.

Regulus and Deterrence

Once the Soviet Union acquired its own atomic bomb in 1949, strategists began to articulate a new role of nuclear weapons in the Cold War. They called this strategy deterrence.

The basic idea of deterrence is simple: if two countries have the ability to quickly destroy one another and no way to defend against the attack, then they will both be deterred from attacking in the first place.

For deterrence to work, the threat must be credible. The potential enemy must believe that if it provoked a full-scale war, the reply would be swift and terrible. Submarines like *Growler* were meant to bolster the credibility of an American attack: hidden and mobile, they were unlikely to be destroyed in a surprise strike against the United States.

How did the Cold War affect the United States at home?

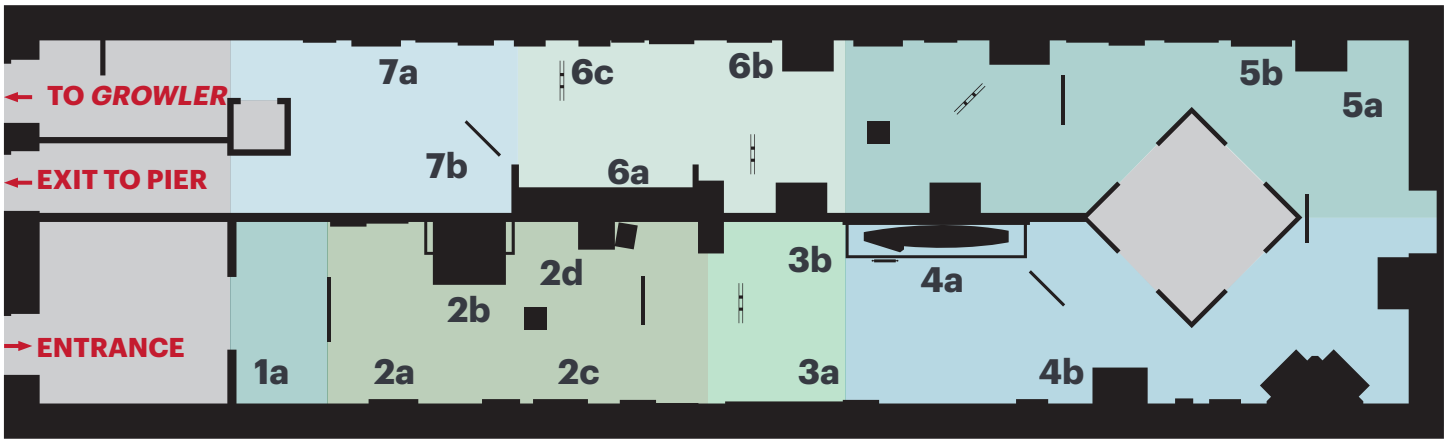
Preparing for the Unthinkable

The fear of nuclear war was extremely high in the late 1950s and early 1960s, as powerful new weapons moved from concept to reality.

Any nuclear attack against a major city could kill or seriously injure millions of people. If many cities were attacked, it could cripple a state. The U.S. government initiated public education programs aimed at reducing casualties caused by the blast and fire effects of a nuclear weapon. It designated spaces in buildings as shelter from radioactive fallout. It also encouraged individuals to build and stock their own personal shelters.

A *Growler* crewmember takes some time to relax.
Collection of the Intrepid Museum. Gift of Al Odette. P2016.71.168.

EXHIBITION MAP



1. Introduction

1a. Exhibition Introduction (text panel)

2. The Atomic Age

2a. The First Atomic Explosion (video)
2b. Animated Cold War Map
2c. *Life* Magazine: A Future of War
2d. *Duck and Cover* Cartoon

3. A New Navy for the Nuclear Age

3a. New Naval Weapons for the Cold War (timeline)
3b. Atomic Adventure Poster

4. A New Weapon

4a. Inside Regulus (interactive)
4b. The Navy's First Missile Submarines (text panel)

5. A Secret Mission

5a. Editorial Cartoon
5b. Regulus's Destructive Power (interactive map)

6. Life on Patrol

6a. Sonar Interactive
6b. Cuban Missile Crisis (text panel)
6c. Letter from Commanding Officer

7. The Triad Emerges

7a. Launching Polaris (video)
7b. The Triad Graphic

EXTENSION ACTIVITIES

- Students may write down observations and questions as they walk through the exhibition. Students may then use their notes during a discussion of the question "Is the strategy of deterrence the most effective method of preventing nuclear war?" or "Was the Cold War inevitable?"
- Connect the exhibition to current geopolitical events to determine how the Cold War has affected the world today. Students may collect newspaper articles and other media to examine relations between Cold War countries today and present their findings in small groups.
- Ask students to write a journal entry in the perspective of someone living in the United States during the Cold War. How might the American people feel about their security during this time? Students can reference specific events discussed in the exhibition in their journal entries.

Collection of the Intrepid Museum 2017.27.01a-b

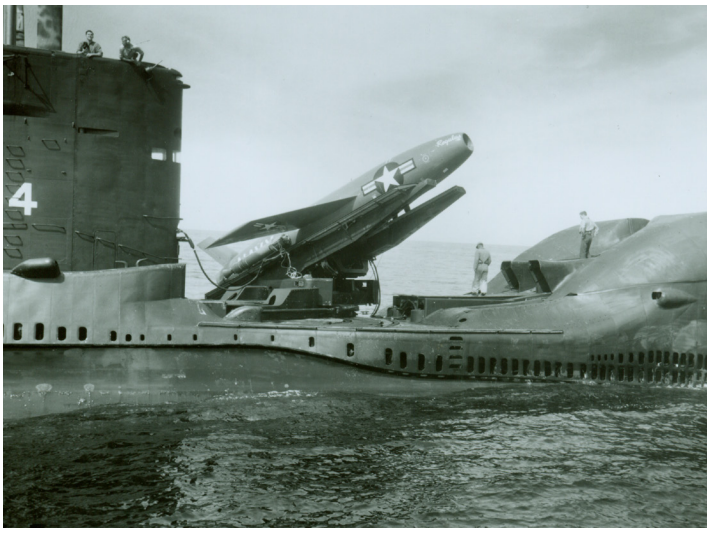
TEACHING THE EXHIBITION

1. Introduction

1a. Exhibition Introduction (text panel)

In this exhibition, we will discover how the United States became involved in the war, what role USS *Growler* played in preventing nuclear war, and how the Cold War affected the lives of the men on board *Growler* and the people they left behind.

Students can discuss what they already know about the Cold War and read the text panel to identify the role of USS *Growler* during the Cold War.



The crew of SSG-574 USS *Grayback* readies a Regulus I missile for launch. Collection of the Intrepid Museum. P00.2013.01.591.

2. The Atomic Age

2a. The First Atomic Explosion (video)

The development of a potent new weapon—the atomic bomb—introduced terrifying possibilities for future warfare. This video shows the test of the first atomic bomb, code-named Trinity.

Students can discuss how a weapon like this could change the outcome of a war.

2b. Animated Cold War Map

After World War II, the world was divided around two centers of power: the United States and the Soviet Union. Both countries emerged from the war with great military might and strong economies. Shifting alliances and the rapid development of new technology, including nuclear weapons, reshaped the map of military and political power in the Cold War.

Have students observe the changes on the map and identify how the geopolitical world changed over time.

2c. *Life* Magazine: A Future of War

This issue of *Life magazine* from November 1945—just months after the end of World War

II—predicted a dreadful future of war, drawing upon military and scientific estimates of future technological developments. Throughout the Cold War, especially the period in which *Growler* was created and deployed, the question was often not if nuclear war might happen, but when.

Students can discuss why the public lived in fear of nuclear weapons or how this fear affected life in the United States.

2d. Duck and Cover Cartoon

The fear of nuclear war was extremely high in the late 1950s and early 1960s, as powerful new weapons moved from concept to reality. The U.S. government initiated public education programs aimed at reducing casualties caused by the blast and fire effects of a nuclear weapon.

Have students interpret the cartoon and discuss why images like this were produced.

3. A New Navy for the Nuclear Age

3a. New Naval Weapons for the Cold War

The atomic bomb sparked a new era of military technology and strategy. The U.S. Navy, as did its Soviet counterpart, raced to develop sea-based atomic weapons. This timeline situates *Growler* among other technological developments of the early Cold War.

Have students discuss why the U.S. Navy decided to develop sea-based atomic weapons.

3b. Atomic Adventure Poster

The Cold War demanded a new type of navy, one suited for the atomic age. Some men opted to volunteer rather than wait to be drafted. To draw men to operate new submarines and missiles, some Cold War recruiting posters showcased the submarine service, such as this 1956 poster featuring the nuclear-powered USS *Nautilus*.

Collection of the Intrepid Museum 2018.10

Ask students how this poster encouraged Americans to join the Navy.

4. A New Weapon

4a. Inside Regulus (Interactive)

The first generation of nuclear-missile submarines, including *Growler*, emerged in the late 1950s. They combined three game-changing technologies: the atomic bomb, the missile and the submarine. From the start, the Navy considered the first missile submarines to be a temporary solution.

Have students read the text panel and identify why the first generation of nuclear submarines was considered a temporary solution.

4b. The Navy's First Missile Submarines

When launching a Regulus missile from a submarine became a possibility, the Navy did not yet have any submarines specifically designed for launching missiles. *Growler* was originally planned as an attack submarine, but the Navy converted it to the Regulus mission. As a result, *Growler*'s design involved a number of compromises that made it a functional—but far from ideal—platform for launching nuclear missiles.

Students can explore this area of the exhibition and identify challenges *Growler* crew members experienced while living on the submarine.

5. A Secret Mission

5a. Editorial Cartoon

Once the Soviet Union acquired its own atomic bomb in 1949, strategists began to articulate a new role of nuclear weapons in the Cold War. They called this strategy deterrence. For deterrence to work, the potential enemy must believe that if it started a full-scale war, the reply would be swift and terrible.

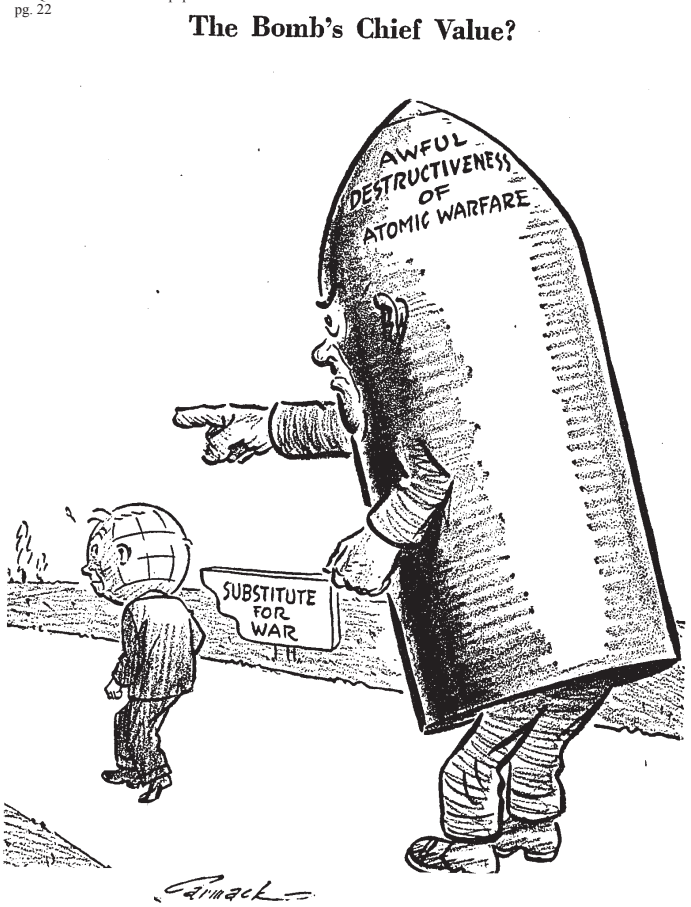
Have students determine what the cartoon shows. How could a Regulus missile deter the Soviet Union from using nuclear weapons against the United States?

5b. Regulus's Destructive Power **(interactive map)**

In spite of its limitations, the Navy's Regulus missile was a devastating weapon that could destroy its target. Use the screen to explore the potential impact of Regulus.

Students can discuss the damage Regulus could potentially cause.

Editorial Cartoon 1 -- No Title
The Christian Science Monitor (1908-Current file); Nov 16, 1954;
ProQuest Historical Newspapers: The Christian Science Monitor
pg. 22



6. Life on Patrol

6a. Sonar Interactive

On current submarines, sonar equipment can analyze and identify underwater sounds. During *Growler*'s period of service, highly trained sonarmen distinguished between friendly and enemy vessels with very little help from their equipment.

Students can discuss the pressures on the sonar men in *Growler*'s crew.

6b. Cuban Missile Crisis **(text panel)**

On October 14, 1962, an American U-2 spy plane captured photographs of Soviet missile sites being built in Cuba, just off the U.S. coast. This discovery

An unarmed Trident II D5 missile launches from the *Ohio*-class fleet ballistic-missile submarine USS *Maryland* (SSBN 738) off the coast of Florida on August 30, 2016. U.S. Navy photo.

set off the most dangerous confrontation between the United States and the Soviet Union—the Cuban Missile Crisis—the closest the two powers came to nuclear war. *Growler* was in Pearl Harbor during the crisis. The commanding officer of *Grayback*, John J. Ekelund, describes being on the submarine during the crisis.

Have students read John J. Ekelund's description of being on a submarine during the Cuban Missile Crisis.

6c. Letter from Commanding Officer

The Navy expected discretion from families and crew members alike. *Growler* commanding officer Donald Henderson wrote to the crew's wives before a deterrent patrol in 1962. Henderson repeatedly—reassuringly—describes the deployment as a "training mission." He does not reveal that *Growler* in fact would be patrolling near the Russian coast.

Have students read his letter. Students can discuss why the commanding officer uses the phrase "silent service" in his letter to the wives of *Growler* crew members.

7. The Triad Emerges

7a. Launching Polaris (video)

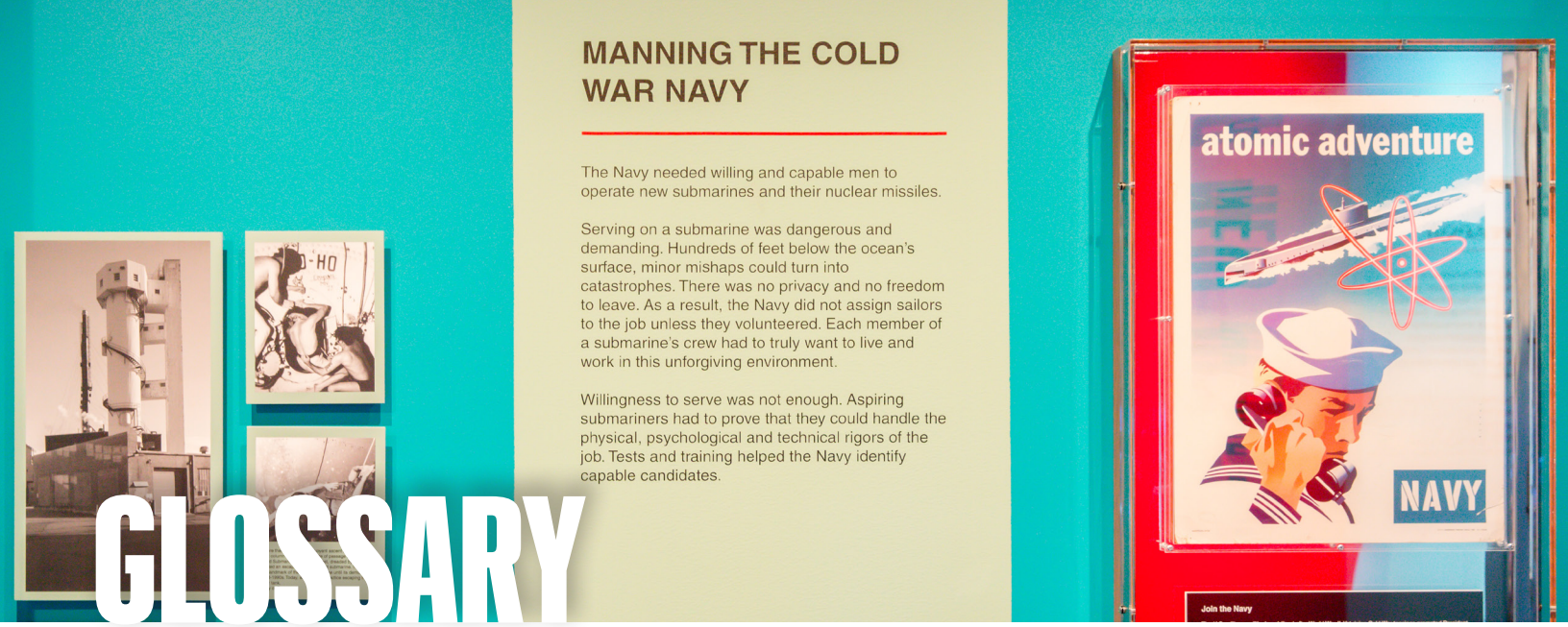
The Navy began to seek out the next generation of missiles in 1955, the same year Regulus entered into service on board surface ships. By 1956, the Navy contracted with Lockheed to develop a submarine-launched ballistic missile with a thermonuclear warhead. Named Polaris, the missile had a range over 10 times farther than Regulus and could be launched while the submarine was underwater.

Have students discuss why Polaris made the Regulus missile obsolete.

7b. The Triad Graphic

Growler and the other Regulus submarines were the first step in the naval leg of the American nuclear triad. The triad relies on three different methods of delivering nuclear weapons. Each leg of the triad, in theory, provides a different capability and deters American adversaries from attempting a first strike.

Have students analyze the graphic and discuss how each part of the nuclear triad deters American adversaries from attempting a first strike.



GLOSSARY

World War II: World War II was a global war that lasted from 1939 to 1945 and changed the political alignment and social structure of the world. The United States and the Soviet Union both emerged from the war with great military might, strong economies and the goal of increasing their influence around the globe. In addition, the development and use of atomic bombs during World War II led to both countries preparing for the possibility of a nuclear war that they hoped would never come.

Cold War: A period of tension following World War II between the United States and its allies and the Soviet Union and its allies. The destructive power of nuclear weapons appeared to make outright confrontation between the United States and the Soviet Union impossible. Any large-scale conflict would be mutually devastating. Instead, the Cold War was a war of ideas and diplomacy, of spies and subterfuge, of threats and restraint.

Nuclear War: As powerful new weapons moved from concept to reality, the fear of nuclear war increased. It was especially high in the late 1950s and early 1960s, the period of *Growler*'s service. Any nuclear attack against a major city could kill or seriously injure millions of people. If many cities were attacked, it could cripple a state. If a country with access to nuclear weapons were attacked, their retaliation could lead to global annihilation.

Deterrence: Deterrence is using fear of retaliation as a strategy for discouraging nuclear attack. If two countries have the ability to quickly destroy one another and no way to defend against the attack, then they will both be deterred from attacking in the first place.

USS *Growler*: Between 1960 and 1964, the submarine *Growler* sat hidden in the frigid waters off the coast of Russia. Its crew of 90 men, all volunteers, waited for a signal to draw and fire their nuclear-tipped missiles named Regulus. One Regulus missile could flatten a Soviet military base. However, the purpose of these submarine patrols was to deter a nuclear war, not start one.

BEFORE YOU ARRIVE

Plan Your Visit

For information about reservations, transportation and lunchrooms, visit our School Programs FAQ page.

intrepidmuseum.org/plan-your-visit/group-visits/field-trips

You can also contact us:
groupsales@intrepidmuseum.org
Phone: **646-381-5010**

Read the Essential Questions to see how themes in our exhibition connect to your curriculum.

Review the Teaching in the Exhibition section to gain an idea of which objects best fit the needs of your class.

Decide how your class will explore the exhibition:

- You and your chaperones can facilitate the visit using the Teaching in the Exhibition section.
- Students can use the Map of the Exhibition to explore the exhibition on their own or in small groups.

New York City Scope and Sequence

8th Grade

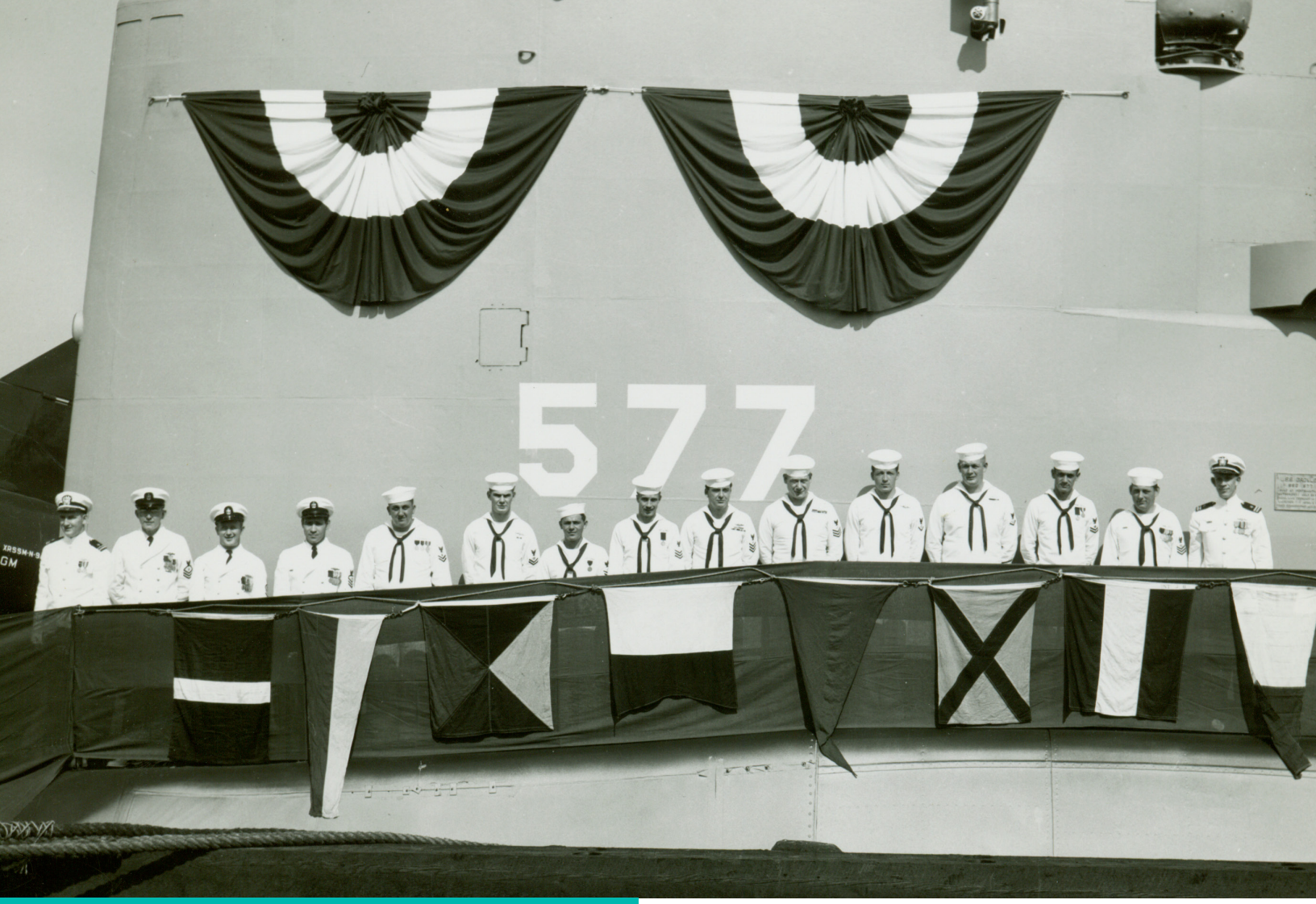
- 8.7a Competing Superpowers
- 8.7b United States Post-War Foreign & Domestic Policy

10th Grade

- 10.6a Cold War Balance of Power (1945–1991CE)
- 10.6b Cold War Confrontations and Attempts at Peace

11th Grade

- 11.9a Ideological Differences between the United States and the Soviet Union
- 11.9b Nuclear Arms Race



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A View from the Deep: The Submarine Growler & the Cold War is supported in part by public funds from the Institute of Museum and Library Services. Rehabilitation of *Growler* was supported in part by National Maritime Heritage Grant funding from the National Park Service, U.S. Department of the Interior, administered by the NYS Office of Parks, Recreation and Historic Preservation. The oral histories included in the exhibition are part of the Intrepid Museum's Oral History Project, which is generously supported by James L. Nederlander.