

Tugboating on Puget Sound: New Interpretation for the *Arthur Foss*

Diana Hennick

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Abstract

This thesis project created an interpretation plan for the historic wooden tugboat *Arthur Foss*. The tug's owner, Northwest Seaport, is one of several maritime heritage organizations providing educational programming at Seattle's Lake Union Park. While the tug is used for several public programs, Northwest Seaport hoped to add formal docent tours and museum interpretation

Lake Union Park has long been a center for maritime heritage in Seattle. Several formal studies have recommended that the *Arthur Foss* and other large museum ships be formally interpreted, but provided no guidance on how this interpretation should be created. This project combined methods taken from museum exhibition planning guides and a model used successfully at another maritime museum to create interpretation for the *Arthur Foss*. Depending on its success once implemented, the process described here may be used to interpret other museum ships at Lake Union Park and elsewhere.

The interpretation plan for the *Arthur Foss* has three components: a script for exhibit signs, an outline for a guided tour, and a background document to train docents. It focuses on "typical" activity aboard Puget Sound tugboats prior to 1960, using the *Arthur Foss* as both museum object and setting. It also shares the tug's own unique history as a working vessel that spent 80 years towing on Puget Sound and the Pacific Ocean.

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Preface

I grew up listening to my parents' sea stories on car trips and around the family dinner table. My mother's story of driving a research launch through ice floes and my father's story of answering a swim call in the Bering Sea are still interesting, and touring their ships let me envision voyaging to Alaska and beyond. The National Oceanic and Atmospheric Administration's Lake Union docks, lined with the graceful white research vessels that my parents served on, are landmarks in my early map of the city. Welcoming my father home from sea on these docks is a cherished childhood memory.

Later, many of the great NOAA ships were decommissioned and converted to marina breakwaters or private yachts. Seeing the NOAA docks standing nearly empty even before a fire destroyed them in 2006 fills me with a sense of loss. Though NOAA provides an extensive on-line photo gallery of its research vessels and their voyages, these photographs are not the same as standing aboard the vessels themselves. Seeing the *NOS Surveyor* mothballed and rusting in Tacoma made me realize how easily these tangible representations of our maritime heritage are lost.

When Northwest Seaport asked me to create an interpretation plan for the *Arthur Foss*, I viewed it as a chance to find and share sea stories about another facet of maritime culture. Had I realized then how few published sources of information about tugboating there are, I may have reacted differently, but the

opportunity to combine my passion for historic ships with my museology studies was too exciting to pass up. I hope that the product and findings of this thesis project will benefit both of these professional interests.

Acknowledgements

At the beginning of this list of individuals to acknowledge are my parents Doug Hennick and Kathleen McKoon-Hennick and my grandmother Erna Hennick. They have provided continual support and encouragement for everything worthwhile that I have ever done.

My partner Mike St. Pierre is next, for his continuing tolerance of museums and tugboats during my graduate school career. He also has my eternal gratitude for taking the time to painstakingly read and edit every word of this thesis project.

The three individuals who sat on my thesis advisory committee have my thanks: Shannon Fitzgerald of Northwest Seaport, Wilson O'Donnell of the University of Washington's Graduate Program in Museology, and Bruce Hevly of the Department of History provided advice and support in completing this project.

My classmates in the Museology Program also deserve acknowledgement, especially Lynn Bethke and Dawn Roberts for creating a thesis support group that helped me keep going despite many mid-quarter blues. Rina Luzius, who graduated in the class before mine, provided both emotional support and an outstanding example of a successful thesis project that inspired me at all stages of my own project.

Pat Hartle of Northwest Seaport helped comb through the organization's archives and provide information about the *Arthur Foss* and its other vessels.

Mary Kline Rose and Mike Foley spoke about the *Arthur Foss* as a heritage vessel in the 1970s and '80s, Karl House provided invaluable information about historic Puget Sound tugboats, and Adrian Lipp was always ready to talk about the intricacies of marine diesel engines. Ray Ashley of the San Diego Maritime Museum provided the model used for this project, and Paul F. Johnston of the National Museum of American History inspired and cultivated my interest in maritime museology.

The tugboaters who served on the *Arthur Foss* during her working career and the volunteers who work on her as a heritage vessel also deserve acknowledgement. Their efforts have helped keep the *Arthur* “alive and well” beyond her 100th birthday.

Finally, I would like to remember the *Justine Foss* and her crew, who were not as fortunate as the *Arthur*.

Dedication

To Gramma and Grampa, for teaching me to follow my dreams.

Introduction

The purpose of this thesis project is to create an interpretation plan for the historic tugboat *Arthur Foss*. Owned by the non-profit heritage group Northwest Seaport, the tugboat is now a museum ship. It is moored at Seattle's Lake Union Park with other historic ships and is open to the public depending on volunteer availability. While these volunteers give engaging tours and some signage is provided aboard, the tug lacks a formal, structured interpretation plan.¹

Increased community interest in maritime heritage programming at Lake Union Park² led Northwest Seaport to make an interpretation plan for the *Arthur Foss* a priority. In keeping with the rising formality of interpretation at the park, the organization decided that formal museum standards should be used to create a docent tour program and exhibit signs for the tugboat.³

This thesis project uses modern, professional museum standards to create an interpretation plan for the *Arthur Foss*. This plan has three components: a script for exhibit signs to be placed onboard the tugboat, an outline for a guided tour, and a background document to train docents. The project focuses on sharing the history of tugboating on Puget Sound using the *Arthur Foss* as both museum object and setting. The steps used to create this interpretation may also be used as a model for interpreting other historic ships.

¹ Shannon Fitzgerald, (trustee, Northwest Seaport), in discussion with the author, April 2007.

² Palsson, *Northwest Seaport 2006 Annual Report*.

³ Shannon Fitzgerald, April 2007.

Methodology

This thesis project used a combination of methods to create an interpretation plan for the *Arthur Foss*. First, print sources about exhibit planning and museum education provided a theoretical foundation. Second, formal recommendations made to Northwest Seaport by the director of a prominent maritime museum provided a guide specific to the *Arthur Foss*. Third, published sources of information about Puget Sound tugboats provided the information necessary to create accurate interpretation for the tug. Fourth, focus groups provided insight into the conceptual areas to address. Finally, informal interviews with individuals knowledgeable in tugboating history provided the remaining information needed for the interpretation plan.

Sources

Below are descriptions of the main sources used in creating the new interpretation plan for the *Arthur Foss*.

Museum Exhibit & Education Sources

David Dean's *Museum Exhibition: Theory and Practice* outlines a standard exhibit planning process from concept to opening.

Beverly Serrell's *Exhibit Labels: An Interpretive Approach* provides invaluable guidelines, suggestions, and examples of how to write effective museum labels and exhibit text.

Barry Lord and Gail Dexter Lord's exhaustive *Manual of Museum Exhibitions* provides conceptual and practical guidance in planning and creating museum exhibits.

John Falk and Lynn Dierking provide a comprehensive account of the strength of museum education in *Learning from Museums*.

George Hein's "The Constructivist Museum" in *The Educational Role of the Museum*, edited by Eilean Hooper-Greenhill, gives a theoretical explanation of how museums should strive to educate visitors.

The anthology *Transforming Practice: Selections from the Journal of Museum Education 1992-1999*, edited by Joanne S. Hirsch and Lois H. Silverman, provides articles describing key museum education strategies. Two articles cited specifically in this project are Kodi R. Jeffery's "Constructivism in Museums: How Museums Create Meaningful Learning Environments" and Signe Hanson's "Exhibitions as Educators; or, The Mundane and Magnificent Art of Stringing Beads."

Recommendations for Interpreting the *Arthur Foss*

There is a lack of peer-reviewed articles and published information about interpreting historic ships and museum vessels. As part of a Transportation Enhancement Act planning grant administered by the Center for Wooden Boats

to create a master interpretation for maritime heritage at Lake Union Park, Northwest Seaport selected Ray Ashley, Executive Director of the San Diego Maritime Museum, as a consultant. Ashley was charged with studying and making recommendations for how to interpret the *Arthur Foss* and four other historic vessels. While his final report was not released at the time this project was completed, Ashley visited Seattle in November of 2006 and March of 2007, and was available by phone for further discussion of his recommendations.

Tugboat Sources

There is no definitive published work about tugboating in Puget Sound. Most existing publications focus on specific vessels or individuals, rather than giving basic information common to all tugboats. There are, however, a variety of books and documentaries that describe different aspects of tugboating that proved very useful to this thesis project.

Two 1950s publications, Gordon Newell and Joe Williamson's *Pacific Tugboats: Parade of Tugs, Ships, and Men*, and Ralph W. Andrews and Harry A. Kirwin's *This was Seafaring* contain historic photographs and brief descriptions of Puget Sound tugboats. While these books show their age and audience (individuals already familiar with tugboats and maritime history), they are nonetheless valuable.

Michael Skalley's *Foss: Ninety Years of Towboating* provides a comprehensive historical account of the Foss Company and its vessels, including the *Arthur Foss*.

Helen Leber's *Northwest Tugboat Captain: The Life & Times of Captain Martin Guchee* gives the life story of a notable Puget Sound tugboat captain from teenage deckhand to distinguished retirement. In addition to being an excellent oral-history account of old-time tugboating, Captain Guchee actually captained the *Arthur Foss* in the 1930s and related stories of his time aboard.

Doreen Armitage's *From The Wheelhouse* contains detailed oral histories about tugboating on British Columbia's Fraser River and the Strait of Georgia. As this area is only 100 miles north of Puget Sound, the first-person accounts are similar to tugboating in the subject place. More importantly, the extensive transcribed oral histories provide the descriptions of daily life and routine towing jobs missing from the above sources.

Virginia Thorndike's *On Tugboats*, while mostly specific to the East Coast of the United States, provides a chapter titled "Tugboats 101" that gives a general overview missing from many of the Puget Sound-specific sources.

While not directly related to tugboats, Nigel Calder's now-classic textbook *Marine Diesel Engines: Maintenance, Troubleshooting, and Repair* gives easy-to-understand information about diesel engines.

Exploration Northwest, a KOMO Television series written and narrated by noted journalist Don McCune, produced three, 30-minute episodes about tugboating: "Puget Sound Old Tugboats" in 1965, "Puget Sound Tugboats" in 1979, and "Tugboating the Aleutians" in 1981. These documentaries include interviews with crew members and footage of towing on Puget Sound.

Finally, the 1934 Metro-Goldwyn-Mayer motion picture “Tugboat Annie,” while containing numerous historical inaccuracies, captures the look and “feel” of tugboating in 1930s Seattle. It also proved valuable for eliciting responses from the focus groups described below.

While these published sources provide the foundation for the research behind this project, they do not give a satisfactorily complete account of tugboats on Puget Sound before 1960. To fill in the gaps, historian and former Foss Company deckhand Karl House gave his time and knowledge in a series of interviews. While these interviews were conducted informally, they provided invaluable information that complements the published material available.

Other individuals involved with both the *Arthur Foss* and Northwest Seaport also contributed information in informal interviews. Northwest Seaport trustee Pat Hartle, former director Mary Kline Rose, and former volunteer Mike Foley helped create a detailed history of both the tug and the organization. Professional marine engineer and diesel mechanic Adrian Lipp provided in-depth information about the *Arthur Foss*'s antique diesel engine.

Focus Group Responses

In an effort to make the interpretation plan relevant to a general audience, this thesis project used small focus groups to determine what aspects of tugboating on Puget Sound should receive attention. These focus groups are described in greater detail in the *Product* section of this project.

Limitations

The goal of this project was to create the written content of an interpretation plan for the *Arthur Foss*. As such, it has several limitations. First, there are limitations in the scope and sources of research used to create the interpretation. Second, there are limitations in the project design in order to focus efforts on creating meaningful content.

Research Limitations

There is, at this time, a lack of published, scholarly sources of historical information on tugboating on Puget Sound. As such, the interpretation is limited in focus to topics that could be addressed using the existing sources.

Second, this project did not study the numerous other historic ships with museum interpretation in the United States and elsewhere. While some of these interpretations may be successful and worth emulating, the models used to create the interpretation have not been published or otherwise made available from a distance. As it was beyond the scope and means of this project to travel to other sites of historic ship interpretation for data-gathering purposes, this project has been created without studying existing interpretation elsewhere.

This limitation is partially compensated for by the recommendations from Ray Ashley, described in the *Product* section of this project.

Design Limitations

This project is limited to creating content for the interpretation plan and consists of three written documents. While there are other elements needed for a successful interpretation plan, the project's first priority is to discover, compile, and order the information necessary to give visitors a meaningful learning experience.

The project does not include any discussion of design elements or fabrication, other than to indicate the parts of the vessel that should contain exhibit signs. The project also does not include visual elements such as photographs, illustrations, or maps.

The project does not include the creation of a volunteer docent program for the *Arthur Foss*, though such a program is essential to the success of the interpretation plan.

Some of these omissions are further discussed in the *Recommendations* section of this project.

Definitions

Center for Wooden Boats, the – a non-profit maritime heritage and preservation organization located at Seattle's Lake Union Park that focuses on locally-designed wooden boats. The CWB has partnered with Northwest Seaport to create educational public programs onboard the *Arthur Foss*.

docent – a volunteer tour guide at museums and interpretation sites

dry-dock – a floating platform used to remove large ships and vessels from the water to perform maintenance and repairs

heritage vessel – a ship or boat used for educational or ceremonial programs

historic ship – a ship or boat of significant size and age

Lake Union Park – a city park located at the south end of Seattle's Lake Union on property formerly occupied by the Naval Reserve. Known previously as South Lake Union Park, this park has been the location of many maritime heritage preservation and interpretation activities since the 1980s.

museum ship – a ship or boat of significant size and age, owned by a non-profit organization, open to the public on some regular schedule, and used for educational programming

Northwest Seaport – a non-profit maritime heritage and preservation organization located at Seattle's Lake Union Park that owns five historic vessels, including the *Arthur Foss*, the lumber and fishing schooner *Wawona* and the lightship #83 *Relief*.

tugboat – a small boat (compared to its load) used to move vessels and other loads by pushing, pulling, or providing them with other powered assistance

Background & Context

The initial phase of this project was spent researching the background of the *Arthur Foss* and maritime heritage interpretation in Seattle. In addition to providing material for the interpretation plan, this research discovered and compiled a history of the *Arthur Foss* as a working vessel and museum ship.

The Historic Tugboat Arthur Foss

The towing industry is a vital part of the Pacific Northwest's economy, serving as an important link in regional and national transportation networks. Like tugboats everywhere, the towing industry grows and changes with the industries it assists. Puget Sound's tugboats and towing companies were created and expanded by participating in the timber industry, the shipping industry, and the 1898 Klondike Gold Rush.

Tugboats have since remained essential to industry in Puget Sound, taking on new jobs and incorporating new technologies. While tugs are still needed for towing logs to sawmills, they now escort petroleum tankers through the Strait of Juan de Fuca. By using the *Arthur Foss* as an example of Puget Sound tugboats, this project hopes to provide insight into working tugs past and present.

Arthur Foss as a Working Tugboat

The tugboat now known as the *Arthur Foss* was built in 1889 in Portland, Oregon, as the steam-powered tugboat *Wallowa*. The Oregon Railway and Navigation Company used the tug to assist sailing vessels into the Columbia River and upstream to Astoria.

In 1898, the *Wallowa* was sold and used to tow ships and barges from Puget Sound to St. Michael, Alaska, during the Klondike Gold Rush.¹ It was later sold to Puget Sound Sawmills, outfitted with a new steam engine, and used to tow log rafts from the Olympic Peninsula to sawmills on Puget Sound.²

In 1929, Foss Launch and Tug Company bought the now-old tug. A successful Tacoma-based towing company expanding into Seattle, Foss could barely purchase tugboats fast enough to service their contracts. As a Foss tug, the *Wallowa* continued to tow logs until 1933.³

In 1933, the *Wallowa* was leased to the Metro-Goldwyn-Mayer to film the motion picture "Tugboat Annie." Based on a series of short stories by Saturday Evening Post writer Norman Reilly Raine, the tug played Tugboat Annie Brennan's old steam tug *Narcissus*.⁴

Shortly after filming the movie, the Foss Company rebuilt the *Wallowa* from the waterline up. With new cabins and a 700 horsepower diesel engine, the tug was renamed *Arthur Foss* in honor of the company's president. Towing barges and other loads from Puget Sound to Oregon, California, and Alaska, the tug set

¹ Kline, *Arthur's Alive and Well at 92*, 15.

² Skalley, *Ninety Years of Towboating*, 72-73.

³ Kline, *Arthur's Alive and Well at 92*, 16.

⁴ Skalley, *Ninety Years of Towboating*, 73.

several speed records with its powerful engine.⁵ During this time, the *Arthur Foss* was also used in constructing two of the Puget Sounds notable landmarks. It towed barges used to construct the first Tacoma Narrows Bridge and helped test prototypes for the proposed Lake Washington floating bridge.⁶

In early 1941, the Pacific Naval Airbase Contractors group, a consortium building air bases on many Pacific islands, chartered the *Arthur* and several other Foss tugs. These tugs towed barges of construction material on regular routes between Hawaii and other islands. When the *Arthur Foss* left Wake Island in December of 1941, it became the last vessel to leave before the island fell to the invading Japanese navy. Its sister ship, the *Justine Foss*, was not so lucky. The Japanese captured the *Justine* and its crew; they later sunk the tug and executed the crew.⁷

After escaping Wake Island, the *Arthur* returned to towing barges for the Pacific Naval Airbase Contractors. However, by the end of World War II the tug was in Honolulu, sitting unused at the dock. While the exact reason for this is unknown, it is possible that its engine had broken and parts were not available to repair it. In order to return the tug to Puget Sound, the Foss Company loaded it into a floating dry-dock that could be towed back across the Pacific Ocean. However, during transit the *Arthur* fell out of the dry-dock's cradle, taking

⁵ Skalley, *Ninety Years of Towboating*, 73.

⁶ Leber, *Northwest Tugboat Captain*, 38.

⁷ Skalley, *Ninety Years of Towboating*, 74.

extensive damage to its port side. Repairing this damage took nearly a year, after which it re-entered service as a Foss tug in August 1948.⁸

After the advances in maritime technology during World War II, the *Arthur Foss* was surpassed in power by newer tugboats. The Foss Company purchased barely-used Navy tugboats with larger engines and faster hulls at surplus prices, using these new tugs for long-distance coastal towing and assigning the *Arthur* to log towing.⁹

Despite no longer being commercially competitive at its former duties, the *Arthur* was ideally suited for log towing. While its deep, narrow hull made maneuvering difficult, the same features allowed it to sustain the momentum needed for towing bulky log rafts.¹⁰ Its quiet engine and large living quarters also gave the tug a reputation among crews for being comfortable, a valuable characteristic on long, dull log tows. Paralleling its first jobs on Puget Sound, the *Arthur* finished its career towing logs from the Olympic Peninsula to saw mills in Port Angeles and Puget Sound. In 1964, it was renamed the *Theodore Foss*, while the name *Arthur Foss* went to a new Foss tug built especially for ocean towing.¹¹

In 1968, the *Theodore Foss* was permanently replaced by newer tugboats. Its last tow was on July 26, 1968, after which it sat unused at a Tacoma dock for almost two years. In 1970, the Foss Company donated the tug to the heritage

⁸ Skalley, *Ninety Years of Towboating*, 74.

⁹ Skalley, *Ninety Years of Towboating*, 74.

¹⁰ Karl House, (deckhand, Foss Tug & Launch Company [retired]), in discussion with the author, March 2007.

¹¹ Skalley, *Ninety Years of Towboating*, 75.

group Save Our Ships!, later to become Northwest Seaport, who renamed it *Arthur Foss* in honor of its distinguished career.¹²

Arthur Foss as a Heritage Vessel

The non-profit preservation and heritage group Save Our Ships! (S.O.S.) was founded in 1963 to preserve the Pacific schooner *Wawona*. In 1970, S.O.S. accepted the *Arthur Foss* from the Foss Company. Henry Foss, Arthur's younger brother, declared during a ceremony on Pier 57 that it was, "a privilege to contribute this historic tug as part of a maritime exhibit which shows promise of becoming the most diverse and comprehensive such display in the world."¹³ Despite this blessing, interpreting the *Arthur Foss* as a museum ship proved difficult. While the *Wawona's* open cargo space easily held displays of historic photographs and fishing tackle, the tug's small rooms and lack of volunteers prevented meaningful exhibits or other interpretation during its stay on the waterfront.¹⁴

By 1972, S.O.S. had changed its name to Northwest Seaport and acquired a third historic vessel, the Lightship #83 *Relief*. This new ship and the *Wawona* were open to the public as floating museum exhibits on Seattle's waterfront, leading Northwest Seaport to declare in a members' newsletter that they were, "getting a step closer to a Seattle Maritime Museum."

¹² Skalley, *Ninety Years of Towboating*, 75.

¹³ "Famed Tug Arthur Foss Donated to "Save Our Ships" Maritime Museum in Seattle." Date & publication unknown. Archival material, Northwest Seaport files.

¹⁴ Mary Kline Rose, (former director, Northwest Seaport), in discussion with the author, April 2007

While the *Wawona* and the *Relief* had their own plans and caretakers, the *Arthur Foss* remained unused. Fortunately for the tug, the current president of the Foss Company, Sid Campbell, sat on Northwest Seaport's Board of Directors. He made sure that the *Arthur Foss* remained in good condition, providing materials and volunteer labor from the Foss Company to clean, paint and varnish the tug. However, the tug lacked any interpretation or public programming for its first several years with Northwest Seaport.¹⁵

During this time, Northwest Seaport was focusing its efforts on securing permanent moorage for the ships. Locations on Lake Union and other places in Seattle were considered, but in 1973 Northwest Seaport moved its historic fleet to Kirkland, a town on the northern shore of Lake Washington.¹⁶ Billed as a "non-profit marine historical center,"¹⁷ the boats were open to the public on weekends and summer weekdays. However, the *Arthur* faced many of the same problems in Kirkland as it had on Seattle's waterfront, lacking formal interpretation or programming. While informal tours were available, the private dock prevented casual visitors from accessing the tug.¹⁸

Despite these barriers to interpretation, the move to Kirkland proved highly beneficial to the *Arthur Foss*. A group of teenagers "discovered" the tug and became dedicated volunteers. With the help of tugboaters from the Foss Company, they formed the core of a volunteer workforce that rehabilitated the tug

¹⁵ Mary Kline Rose, April 2007.

¹⁶ Kline, S.O.S., 13.

¹⁷ Northwest Seaport News, *Northwest Packet Newsletter*, May 1975.

¹⁸ Mary Kline Rose, April 2007

and returned it to operating condition.¹⁹ Between 1978 and 1980, volunteers dismantled and fixed the tug's diesel engine, which had not operated since the tug's retirement in 1970.²⁰

The rehabilitated *Arthur Foss* made its debut as the Guest of Honor at the 1981 Olympia Harbor Days festival,²¹ a tugboat-centric festival featuring public displays and tugboat races for both classic and modern tugs.²² As a retired tugboat, the *Arthur Foss* competed in the vintage class, described as more of a performance than a race. Of the handful of regulars in this class, however, the *Arthur* frequently came in first or second due to its long hull and powerful engine.²³ The *Arthur* participated in many of the tugboat races held at several Puget Sound-area festivals,²⁴ becoming popular with audiences at Harbor Days and other Puget Sound maritime festivals. As volunteers gained experience operating the tug, they gave informal tours at these events, showing guests around the tug and speaking of their time onboard and crew duties. While not planned or formalized, the public enjoyed these tours of an authentic working vessel.²⁵ In addition to serving as crew for the tug, volunteers continued to maintain the vessel and its engine.²⁶

¹⁹ Mary Kline Rose, April 2007.

²⁰ Bayless, *Arthur Foss*, 1981.

²¹ "Tug *Arthur Foss* Races at Olympia Harbor Days," *Marine Digest*, October 1981.

²² Olympia Harbor Days, "A Labor Day Tradition: 34 Years of Tugboats," South Sound Maritime Heritage Association, <http://www.harbordays.com/> (accessed April 6, 2007).

²³ Mike Foley, (former volunteer, Northwest Seaport), in discussion with the author, April 2007.

²⁴ Gordy Holt, "A War of Tugs: Boats Line Up for Traditional Race", *Seattle Post-Intelligencer*, May 14, 1986.

²⁵ Mary Kline Rose, April 2007.

²⁶ "Arthur Foss Report: A Very Busy Winter," *Portolan* (Northwest Seaport newsletter), 1983.

Starting in 1986, the *Arthur Foss* performed official ceremonial duties as well as participating in festivals and races. The tug represented the state of Washington at Vancouver's EXPO '86²⁷ and in 1984 voyaged to Juneau to celebrate Alaska's 25th anniversary of statehood.²⁸

In 1988, Northwest Seaport moved its heritage fleet, including the *Arthur Foss*, to the future site of Seattle's Lake Union Park. The organization announced a formal docent program for visitors to the tug,²⁹ but the interpretation remained relatively informal. Volunteer crew members continued to share their sea stories with visitors to the boat.³⁰

In 1989, the *Arthur Foss* gained several markers of recognition as a heritage vessel. The tugboat, the State of Washington, and the Foss Company all celebrated their centennial that year, and on April 11 the National Park Service officially declared the tugboat a National Historic Landmark.³¹ Signed proclamations from both the city of Seattle and the State of Washington declared April 22, 1989 "*Arthur Foss Day*" to "honor this historic tugboat's 100th birthday and encourage the people of our region to visit this historic tugboat and other historic vessels at Northwest Seaport and preserve our region's maritime heritage."

²⁷ Washington State Proclamation, 1986.

²⁸ Sandra McDonough, "Arthur Foss tug sets sail to familiar Alaskan waters." *Seattle Times*, August 18, 1984.

²⁹ Dick Lilly, "Historic Ships Home In On Lake Union," *Seattle Times*, December 9, 1988.

³⁰ Mike Foley, April 2007.

³¹ James Delgado, "Tugboat *Arthur Foss*, ex-Wallowa: National Historic Landmark Study," 2002. National Park Service, <http://www.cr.nps.gov/maritime/nhl/foss.htm> (accessed December 5, 2006).

This popularity as a traveling maritime attraction within Puget Sound continued throughout the 1990s, with volunteers maintaining and operating the tugboat.³² The *Arthur* remained a favorite in regional tugboat races³³ and maritime heritage festivals,³⁴ and a regional tugboat enthusiast described the tug as “a shining example of a maritime heritage project that has worked.”³⁵

Arthur Foss as a Classroom

At the end of the 1990s, twenty years as a heritage vessel began to limit the *Arthur Foss*'s effectiveness. Volunteer burnout meant the tug participated in fewer heritage events and festivals, while Northwest Seaport again faced a lack of permanent moorage space. The tug also needed more extensive repairs than volunteers could provide.³⁶

In 1999, Northwest Seaport partnered with the Bates Technical College in Tacoma, Washington to restore the *Arthur Foss*'s wooden *bulwarks*, low wooden railings.³⁷ Funded by a King County Landmarks Commission grant to preserve the region's heritage,³⁸ the tug spent several months in Tacoma as a floating classroom for boatbuilding students.³⁹

³² N.A. Foraker, to Northwest Seaport members, 1995.

³³ Charles E. Brown, "Tug, At 109, Out To Prove It Can Be The Fleetest In Fleet," *Seattle Times*, May 15, 1998.

³⁴ Travel & Outdoors, "Wooden Boat Festival In Salty Port Townsend," *Seattle Times*, September 5, 1997.

³⁵ Robin Paterson, to Northwest Seaport, June 9, 1996.

³⁶ Adrian Lipp, (marine engineer, Old Tacoma Marine), in discussion with the author, April 2007.

³⁷ Pat Hartle, (trustee, Northwest Seaport), in discussion with the author, March 2007.

³⁸ Kery Murakami, "\$2.1 Million Slated To Support Area's Cultural Projects," *Seattle Times*, April 6, 1998.

³⁹ Lynn Steinberg, "Keeping History Afloat: Preserving Old Boats is a Long and Costly Voyage," *Seattle Post-Intelligencer*, November 12, 1998.

Professional shipwright Mike Vlahovich supervised the work and found the *Arthur Foss* to be an excellent example of traditional shipbuilding techniques. Vlahovich reported that his students thoroughly enjoyed working on the tug, and that it provided “an ideal opportunity to pass on the skills and the stories of the [shipwright’s] culture.”⁴⁰

After the Bates project concluded, the *Arthur Foss* returned to Seattle where one major challenge to its long-term interpretation had been resolved. Part of the plan for a maritime cultural center at South Lake Union was realized in the form of permanent moorage for historic vessels. A coalition of maritime heritage groups called the Maritime Heritage Foundation raised funds and created plans for a heritage wharf beside the former Naval Reserve building.⁴¹ With additional funding from the City of Seattle and its parks department, new docks could accommodate the *Arthur Foss* and other ships.⁴²

Soon after, the tug received a *Save Our Treasures* grant from the President’s Committee on the Arts and the Humanities.⁴³ One of only two historic vessels to receive *Save Our Treasures* funding in 2002,⁴⁴ the grant paid for the materials and labor to replace rotted portions of the *Arthur Foss*’s deck. With the help of Northwest Seaport volunteers, the project was completed in 2004.⁴⁵

⁴⁰ Michael Vlahovich, (founding director, Coastal Heritage Alliance) e-mail message to author, April 2007.

⁴¹ Shannon Fitzgerald, April 2007.

⁴² Bob Young, "Board approves South Lake Union Park proposal," *Seattle Times*, July 12, 2003.

⁴³ John Zebrowski, "Historic preservation grant keeps tugboat afloat," *Seattle Times*, September 26, 2002.

⁴⁴ National Park Service. *2002 Save America’s Treasures Grants*.

⁴⁵ Northwest Seaport, *Restoration Final Report*.

Returning to the classroom model established by the partnership with Bates Technical College, Northwest Seaport partnered in 2005 with professional marine engineer and longtime Northwest Seaport volunteer Adrian Lipp to launch a course series designed to rehabilitate the *Arthur Foss's* antique engine. Following a ten-year restoration plan, members of the public helped to rehabilitate and restore the 1934 engine while learning skills applicable to any kind of diesel engine.⁴⁶ In its first year, the Diesel Engine Theory course cleaned and repaired the engine's inlet and exhaust valves. In 2006 participants focused on the engine's fuel injectors.⁴⁷

In early 2007, the City of Seattle formally broke ground at Lake Union Park, a municipal park with a strong emphasis on maritime heritage.⁴⁸ As one of four historic ships with permanent moorage at the park, the *Arthur Foss* is currently open to the public on an informal basis for tours and is used for the public programs described below.

Current Programming on the Arthur Foss

While lacking formal museum interpretation, the *Arthur Foss* is currently featured in a variety of public and educational programs. Northwest Seaport has partnered with other organizations to offer complementary programs at Lake Union Park.

⁴⁶ Adrian Lipp (marine engineer, Old Tacoma Marine), in discussion with the author, November 2006.

⁴⁷ Hennick, *Diesel Engine Theory*.

⁴⁸ Debera Carlton Harrell, "Groundbreaking set for today at Seattle's newest lakefront park," *Seattle Post-Intelligencer*, February 28, 2007.

Tugboat Story Hour is a twice-monthly program started in 2006 in partnership with the Center for Wooden Boats. During this program, children ages 2-5 listen to stories about tugboats and other ships. Tugboat Story Hours typically draw between four and 30 participants.

The *Experience Life Aboard the Arthur Foss* program is an opportunity for members of the public to stay overnight onboard the tug. Entering its second year, this program enjoyed success during the 2006 working season, attracting 21 participants in a total of 55 program days. While the Experience Life Aboard program currently offers an overnight stay and an informal tour, Northwest Seaport plans to develop it into a more comprehensive visitor experience.

In the *Engineer for a Day* program, members of the public tour the *Arthur Foss*, the fireboat *Duwamish*, the ferry *Virginia V*, and the Lightship #83 to learn about marine engines. Participants start the diesel engines onboard the tug and the fireboat, learn about steam engines on the lightship, then meet volunteer engineers onboard the *Virginia V* and observe its fully-functional steam engine. In its second year, the *Engineer for a Day* program currently runs twice annually and receives positive evaluations from course participants.

The *Diesel Engine Theory* course series mentioned previously is part of the ongoing rehabilitation of the *Arthur Foss's* historic engine. The 2007 course, which will focus on the engine's bearings, is the Diesel Engine Theory program's third year.

Northwest Seaport is also expanding its hands-on restoration workshops. During the summer of 2007, participants in a Hull Survey Class will work with a professional marine surveyor to create a formal condition report of the *Arthur Foss* while in dry dock. This condition report will be used both to create a detailed restoration plan, and to create new restoration workshops onboard the tug.

Maritime Heritage at Lake Union Park

Maritime preservation groups in Seattle and Puget Sound, including Northwest Seaport, have been planning a central site for maritime culture for more than three decades. Many of these plans have centered on Lake Union Park, the grounds of the former Naval Reserve that was given to the City of Seattle in 2000.

Several maritime groups have commissioned feasibility studies for such a cultural center, all of which include the interpretation of historic ships as a necessary component. These studies outline important elements to include when interpreting historic ships and explain how the interpretation should fit into a greater plan for celebrating maritime heritage at the park.

Despite identifying the need to interpret historic ships, including the *Arthur Foss*, these plans provide no models for *how* to accomplish this goal.

Plans for a Maritime Heritage Center

Member newsletters and documents in Northwest Seaport's archives from the 1970s include a short description of a proposed "Seaport Park" at South Lake

Union next to the Naval Reserve. The organization later moved its historic fleet to the site, but formal plans to interpret them were placed on hold in favor of preservation. While its plans were not implemented, the idea of a center for maritime culture at what is now Lake Union Park has endured and evolved.

In 1993, many of Seattle's maritime heritage groups formed an umbrella organization called the Maritime Heritage Foundation (MHF). Its mission was "to preserve and interpret the vessels, artifacts, and skills which constitute our maritime history," with a stated goal of creating a maritime heritage center at South Lake Union.⁴⁹

A feasibility study completed by the MHF in 1997 listed a variety of objectives that included: "acquire, preserve, and interpret historic vessels"; "interpret regional maritime heritage"; "present public programs on maritime history and industry"; and "operate MHC and the museum to high professional standards."⁵⁰

It also outlines a developmental concept for the park, explaining that "portside interpretation of these historic vessels can be accomplished with signage, dockside interpretive structures, and trained docents." While this report does not specifically discuss the *Arthur Foss*, it emphasizes the role of historic ships within the greater context of displays devoted to maritime industry and traditional shipbuilding.⁵¹

In 2001, the MHF produced a formal "Facility Integration Study" with the help of LORD Cultural Resources Planning and Management, Inc. The goal of this

⁴⁹ Maritime Heritage Foundation (MHF), *Feasibility Study*, 1.

⁵⁰ MHF, *Feasibility Study*, 70-71.

⁵¹ MHF, *Feasibility Study*, 73-74.

study was to be “a step toward the establishment of a maritime heritage park at South Lake Union in Seattle,” providing a comprehensive physical plan for the park.⁵²

This report also emphasized the need for a “flexible interpretative plan” that helps “[preserve] and [interpret] the region’s maritime heritage.”⁵³ Later in the report, this study proposed an “activities plan,” which placed an, “opportunity to tour the vessels in the company of a knowledgeable staff member or volunteer” at the top of the list of important Center activities.⁵⁴

This study also specifically addressed the *Arthur Foss* within the proposed park. It described the tugboat as possessing “a wonderful look of authenticity” that “[gives] a real sense of what it must have been like to live and work aboard the vessel at that time.” However, it does not give any guidance for interpreting the tug except to emphasize the importance of providing stories to contextualize the vessel within Pacific Northwest history.⁵⁵

The Maritime Heritage Foundation dissolved in 2003 due to financial setbacks, the inability to secure collaboration with the City of Seattle at the Lake Union Park property, and the nationwide economic recession that impacted nearly all museums and cultural groups.⁵⁶ While failing to create a permanent maritime heritage center, the MHF did raise funds and secure city permission for a heritage wharf for historic ships on the Lake Union Park property. After the

⁵² MHF, *Facility Integration Strategy*.

⁵³ MHF, *Facility Integration Strategy*, 11-12.

⁵⁴ MHF, *Facility Integration Strategy*, 34.

⁵⁵ MHF, *Facility Integration Strategy*, 17

⁵⁶ Bob Young, "Nautical museum group halts work," *Seattle Times*, May 30, 2003.

dissolution of the MHF, the city oversaw the construction of this wharf, which now serves as the permanent home for the *Arthur Foss* and three other historic ships.⁵⁷

Despite this setback, interest in creating maritime interpretation at South Lake Union remains strong.⁵⁸ The King County agency 4Culture held a Maritime Heritage Summit on May 7, 2004 to help reorganize the movement to create a maritime heritage center. This summit reaffirmed the importance of interpreting the historic ships at South Lake Union,⁵⁹ and launched a task force to further study the issues it identified.

In December of 2005, the Seattle/King County Task Force on Maritime Heritage released their report. It emphasized the importance of interpreting the historic ships, giving five long-term recommendations for “[revitalizing the] future for maritime heritage.” These recommendations addressed five specific areas: governance, physical site, funding, visibility, and education.⁶⁰

The task force defined education as “accessible, authentic educational experiences [that interpret] maritime themes past and present.” It analyzed the educational opportunities within Seattle’s maritime heritage community and reaffirmed the need to interpret the historic ships at South Lake Union.⁶¹

Lacking a Model for Historic Ship Interpretation

⁵⁷ Shannon Fitzgerald, April 2007.

⁵⁸ Jim Kelly, "Message on Maritime Heritage," *4Culture eNews*, September 2003.

⁵⁹ 4Culture, *Maritime Heritage Summit Report*.

⁶⁰ 4Culture, *Task Force Final Report*, 3.

⁶¹ 4Culture, *Task Force Final Report*, 16-17.

It is clear that there is consensus that museum interpretation of the historic ships at South Lake Union is needed. However, none of these studies and statements contain an interpretation plan or model for how to interpret these historic ships. They stress that the interpretation should “illustrate chosen themes,”⁶² “offer authentic educational experiences,”⁶³ and be “of interest not only to maritime history buffs,”⁶⁴ but provide no recommendations for how to create such interpretation.

There is one document that contains a detailed description of how to implement museum interpretation onboard the historic ferry *San Mateo*. However, this plan takes advantage of the open passenger spaces within the ferry, using them as museum galleries to illustrate maritime heritage with objects and labels.⁶⁵ Interpretation like this would be impractical for the *Arthur Foss*, with the tugboat’s small cabins and “claustrophobic nature.”⁶⁶ Additionally, part of the *Arthur’s* significance is as a working vessel. Adding museum fixtures such as display cases and large text panels would compromise the tug’s authentic appearance as a working vessel, identified as a crucial part of its significance.⁶⁷

These factors illustrate the need to create an interpretation plan for the *Arthur Foss*. Depending on the success of this interpretation plan, it may be used in the future as a model to interpret the other historic vessels at Lake Union Park.

⁶² 4Culture, *Maritime Heritage Summit Report*, 5.

⁶³ 4Culture, *Task Force Final Report*, 7.

⁶⁴ MHF, *Facility Integration Strategy*, 12.

⁶⁵ Kline, *Exhibition Development of the SS SAN MATEO*.

⁶⁶ MHF, *Facility Integration Strategy*, 17.

⁶⁷ Ray Ashley, (executive director, San Diego Maritime Museum), in discussion with the author, April 2007.

Product

The process for creating a new interpretation plan for the *Arthur Foss* combines ideas taken from contemporary museum exhibition guides with a model developed by Ray Ashley, Executive Director of the San Diego Maritime Museum. Ashley's model uses small focus groups to help historic ship interpretation address topics that visitors want to learn about. The process uses research compiled from published sources and informal interviews to write knowledgeably about the selected topics.

The results of this process are three products: text for the exhibit signs to be displayed on the *Arthur Foss*, a tour outline establishing the topics and order of formal guided tours of the tug, and a background document that contains the information necessary for guiding these tours and answering questions from visitors.

Process

There are no readily available, published guides to interpreting a historic ship. While numerous historic ships owned by museums and preservation groups have been interpreted for public display, these institutions have not made their models available through peer-reviewed articles or published books. Part of the project is creating a model that brings museum exhibition principles to interpretation for historic ships like the *Arthur Foss*.

Museum publications like Lord and Lord's exhaustive *Manual of Museum Exhibitions* provide models and suggestions for museum interpretation within a gallery or building dedicated to exhibitions. Exhibits created using these guidelines are able to plan for and control visitor flow, lighting, and other elements. In these exhibitions, designers and curators use carefully selected artifacts and labels to convey themes and stories to visitors.

While some historic ships can be treated like museum galleries, as illustrated by the interpretation plan for the historic ferry *San Mateo*,¹ tugboats like the *Arthur Foss* pose challenges to the formal museum interpretation described by Lord and Lord. The *Arthur Foss* has small rooms, narrow halls, and open-air spaces. There are no areas appropriate for artifact display cases or interactive stations, and little space for text panels. There is no way to control lighting or traffic flow to the degree desirable in formal museum exhibits. Additionally, a crucial element of the *Arthur Foss* is its authenticity as a working vessel. Placing standard museum exhibit elements such as individual labels or object display cases would compromise this authenticity and detract from visitor experience.²

Despite these difficulties, many principles from formal museum exhibition can be applied to creating an interpretation plan for the *Arthur Foss*. There are two main areas of formal museum interpretation that this project draws principles from: conceptual exhibit design and educational strategies.

¹ Kline, *Exhibition Development of the SS SAN MATEO*.

² Ray Ashley, April 2007.

Conceptual Exhibit Design

The principles of museum interpretation used in this project are taken from three sources: David Dean's *Museum Exhibition: Theory and Practice*, Lord and Lord's anthology *Manual of Museum Exhibitions*, and Beverly Serrell's *Exhibit Labels: an Interpretive Approach*.

The three key ideas from museum exhibit design used in this project are: creating the interpretation around a single big idea called a *concept*; writing brief, meaningful exhibit text; and consulting with audiences to determine the content to address.

An exhibit concept is a single idea that unifies the different elements of the interpretation. It is expressed in a sentence³ and that defines and motivates the exhibit.⁴ As it is primarily a tool for the exhibit development team, rather than a label for visitors, it must be clear but not necessarily simple.⁵ Even if visitors are unaware of the central concept or disagree with it, this big idea can still help visitors organize the information presented within the exhibit.⁶

Without this central concept, an exhibition can be confusing or intimidating to museum visitors. Such an exhibition may have too many labels and too many different ideas that do not clearly relate to each other. Visitors may find them

³ Serrell, *Exhibit Labels*, 1-9.

⁴ Lord & Lord, *Manual of Museum Exhibitions*, 346.

⁵ Serrell, *Exhibit Labels*, 2.

⁶ Jeffery. *Constructivism in Museums*, 216.

“hard to grasp” and will move through the exhibit quickly, missing information that exhibit developers attempted to impart.⁷

Serrell provides guidelines for writing exhibit text, positing that interpretive labels should be “useful and meaningful to visitors” and gives concrete suggestions on how to accomplish this goal. Among these suggestions are to use “information directly related to what visitors can see, feel, do, smell, or experience from where they are standing,” to vary the length of sentences, to use short paragraphs rather than large blocks of information, and to avoid metaphors.⁸ Serrell emphasizes that exhibit labels should be concise, using as few words as possible. She suggests taking into account the average reading speed and average amount of time visitors are expected to spend within a museum gallery when writing label text.⁹

A final idea drawn from formal museum interpretation is to consider the community that an exhibit hopes to attract. In addition to attempting to draw new audiences to museum exhibits, designers should consider what audiences want to know. According to Dean, “museum exhibitions ought to offer answers to the questions visitors want answered,” such as “how things work, how events occurred, and what people and the world were like long ago.”¹⁰

⁷ Serrell, *Exhibit Labels*, 7.

⁸ Serrell, *Exhibit Labels*, 83-94.

⁹ Serrell, *Exhibit Labels*, 125-126.

¹⁰ Dean, *Museum Exhibition*, 25.

Museum Education Strategies

The principles of museum education used here were taken from three sources: John Falk and Lynn Dierking's *Learning From Museums*, essays in Eilean Hooper-Greenhill's anthology *The Educational Role of the Museum*, and the Journal of Museum Education's anthology *Transforming Practice*, edited by Joanne S. Hirsch and Lois H. Silverman.

This project is heavily influenced by an education strategy known as Constructivism. While different authors have different definitions of Constructivism, the central concept is that learning is best accomplished by building on existing knowledge and experiences. Rather than simply accumulating facts, learners continually reorganize and understand knowledge,¹¹ building new ideas on information they already know. Proponents of Constructivism assert that information learned through this process is "more stable and more accessible," as it is defined by the learner's own experiences.¹²

Museum exhibits are an excellent medium for using Constructivist learning strategies. An exhibition "[provides] a context or framework in which objects exist," allowing designers to present knowledge that visitors can connect with the objects.¹³ As many museum visitors are accompanied by friends or family, the

¹¹ Hein, *Constructivist Museum*, 76.

¹² Jeffery. *Constructivism in Museums*, 213-214.

¹³ Dean, *Museum Exhibition*, 28.

exhibit setting stimulates conversation, contributing to the process of connecting the new information presented by the exhibit with their own experiences.¹⁴

Exhibit designer Signe Hanson developed an elegant metaphor for Constructivist learning in her essay “Exhibitions as Educators; or, The Mundane and Magnificent Art of Stringing Beads.” Hanson describes a personal, ongoing learning process, unique for every museum visitor:

Consider that life’s single experiences are like single beads not yet strung together in linear form. And consider that a visitor to an exhibition might well collect a pocketful of experiences, or beads, to take home. These beads are different for each visitor, chosen from among the many possibilities we exhibitors have wittingly or unwittingly provided. Visitors collect beads eccentrically and personally, picking what they will and stubbornly overlooking some of our proudest exhibition constructs or techniques.

Sometimes a visitor will choose several similar beads, see the related points in an exhibit, and string those beads together on a clear monofilament of cognition (the oft-mentioned ‘aha!’ event). On the other hand, he or she may simply see one thing that sparked curiosity (a bead!) and then go off to find the restroom or visit the gift shop.

These beads join other beads already in the pocket. Perhaps others are picked up at home, work, or school. They may or may not be particularly related. And at some point—maybe right away, maybe far in the future—the visitor sorts and organizes a number of beads from the collection into a linear necklace

¹⁴ Jeffery. *Constructivism in Museums*, 217.

strung on a thin thread of knowing. This necklace is worn proudly until the wearer needs to restring it with other beads and other experiences, to make new necklaces and draw new conclusions. This is learning, and it is more often than not a process, not an event with edges."¹⁵

The strength of Constructivist education in museums is illustrated by the results of a formal survey conducted by John Falk. In this study, visitors to the Smithsonian's National Museum of Natural History were interviewed twice: once upon exiting the museum and once six months after their visit. The study found that visitors remembered the information learned during their visits, connected it to subsequent experiences, and gained a more informed view of the subject matter over time.¹⁶

Ray Ashley's Recommendations

In addition to the museum principles already outlined, consultant Ray Ashley made recommendations for creating interpretation onboard the historic ships located at Seattle's Lake Union Park. Ashley recommended using volunteers and docents to provide visitors with information about the *Arthur Foss* through tours. He asserted that including "modest identification" of objects and spaces onboard the tugboat with written signs would be appropriate, but excessive labeling would compromise the tug's authentic working appearance. Ashley suggested that more detailed information about the tug be provided using printed

¹⁵ Hanson, *Exhibitions as Educators*, 226-227.

¹⁶ Falk & Dierking, *Learning From Museums*, 3-8,

handouts or audio tours. He noted that audio tours could be especially valuable if they included personal narratives from tugboaters who served on the *Arthur Foss* or other tugboats.¹⁷

In addition to these recommendations, Ashley suggested a particular model for interpreting the *Arthur Foss*. As director of the San Diego Maritime Museum, Ashley had led the design team for interpreting the museum's latest museum ship, the *HMS Rose*. The *HMS Rose* is famous for portraying the *HMS Surprise* in the 2003 movie *Master and Commander: the Far Side of the World*, based on Patrick O'Brian's acclaimed novels. Recently opened to the public as a museum exhibit, Ashley considers the interpretation on the *HMS Rose* to be a success as visitors read nearly all of the written signs onboard.¹⁸

To interpret the *Rose*, Ashley showed *Master and Commander* to a focus group consisting of six people with different degrees of knowledge about sailing and maritime history. He then asked them to write down 20 questions they still had about Napoleonic-era warships.¹⁹

Ashley and his exhibit team took these lists of questions, grouped them into themes and topics, and wrote the exhibit script specifically to answer those questions in a narrative form. They took the additional research gathered through answering the questions and compiled them into an informational document used to train docents.²⁰

¹⁷ Ray Ashley, April 2007.

¹⁸ Ray Ashley, November 2006.

¹⁹ Ray Ashley, November 2006.

²⁰ Ray Ashley, November 2006.

During his time in Seattle studying interpretation opportunities for the *Arthur Foss* and other historic ships, Ashley suggested that Northwest Seaport use the same method to create an interpretation plan for the tug.²¹ The 1934 MGM movie “Tugboat Annie” provided an excellent medium to apply Ashley’s model, as it both showed tugboating in 1930s Puget Sound and was filmed onboard the *Arthur Foss*.

“Tugboat Annie” Focus Groups & Results

Following Ashley’s suggestion, this project draws on small focus groups to determine what topics the interpretation plan should address. A total of ten respondents watched “Tugboat Annie” and formulated at least ten questions each about tugboats and tugboating. These focus groups produced a total of 112 questions; the unedited list of questions is provided in *Appendix One*.

These questions provide a framework for what a general audience want to know about historic tugboats like the *Arthur Foss*. Nearly all of the respondents asked questions like “Did people live on tugboats?,” “How many people worked on a tugboat?,” and “What are tugboats used for?” Overall, the respondents seemed to want an introduction to tugboats and what they do—a “Who? What? Where? When? Why? And How?” introduction to the industry and the vessels. The research addresses the questions as relevant to the time period between

²¹ Ray Ashley, November 2006.

1930 and 1960, both identified as a significant era in Puget Sound tugboating²² and the approximate span of the *Arthur Foss's* career as a Foss tug.

Falling into nine broad categories, the questions were then condensed and rephrased to comprehensively address the topics the focus groups identified.

For example, the questions:

- Could a tugboat really be manned by 2-3 people?
- How many people were on a typical tug crew?
- How many people does it take to man a tug?
- What crew are needed to run a tug?
- How many people work on the average tugboat?
- How does one become a captain?

became:

- How many people were on the crew of a tugboat?
- What did each person do?
- What were the qualifications for each position?

A handful of topics raised by the focus groups were not specifically relevant to the *Arthur Foss* and needed modification in order to be useful. The best example

²² Karl House, March 2007.

of this was a frequently-occurring question about the engine; “Tugboat Annie” was filmed in 1933, one year before the tug was converted to using a diesel engine. In response to the movie’s depiction of a steam engine, many of the focus group participants asked questions like “What are boilers?,” which are unique to steam engines. While addressing steam engines would fall outside the designated scope of this project, these questions show that the respondents want to know more about how a tugboat’s engine works. In response to this interest, a set of questions pertinent to diesel engines was substituted for the questions about steam engines and boilers.

The resulting 117 questions became the research outline for creating a narrative background document to train docents and volunteers. This research outline is given in Appendix Two.

Research Findings

This project uses a combination of published sources and interviews to answer the questions generated by the focus groups described above.

Virginia Thorndike’s *On Tugboats*, Doreen Armitage’s *From the Wheelhouse*, and Helen Leber’s *Northwest Tugboat Captain* provided information about towing and life onboard a tugboat during the time period, as does the *Exploration Northwest* episodes “Puget Sound Tugboats” and “Puget Sound Old Tugboats.” Michael Skalley’s *Foss: Ninety Years of Towboating* provided a detailed history of both the Foss Company and the *Arthur Foss* from construction to retirement.

In addition to these published sources, several individuals helped to elaborate on important topics. Karl House was invaluable to the process, providing information from both his experiences as a Foss deckhand in Puget Sound and about the log towing that the *Arthur Foss* and other tugs did. Adrian Lipp provided information about the tug's antique engine, including its history and how it functions.

However, some questions raised by the focus groups were impossible to answer without detailed original historical research beyond the scope of this project. These questions include ones like "How many tugboats operated on Puget Sound?" Finding an accurate answer to these questions would require extensive research through records from towing companies and government registries.²³

Other questions were not addressed in detail because a complete and meaningful answer fell outside the scope of research identified as tugboats on Puget Sound between 1920 and 1960. For example, a meaningful answer to the question "Did women commonly operate tugboats?" (they did not) would require research into when and how women did begin to work on tugboats, a time period beyond the scope of this project. A selection of topics deliberately not addressed by this project, including the role of women aboard tugboats, is identified for future research and interpretation in the *Recommendations* section.

²³ Karl House, March 2007.

The information discovered during this research process was used to write the narrative Background Document, exhibit signs text and tour outline.

Results

During the process described above, a central concept to guide the interpretation emerged: the *Arthur Foss* exemplifies a typical Puget Sound tugboat prior to 1960. By learning about the *Arthur Foss*, it possible to learn about other Puget Sound tugboats, what they did, and who worked on them.

According to tugboat expert Karl House, tugs of this era were all different enough that they could be identified from a distance by their individual features. Towing companies would assign their tugboats to a variety of different routes and duties through the course of their working careers. The *Arthur Foss* possesses these two defining characteristics, being built and rebuilt with unique features that make it easily identifiable by tugboating enthusiasts and having performed a variety of different jobs in its 80-year history as a working tug.

These physical characteristics mirror the characteristics of the distinct Puget Sound towing culture, revealed through this historical research. The activities that occurred onboard the *Arthur Foss* were common to the tugs of the era. While the individual stories of a single tug are interesting, the larger idea of exemplifying mid-century Puget Sound tugboats may make interpreting the *Arthur Foss* more meaningful to a broader audience.

This concept is supported by two main themes: the people who worked on tugboats, and the activities aboard. Addressing these two themes answers the

majority of questions asked by the focus group participants, and provides a framework for the information presented in the interpretation.

Using this central concept and its supporting themes, the interpretation is divided into the three products of this thesis project. The first product is the text for exhibit signs to be placed on the *Arthur Foss*, allowing visitors to independently tour the boat as they would a museum exhibit. The second product is an outline for a guided tour of the tug to be led by trained docents. The third product is a document that gives an extensive background of Puget Sound tugboating within the scope of this project, which will be used for training docents.

The exhibit signs, tour outline, and background document use gender-neutral language whenever possible. While tugboating during the era represented was an exclusively male profession, this is intended to allow visitors of any gender to insert themselves into the story of tugboating on Puget Sound. The background document addresses the male-only nature of tugboat crews in the relevant time period.

Exhibit Signs

The exhibit text component contains thirteen short explanatory passages intended to be printed on signs and placed in specific spaces onboard the *Arthur Foss*. They are designed to be read independently of each other. While the layout does follow a particular order, skipping signs or proceeding through the

vessel in a different order will not seriously impact the experience. For clarity, the following write-up assumes that a visitor will follow the specified layout.

The first sign contains a short introduction to be placed on the dock for visitors to read before stepping onto the tugboat. From the dock, visitors proceed onto the stern deck, an open space behind the engine room. The stern deck sign introduces the interpretation's concept and provides an overview of how tugboats participated in the logging industry.

From the stern deck, visitors proceed to the galley, or kitchen. Ideally, a docent will be stationed in the galley to answer questions and assist visitors in finding their way through the tugboat. The galley is a central location within the tugboat, which would allow a docent stationed here to monitor and assist visitors in the galley, crew cabins, engine room, and on the stairs to the top level.

The galley sign describes the role of the cook onboard a tug, and the challenges in preparing food onboard a tugboat. From the galley, visitors enter the mess, or dining room, and a forward crew cabin with two narrow bunks. The mess sign describes a typical crew on Puget Sound tugboats, while the crew cabin sign describes daily life onboard a tug.

After returning to the galley from the mess and crew cabins, visitors ascend the engine room ladder to the tug's boat deck, or top level. At the top of the stairs is the chief engineer's cabin, which contains a sign that describes the duties of tugboat engineers. Visitors then proceed forward past the mate's

cabin, which contains a sign describing the watch, or duty schedule, that tugboat crews followed.

After the mate's cabin, visitors enter the captain's cabin, which contains a sign describing the duties of a tugboat captain. Visitors proceed from the captain's cabin into the adjoining bridge, which houses the tug's navigation, communication, and steering equipment. The bridge sign describes how the captain and mate directed the tugboat, and introduces how the different pieces of equipment were used.

After exiting the bridge, visitors proceed back to the boat deck. The boat deck sign describes the activities during a typical tow. Ideally, a docent will be stationed on the boat deck to answer questions, assist visitors, and monitor activity on the top level and stern deck.

After lingering on the boat deck, visitors proceed back down the ladder into the engine room. The first engine room sign describes how engineers interacted with the engine, and the second engine room sign provides a history and description of the engine as an artifact. While the engine room has two levels, visitors will be prevented from entering the lower level unless accompanied by a docent.

After stepping over the engine, visitors exit the engine room and proceed to the bow deck, an open space at the front of the tug. The bow deck sign describes how the *Arthur Foss* ended its working career, and emphasizes that tugboats are still an important part of maritime commerce.

After reading the bow deck sign, visitors are able to linger on the tug, giving them a chance to reflect on their experience and to ask questions of docents stationed aboard.

Following Ashley's recommendation to preserve the authentic look of the tug, these signs are not affixed to walls or objects and are instead placed upright on horizontal surfaces. They should be accompanied by appropriate photographs, illustrations, and diagrams, and should be designed to be durable and movable, as discussed in the *Recommendations* section of this project.

The exhibit text is provided in Appendix Three, accompanied by contextual descriptions of where the signs should be located. Each sign is identified first by the space it occupies, then by the title of the sign itself.

Tour Outline

The tour outline is similarly broken into separate spaces onboard the *Arthur Foss* and uses each space to present aspects of tugboating on Puget Sound. The tour layout differs from the exhibit sign layout due to the nature of the tugboat; fitting a full tour group into the mate's cabin, for example, would be impractical, so a description of the watch system is given in the galley instead. Throughout the tour, similar topics are grouped together and addressed in one place.

Within each space, the tour outline describes what topics should be addressed and in what order, including pauses to ask for audience questions. The tour first gives an introduction to what tugboats do, then describes a tugboat

crew and their tasks, and then returns to the topic of towing for more detailed explanations. In several places, tour groups are asked to remember a particular feature for a later explanation.

Like the exhibit signs, the tour begins on the dock, where visitors receive an introduction to the *Arthur Foss* and its history. From the dock, visitors follow the tour guide to the stern deck, where they receive an overview of what tugboats do. This overview mentions ship assistance and coastal towing, but focus on log rafts as exemplified by the main portion of the *Arthur's* career. The tour guide also describes how the towing winch and other equipment on the stern deck were used. After pausing for audience questions, the tour proceeds forward to the galley.

In the galley, the tour guide describes a typical Puget Sound tugboat crew, the watch system, and the activities that took place in the galley. After this description, visitors are invited to step into the mess and crew cabin to see these spaces for themselves.

The tour guide then leads visitors up the engine room ladder to the boat deck, and then gives a brief introduction to the roles of officers onboard a tugboat. From the boat deck, visitors proceed forward to the bridge at the tour guide's direction, passing the mate's cabin and the captain's cabin on their way.

In the bridge, the tour guide describes how the mate and captain controlled the tugboat and supervised activities onboard, and how each piece of equipment in the bridge was used.

The visitors then return to the boat deck, where the tour guide describes the duties of tugboat deckhands, typical activities that occurred while towing, and the safety risks of towing. The tour guide also explains how the tugboat's masts and small rowboat were used for handling and inspecting log tows.

After pausing for questions, the tour guide leads visitors back down the ladder and into the engine room. On the main level of the engine room, the tour guide speaks about diesel fuel, diesel engines, the *Arthur Foss's* engine, and the duties of tugboat engineers. The tour guide then leads visitors to the lower level of the engine room, where they see the main body of the engine.

The tour guide leads visitors clockwise around the engine room, describing the engineer's station, the generator and air compressor, the fuel and tanks, and the access doors in the side of the engine. The tour guide also presents opportunities to become involved with the engine through volunteering and onboard workshops.

After pausing for questions and possible discussion, the tour guide leads visitors back up to the main level, then out of the engine room through a side door and forward to the bow deck. Here, the tour guide explains that while the technology has changed, the essential function of tugboats has not. The tour concludes with an invitation to stay and watch the boat traffic on Lake Union or to ask further questions and converse with the tour guide.

The tour outline is designed to be used by an individual familiar with the material it presents. It is not a stand-alone document, and should be used in

conjunction with other forms of volunteer education, as discussed in the *Recommendations* section of this project. Docents should be able to present the information within the tour outline and answer additional audience questions.

The tour outline is provided in Appendix Four, accompanied by contextual descriptions of how guides and visitors should progress through the *Arthur Foss*. Each segment of the tour is identified by the space in which it occurs. This is followed by an overview of the information with each segment, an outline of topics to cover, and how to proceed from space to space within the tug.

Background Document

The background document is a detailed description of tugboating on Puget Sound from roughly 1920 to 1960. It is designed to prepare an individual to give a tour of the *Arthur Foss* and answer questions about Puget Sound tugboats and the *Arthur Foss* within the current scope of interpretation. It is presented in essay format to enhance readability

The topics covered by the background document stem directly from the focus group responses explained in the *Methodology* section of this project. It is arranged to progress from very general to very specific and begins with an overview of the importance of tugboats to Puget Sound industry. Its next section provides information on the development of the towing industry and the founding of several modern towing companies.

The next two sections describe “typical tows” and “typical crews” of the era, giving an understanding of daily life on tugboats like the *Arthur Foss*. It describes

the kinds of work performed by tugboats, the responsibilities of tugboat crews, and how crewmembers spent their off duty time.

After providing general information about historical towing, the background document discusses the individual spaces onboard the *Arthur Foss* and describes the equipment and activities relevant to each. It then gives the *Arthur Foss's* history, from when it was built to the present time. This history contains greater detail of the tugboat's working history than is provided in the *Background & Context* section of this project, and contains less about the tugboat as a heritage vessel since its retirement.

The background document concludes with a brief introduction to diesel engines. This section outlines the characteristics of diesel engines and how they operate, using the *Arthur Foss's* large engine and its exposed moving parts as an easily-viewed example of diesel engine technology. This section is included in order to familiarize docents with the tug's engine, a significant artifact in its own right that visitors may have extensive questions about.

The full background document is provided in Appendix Five. It is designed to ultimately be part of a larger packet of information given to docents to familiarize them with the *Arthur Foss*. This information packet will include relevant illustrations, diagrams, and additional readings as described in the *Recommendations* section of this project.

Conclusions

This project has four main conclusions. First, it met the goals and produced the project described in its initial proposal.

Second, it created a process for interpreting the *Arthur Foss* despite several unanticipated challenges. These challenges include the lack of publicly accessible historic ship interpretation models and the existence of relatively few sources on historic tugboating in Puget Sound.

Third, it provides a foundation for a comprehensive interpretation plan for the *Arthur Foss*. This foundation can be completed and expanded by following the steps outlined in the *Recommendations* section.

Finally, the research conducted for this project reaffirmed the significance of the *Arthur Foss* and the need to interpret historic vessels like it.

Achievement of Stated Goals

The stated purpose of this project is, “to create a plan for formal museum interpretation of the historic wooden tugboat *Arthur Foss*.” The proposal describes the interpretation as consisting of three main components: exhibit signs, a guided tour, and trained docents. It further describes its final product as a “detailed, written document that provides the content of the three components and recommendations on how to implement each,” with the docent program component to include a, “handbook containing a wide variety of information about

the vessel to allow docents to familiarize themselves with the answers to potential questions.”

The proposal also states that the final project includes “methods to evaluate the success of the interpretation plan once implemented, a summary of topics related to the *Arthur Foss* that merit further research,” and recommendations on how to design and fabricate the suggested interpretation plan. Finally, the proposal describes the creation of a model for interpreting other historic ships.

At its conclusion, this project creates an interpretation plan consisting of three products: the text for exhibit signs, an outline for a guided tour, and a document that contains the background information needed for docent training. It also includes, in the *Recommendations* section, suggestions for creating an evaluation plan, a list of further topics to research, and a description of the next steps to implement the interpretation plan. Furthermore, the project creates a model for interpreting other historic ships that addresses the unique characteristics of vessels like the *Arthur Foss*. By using focus group respondents to identify topics of interest, this project presents a method for involving individuals with no prior knowledge of maritime history in the development process.

Evaluation of Methods and Process

While overall the methods and processes used in this project appear to be successful, two subjects warrant specific discussion: the use of small focus groups and the use of informal interviews.

Using focus groups to identify relevant topics for interpretation succeeded for the purposes of this project. Several focus group respondents asked questions that may not have occurred to an individual knowledgeable about ships and maritime history but proved highly relevant to the final interpretation plan. For example, the question “How does the steering work?” led to an investigation of the cable and pneumatic control system used to move the *Arthur Foss*'s rudder, which in turn became a topic addressed in the tour outline.

However, these focus groups were relatively small and pulled from a homogeneous group of people. For this project, the focus groups were appropriate to identify topics of interest to a general audience, but future development of interpretation for the *Arthur Foss* and other vessels should consider using larger focus groups that draw from a broader audience.

By conducting informal interviews with local experts rather than relying solely on published sources, this project identified several topics of significance to the *Arthur Foss*. Additionally, performing these informal interviews renewed and strengthened contacts between Northwest Seaport and other components of Seattle's maritime history community.

However, by not recording and archiving formal interviews, this project missed an opportunity to create documented sources of information about historic tugboating on Puget Sound. Future development of interpretation for the *Arthur Foss* and other historic vessels should include an oral history component to record the information gathered during these interviews.

Research Conclusions

The historic tugboat *Arthur Foss* embodies the unique history of Puget Sound tugboats. Used almost continuously as a working tug from 1889 to 1968, the *Arthur Foss* was directly involved in the development of the Pacific Northwest's economy and industry from an obscure frontier region to a hub of international commerce. Now, as a heritage vessel owned by a non-profit preservation and education group, it is useful for teaching the important history of tugboats and towing in Puget Sound.

Due to its contribution to “[building] the Pacific Northwest,” the *Arthur Foss* is recognized as a National Historic Landmark of national and regional significance.¹ The tug is one of four vessels in Seattle recognized as National Historic Landmarks. It is one of only eight tugboats in the country designated as a National Historic Landmark, and the only one located in the Pacific Northwest.² She is one of the few 19th Century tugboats still afloat, and the only one in Washington State open to the public for tours and educational programming.

¹ MHF, *Facility Integration Strategy*.

² Delgado, *Tugboat Arthur Foss*.

In addition to the tugboat's overall significance, its diesel engine is a notable artifact on its own. Manufactured by Washington Iron Works of Seattle in 1934, it is the largest of about 15 engines surviving from that company and one of only a few hundred like it left in the world.³

The *Arthur Foss* is also a valuable tool for teaching traditional maritime skills, including wooden shipbuilding and antique engine repair. According to professionals within these fields, "leaving the classroom and working down on the docks" provides students with an invaluable learning experience and is vital to preserving the skills and stories of maritime culture.⁴

Finally, the many studies and proposals created for maritime heritage in Seattle show the ongoing need for creating interpretation for the *Arthur Foss* and other historic ships. This project provides a plan to meet that identified need.

³ Adrian Lipp (marine engineer, Old Tacoma Marine, Inc.), in discussion with the author, March 2007

⁴ Michael Vlahovich, e-mail message to author, April 15, 2007.

Recommendations

This project creates a number of actions that Northwest Seaport can pursue to continue improving the maritime heritage interpretation at Lake Union Park, including creating additional elements to complement this interpretation plan, designing and fabricating the exhibit signs and implementing the plan, evaluating the success of the interpretation once implemented, and pursuing other topics in future interpretation and research.

Additional Elements

While this project creates a comprehensive interpretation plan for the *Arthur Foss*, other elements should be considered for development. These elements include illustrations, printed guides, and audio components.

Illustrations

A key portion of successful museum exhibits and interpretation plans is the use of visuals, in the form of photographs, diagrams, maps, and drawings.⁵ Northwest Seaport should consider adding illustrations to accompany the exhibit text, during docent-led tours, and in the printed guides discussed later.

There are several potential sources of relevant illustrations. The Puget Sound Maritime Historical Society has a number of historic photograph

⁵ Serrell, *Exhibit Labels*, 147-150.

collections from local maritime enthusiasts.⁶ Other relevant photographic collections include those of Michael Skalley, a Foss employee and author of the book *Foss: Ninety Years of Tugboating*. Other possible sources of historic photographs include Seattle's Museum of History and Industry, the University of Washington's Special Collections, and the Washington State History Museum in Tacoma.

Another important kind of illustration to be investigated is custom-drawn diagrams, especially in regard to the *Arthur Foss's* antique engine. While diagrams of modern diesels are common, the tug's 1934 engine is shaped differently than modern engines. In order to provide adequate illustrations of the engine, Northwest Seaport should hire a professional draftsman or graphic designer to create custom diagrams, combining the original highly-detailed engine schematics⁷ with modern conceptual diagrams of how diesel engines work.⁸ Other diagrams to consider are of the *Arthur Foss* itself to achieve a sense of the vessel's scale and proportion.

Maps are also valuable illustrations to consider. Possible map topics include a map of the *Arthur Foss's* journeys up and down the West Coast and Pacific Ocean, as well as common tugboat routes in Puget Sound and the Strait of Juan de Fuca. Maps should be compiled from historic resources, and created by a graphic designer or illustrator.

⁶ Pat Hartle, March 2007.

⁷ Washington Iron Works, *Instructions*, 8.

⁸ Calder, *Marine Diesel Engines*, 5-7.

Finally, drawings may be appropriate to use for certain illustrative purposes, especially when relating stories about the *Arthur Foss*.

Printed Guides

Northwest Seaport should consider designing and producing printed guides that explain portions of the tug in greater detail than the exhibit texts. Such guides would be valuable for interpreting specific spaces or objects onboard the tug, especially the engine and the bridge. They could also be used to convey additional stories not covered in this interpretation plan, such as the personal accounts of former crew members. These guides should be created using a combination of photographs, diagrams, and carefully selected text.

Audio Components

In order to provide visitors with a more complete experience onboard the *Arthur Foss*, Northwest Seaport should consider incorporating audio components into the interpretation. These audio components may include playing recorded sounds of an operational tugboat in on-board spaces, such as sounds of the engine operating in the engine room and sounds of radio chatter in the bridge.

Northwest Seaport should also consider creating a formal audio tour of the tugboat, incorporating interviews and oral histories into the existing interpretation.

Design & Implementation

In order to successfully implement this interpretation plan, Northwest Seaport should design and fabricate the exhibit signs written by this project. Additionally, the organization should create a dedicated volunteer docent program that recruits, trains, and retains individuals interested in giving tours of the *Arthur Foss*.

Design

Northwest Seaport should consider hiring a museum exhibit designer or graphic artist to design the exhibit signs. These designs should incorporate the texts created for this project, the illustrations previously discussed, and a cohesive visual theme that ties the signs together. The design should follow museum exhibition guidelines, using large text and bold headlines to make the signs easy and compelling to read.

Sign Fabrication

Northwest Seaport should consider working with a museum fabrication company to design and produce the signs. These signs should be waterproof and able to withstand being moved, stacked, and stored when the *Arthur Foss* is away from the dock or undergoing restoration.

Docent Corps

In order for the guided tours proposed in this interpretation plan to be successfully implemented, Northwest Seaport should create a program to recruit, train, and retain individuals interested in leading tours and answering visitor questions aboard the *Arthur Foss*. The docent program should have a designated coordinator, a structured training course, and incentives such as social events and off-duty educational programs to help attract and retain docents.

In order to assist in training docents, the Background Document portion of this project should be combined with other documents and instructions into a handbook. This handbook should be designed following successful handbooks used by other museums⁹ and should include additional material such as Northwest Seaport volunteer policies, readings on museum theory, a recommended reading list of books relevant to the *Arthur Foss*, and suggestions for how to lead a memorable and informative tour.

Evaluation & Enhancement

Museums and exhibit designers are increasingly concerned with the importance of evaluating an exhibit, analyzing its successes and weaknesses for use in creating future interpretation. Evaluation can allow museums and designers to correct errors based on mistaken assumptions or omissions. These

⁹ Moats, *Exhibition Guide Training Handbook*.

corrections can be as minor as inserting a missed word into a sign or as major as changing the physical structure of the exhibit to improve traffic flow.¹⁰

An evaluation of museum interpretation should measure the “interaction between exhibits and people,” to “determine whether and how well the exhibition is accomplishing its purpose of communicating.”¹¹

There are two main types of exhibit evaluation: formative and summative. Performed during the development process, formative evaluation assesses the effectiveness of an exhibit before it is opened, when changes can more easily be made. Often, formative evaluation methods include surveys and consultation with potential museum visitors.¹² The “Tugboat Annie” focus groups described in the *Process* section of this project can be considered a form of formative evaluation, as it used test audiences to determine the content that should be included in the interpretation plan.

Summative evaluation, performed after completing and opening an exhibit, is used to identify problems and improve the effectiveness of an exhibition, as well as to plan future exhibits.¹³ A common way to conduct summative evaluations is to use visitor exit interviews or questionnaires.

Visitor Surveys

Once the new interpretive plan is implemented, Northwest Seaport should perform a summative evaluation using interviews or written surveys to determine

¹⁰ Serrell, *Exhibit Labels*, 219-222.

¹¹ Dean, *Museum Exhibition*, 92-93.

¹² Dean, *Museum Exhibition*, 96.

¹³ Dean, *Museum Exhibition*, 97.

its successfulness. The interviews or surveys should be performed immediately after visitors tour the *Arthur Foss*. A docent, volunteer, or staff member should ask a portion of visitors both specific and open-ended questions.

One set of questions should be attached to numeric values on a graduated scale, designating “one” for “not at all” and “five” for “very much,” allowing results to be quantified. Examples of these questions include:

- Did you enjoy your visit to the *Arthur Foss*?
- Do you feel you learned from the visit?
- Would you recommend visiting the *Arthur Foss* to your friends and family?

Other questions should be open-ended and designed to give specific feedback about the interpretation. Examples of these questions include:

- What did you find most interesting about the *Arthur Foss*?
- What part of the boat did you like the most?
- What do you want to learn more about?

Surveys should also include a section asking the occupation of the respondent, if they had any previous interest or contact with maritime topics, and general demographic information. Demographic data of this type would be useful

for planning programming onboard the *Arthur Foss* and other heritage vessels, as well as giving an account of the demographics currently served.

Questions Log

A key component of the interpretation plan is the opportunity for visitors to ask questions of docents stationed aboard. While this project has compiled answers to questions that visitors will likely ask, invariably questions will arise that are not covered here. This weakness in the interpretation should be used as an opportunity for visitors to interact and share their own comments and experiences, a crucial part of Constructivist education.¹⁴

Relevant visitor questions not covered by the interpretation created in this project should be recorded in a special log provided onboard the *Arthur Foss*. Docents may record these questions themselves after speaking with a visitor, or visitors can be invited to record their questions, stories and observations in the log.

These questions should be reviewed by Northwest Seaport curatorial staff and be used to modify the existing interpretation and identify future topics for interpretation. The answers to any questions that are commonly asked should also be included in future drafts of the background document.

¹⁴ Jeffery, *Constructivism in Museums*, 217.

Future Interpretation & Research

This interpretation plan should not be considered permanent or static, as there are numerous other relevant topics that can be presented onboard the *Arthur Foss*. After this interpretation plan is implemented, evaluated, and has been available for several years, Northwest Seaport should consider adding new interpretation based on different concepts and topics. Museums have found that changing exhibits and adding new interpretation are excellent ways to sustain interest and attract new visitors.¹⁵

Exploring new concepts and topics should supplement the interpretation plan this project has produced. They should be incorporated into the existing interpretation by providing a variety of topical tours or different sets of exhibit signs. Possible topics for future research and interpretation include:

- Oral histories of *Arthur Foss* crewmembers and the crews of other historic tugboats
- Women and tugboats, from entrepreneur Thea Foss to modern captains
- The technological changes during a century of tugboating, by comparing and contrasting the historic wooden tugboat *Arthur Foss* with the modern tractor tug *Arthur Foss*
- The Foss Company and their contribution to Lake Union and Puget Sound industry

¹⁵ Genoways and Ireland, *Museum Administration*, 281.

- The stories of Puget Sound towing companies, such as Foss, Western Towboat, Olympic Tug & Barge, and Crowley Maritime, and how they have interacted and competed
- The *Arthur Foss's* other duties, such as its work on the Columbia River Bar and in the Pacific
- The Alaska Gold Rush from the water rather than from the shore

In addition to these new topics, Northwest Seaport should begin compiling an archive of information about tugboats and tugboating as relevant to topics illustrated by the *Arthur Foss*. There are a variety of possible sources of information that should be pursued, beginning with oral histories of crew members, tugboat company employees, and shipwrights. Newspaper archives from Puget Sound mill towns, such as Port Angeles and Bellingham, may mention specific tugboats and the towing industry, as might newsletters and publications from unions and other professional groups.

There are also government documents that may be relevant to the *Arthur Foss*. The tugboat is doubtlessly included in many naval and merchant marine records throughout her working career, especially during its WWII service. The National Park Service may have information about the tugboat, especially if it has ever been the subject of a Historic American Engineering Record.

Finally, while fictional and sometimes historically inaccurate, a collection of Norman Reilly Raine's "Tugboat Annie" short stories would make a valuable

addition to an archive of material about the *Arthur Foss*, as they illustrate popular interest in Puget Sound tugboating.

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Appendices

Appendix One: “Tugboat Annie” Focus Group Questions

The following is a list of questions asked by focus group respondents, as described in the *Product* section of this project.

Respondent One

- What does the dial next to the wheel do?
- How many people does it take to man a tug?
- Was it normal for a family to live together on a tug?
- How did they pay the cook?
- Did the Coast Guard have tugs? Did they work with private tug owners?
- How did they know where to go?
- How true is the story? [Tugboat Annie]
- How the hell does the boiler work? Can you actually crawl into it?
- Tell us more about crashing into the ferry!
- Can they talk with the whistles?
- What communication forms did they use?
- How often did they use 2 tugs to push/pull?
- Are there lots of sizes of tugs?
- How did she get her name?

Respondent Two

- Is there a difference between tugboats and towboats?
- What is the large ship with the sails called—and what is it doing in Puget Sound?
- Do these people live on the boat? What was the cooking method? How much space to live in?
- What does a boiler do?
- How much money would a tugboat operation have made in a year?
- How large is the operation range for the boat? How large a territory does it cover?
- Was the real boat [*Arthur Foss*] ever used as a garbage ship, or for anything else except tugging?
- Why are tugboats more able to weather a storm than a liner, etc?
- From a mechanical standpoint, how exactly does the worthless drunk fix the boilers?
- When was the tugboat made? And was it “retired” by the time it was in the movie, or did it operate as a tug after the movie?

Respondent Three

- Why was one tugboat burning cleaner than the other?
- Why did the boat with sails (schooner) need a tugboat?
- Was it normal for people to live on the tugboat?

- Were tugboats usually family operated?
- At the highpoint, how many tugs were operating in the Sound?
- Were there tugboat fleets or were they mostly individually owned?
- How many people normally lived/worked on a tugboat?
- Why is there a ledge that must be stepped over in the doorway?
- How do they know when boats need tugs?
- Was there really a Tugboat Annie?

Respondent Four

- How were tugboats operated? Who owned them?
- Did tugboat operators live on the boats?
- Is the competition between operators shown in the film representative of tugboat culture in the '30s?
- Did women commonly operate tugboats?
- Bad waters? Does where you dock matter?
- What's the deal with Terry getting dressed in layers and doused with H2O?
Did this happen before?
- Was alcoholism a common problem among tugboat sailors?
- What other uses have tugboats been converted to?
- Were tugboats built in Seattle?
- General history of tugboats in Seattle
- General intro to boat anatomy?

- General history of *Arthur Foss* – changes to boat, ownership, etc

Respondent Five

- What runs through the metal pipes in the underneath area? (opening scene)
- How were the great thick ropes made – and what were they used for?
- Why did one boat have white smoke and one black?
- How does the steering work – what is the wheel attached to?
- What is the scale/gauge to the right of the steering wheel & what does it measure? And how does it measure?
- Did they live permanently on this boat year round? I'd be interested in expenses and logistics of living on the boat. Are taxes involved?
- Could a tugboat really be manned by 2/3 people?
- What are boilers and what do they do and how do they work?
- What's the life expectancy of a tugboat?

Respondent Six

- Did women really work as mechanics?
- How fast can tugboats go?
- How thick was tugboat rope?
- Did tugs do anything other than pull ships into harbor?
- What is a hawser? (the big rope her husband sold)
- Did people live on the tugs full time?
- What is the rigging for if there are no sails?

- Why are the doors so small and the threshold so high?
- Did all the boats have phones or was there just one for the dock?
- Is Tugboat Annie a true story?
- Did tugs go out on the ocean or stay in the Sound?

Respondent Seven

- How fast can a tug turn when in danger?
- Tugs are like tow trucks, eh? How much did it cost to get a tow?
- How did tug-people rank among the classes of society?
- How does the horn make its sound? Do all tugs have a different sounding horn?
- Was the bid \$3,200 really low for the day?
- Why are there masts if the boat is steam powered?
- What type of ballast does a tug have to keep it so upright in a strong storm?
- What makes a tug so much stronger than other boats?
- How hot does it get down below where the fires are?
- Did people often live on tugboats – like this family?
- Is there constant work to be done when piloting (captaining) a tug – like sailing – you have to always work – or – can you just let the tug run on its own for awhile?
- What crew are needed to run a tug?
- What does a tugboat usually pull – a barge – or other boats?

- Why is some smoke more or less black than other smoke? Type of coal?
Engine makeup?
- How fast can the Foss go? Is that speed fast compared to other tugs – or slow?

Respondent Eight

- Were tugboats operators independent contractors? Commissioned by the city? Part of companies?
- What is a hawser?
- Did tug operators live on their boats?
- Were there different types of tugs for piloting ships, pushing barges & log flows? If so, what were the differences?
- Where did the boats tie up @ night?
- Did they tie up together?
- Why are power-boats like tugs equipped with masts?
- Did the tugs lurk in a particular area to pick up ships, or did they go out on a schedule?
- Were tug operators looked down on by prestigious ship captains or valued as skilled pilots?
- How did the tugs take on fuel/coal?
- Did ship captains develop loyalties towards particular tug captains?
- Did tugs act as rescue boats?

- How many people were on a typical tug crew?
- Were there women tug operators? How many? How were they viewed by the maritime community?
- How were tug captains viewed by the community? Was there a mystique or romance surrounding them?

Respondent Nine

- How fast can tugboats go? What is this equivalent to?
- What do tugboats run on?
- How many people work on the average tugboat?
- How long do tugboats stay at sea for?
- How does one become a captain?
- What is the difference between a tugboat and a liner? Are they the same thing?
- What is a crankshaft? As in “I’ll scrub him with sandpaper until he shines like a crankshaft”?
- Are tugboats environmentally sound? The smoke seems pretty black...
- What are the names of the different ropes? I noticed some terms are used in the movie.
- What are tugboats used for?

Respondent Ten

- How and why is a tugboat shaped differently from other boats? It’d be interesting to see proportion example.

- It looks like they're living in the engine room. Was this standard practice?
Were there any health problems as a result?
- How did tugboats guide other boats? I saw the rope thrown up to the other boat, and at one point it looked like the tug was actually pushing a ship.
- Did the tugboats have to race for jobs as depicted in the movie?
- How big is the engine in comparison to the boat?
- I'd be interested in learning more about leverage needed to hold such large vessels, when the tugboat is so much smaller.
- Are tugboats really necessary in the Puget Sound? I've heard about the mouth of the Columbia River being bad. Examples?

Appendix Two: Research Outline

The following is a research outline compiled from topics identified by focus group respondents, as described in the Product section of this project.

Towing as a part of Puget Sound maritime industry

- Who owned tugboats?
 - Individuals?
 - Maritime companies?
 - Governments and agencies?
- Who hired tugboats?
 - Individual boats?
 - Maritime companies?
 - Governments and agencies?
- Was towing profitable as a business?
- Why were tugboats needed in Puget Sound?
 - What was the range of tugs operating in the Sound?
 - How many tugs were operating in the Sound during the 1920s to '50s?
 - How many towing companies?

Crew & Life on a Tug

- How many people were on the crew of a tugboat?

- What did each crew member do?
- What were the qualifications for each position?
- How were they paid?
- What was life like on a tugboat?
 - Did the crew of a tugboat live on board?
 - What was the living space like?
- How did they cook, serve, and eat food on a tugboat?
- Where did they go to the bathroom?
- Where did the tugboat go at night?
 - Where did the tugboat crew go at night?

Getting a Tow

- What kinds of things did tugboats tow?
 - Why did these things need to be towed?
- Where did a tugboat tow?
 - How far was the range for a particular boat? A particular company?
 - How far did a tugboat travel to pick up a tow?
- How did a ship get a tow?
 - How did they contact the tug?
- How much did it cost to get a tow?
- What was towing a ship, barge, or other thing like?
 - How did they hook up to the tug?

- How did they start towing?
- Did towing require constant attention from the crew?
- Where did they take the ship, barge, or other thing to?
- How did they dock?
- How did tugboats communicate?
 - With each other?
 - With the ship they were towing?
 - With their “base”?
- Did tugboats ever work with other vessels or tugboats?
- Did tugboats do anything besides towing?

What makes a tugboat a tugboat?

- What common features do tugboats share that define them as tugboats?
 - Hull?
 - Superstructure?
 - Engine?
 - Specialized equipment?
 - Function?
- Was there a “typical” tugboat?
 - Size?
 - Shape?
 - Were there different kinds of tugboats for different kinds of towing?

- What makes tugboats different from other boats?
 - Can any boat be a tugboat if it's used for towing?
- What was the average life of a tugboat?
- Where and how were they built?
 - How long were their working life-spans?
 - What happened to them when they "retired"?

Technology and equipment

Engine

- What kind of engine does the *Arthur Foss* have?
 - Why does it have this kind of engine?
 - How is this engine different from other tugboat engines?
 - Is it a "typical" engine for tugboats?
 - What other kinds of applications did these kind of engines have?
- How does the engine produce power to propel the boat?
 - What are the basic parts of the engine and how do they interact?
 - How does it start?
 - What is the 4-stroke cycle?
 - What does direct-reversing mean?
 - What kind of fuel does it use?
 - How did they fuel the boat?
 - How environmentally damaging are the smoke and emissions?

- How fast did the *Arthur Foss* go?
 - How does this compare to other tugboats at the time?
 - How does this compare to modern tugboats?
- Why was a powerful engine important to a tugboat?

Bridge

- What are the different pieces of equipment on the bridge?
 - What do they do?
- How was the tug handled?
 - Steering?
 - Speed & direction of engine?
- How did the tug communicate?
 - With the shore?
 - With the engine room?

Deck & Houses

- What are the unique features of tugboat deckhouses?
 - Why are they built that way?
 - Why are the doors so small? Why are they double?
 - Why are the door ledges so high?
- What are the big pieces of equipment on the deck used for?
 - Towing winch?
 - Anchor winch?

- Masts?
 - Why are there masts and rigging on a tugboat?
 - Did she once carry sails?
- What other types of equipment were used on board tugs?
 - Hawsers?
 - Deck lines?

Hull

- How is the design of a tugboat different from that of other boats and ships?
 - For pulling?
 - For resisting heavy weather?
 - What are the advantages and disadvantages of these differences?
 - Maneuverability?
 - Starting and stopping?

Vessel history

- How did she get her names?
 - What does *Wallowa* mean?
 - Who was Arthur Foss?
- When was the *Arthur Foss* built?
 - Where?
 - What was she originally used for?

- Where did she tow in her career as a working tug?
 - Who owned her?
 - Who operated her?
 - Why was she selected to star in the movie Tugboat Annie?
- How did she end up as a heritage vessel?
 - How did Northwest Seaport obtain her?
 - Why is she being preserved