

**SEATTLE DEPARTMENT OF HUMAN RESOURCES
EXAMINATION BIBLIOGRAPHY FOR FIREBOAT ENGINEER 2021**

March 18, 2021

The written examination for Fireboat Engineer will be tentatively held on Wednesday, June 16, 2021 (time and location to be announced). All examination dates, times, and locations are tentative and may be changed in compliance with the current COVID-19 public health guidelines.

The bibliography of study materials on which the written examination and/or practical exams will be based is outlined below. Please view the job bulletin for the Fireboat Engineer for the general scope of job duties and required knowledge, skills, and abilities.

GENERAL SCOPE: Pumps, motors, electricity/testing equipment, fuels and lubricants, the operation, maintenance and repair of diesel engines, generators, auxiliary machinery and equipment, and the systems and piping arrangements of Fire Boats #1, #2, #3 Chief Seattle and #4 Leschi (specific questions will deal with the machinery of the Seattle Fireboats). Verbal and written communication, supervision of fireboat crew, interaction with personnel and members of the public, and compliance with Citywide policies, and SFD POG. Vessel characteristics of the SFD fireboats.

Candidates who successfully pass the written will be scheduled for the practical examination, tentatively scheduled for September 13-15, 2021 (times and locations to be announced).

Please contact the Seattle Department of Human Resources Fire & Police Exams Unit at yoshiko.gracematsui@seattle.gov if you have any questions on the bibliography or the exam process.

Source Title	Contents
Allied Systems Tech Manual Telescopic Crane TC 20-55	All
AutoNav Electro Hydraulic Steering Operations and Service Manual	All
Caterpillar C18 Operation and Maintenance Manual SEBU8245-04	All
Caterpillar C18 Marine Power Display Operators Guide	All
CBRNE Crew Protection System Operation and Maintenance Manual Doc. #104086-511-11	All
Coastal Marine Equipment Capstan Instruction Manual	All
Champion Air Compressor Model R15B Operation and Maintenance Manual	All
Detroit Diesel Filter 75/900MAX and 75/1000MAX	All
Detroit Diesel Installation Instructions 18SP541 – Installation of Sea Pro 600	All
Durst Hydraulic Pump Drive Service Manual	All
Electro Guard Cathodic Protection System Installation and Operation Manual	All
Fireboat Fueling Best Practices	All
Fire Fighting Systems Operations Manual Doc. # FFS003-41-070	All

Foam Pro System 3012 Installation and Operation Manual	All
Hamilton Jet Installation and Service Manual HJ364-3 Jet unit Manual R1A23	Chapters 2,3,4,7,8
How to be an AntiRacist. 1 st Edition, One World Publishing. Ibram X. Kendi (2019)	Chapters 1 – 5
Is Everyone Really Equal? 2nd Edition by Sensoy, DiAngelo, and Banks (2017)	Chapters 3, 4, 5, 7, 12 (Excluding “Discussion Questions” and “Extension Activities”)
Kaeser Screw Compressor Model SX Service Manual	All
Key Power KP 22/16 Hydraulic Thruster and Installation and Operation	All
Leschi Switch Board Sequence of Operation 940748 Revision A 4/25/06	All
MTU Series 10V 2000 Series M92, M93 Operating Instructions	All
MTU V 2000 M93 Maintenance Schedule	All
MTU Series 8V 4000 M71 Operating Instructions M015412/02E	All
MTU Series V 4000 Maintenance Schedule M050486/04E	All
Northern Lights Luger OM2-2 Operators Manual for M1066T, M1064T	All
PMC Omni Chief Series 8003-1000 Instruction Manual	All
<u>Policies and Operating Guidelines</u> , SFD REV: Nov. 2020	All Policies that relate to the Guidelines listed below:
	P 1007 – Code of Conduct 3004 – Ethics 3017 – RSJI pages 3017-1 – 3.
Sexual Harassment Prevention Training Manual for Managers and Supervisors, 3rd Edition, by Paul Gibson, J.D., S.P.H.R. and Marjorie A. Johnson, J.D	All
Vessel Characteristics, Seattle Fireboats --This is the list of characteristics that test questions are drawn from, not other documents.	Listed below
Workboat Engineer, Revised Edition “D”/Marine Education Textbooks	Books 1 and 2 Chapters 2, 4, 5, 7, 9, 13, 14
Wynn 1800 “Seahorse” Wipers Installation and Maintenance Manual	All
ZF Marine Gear Operating Instructions 350, 500, 3000, BW 460	All

Vessel Characteristics of the Seattle Fireboats:

Fireboat Chief Seattle: Length – 96’ 6”; Beam – 23’; Draft – 7’; Speed – 22 Knots; Fuel 1508 gallons; Water 2 – 50 gallon tanks; Foam Concentrate 950 gallons Novacool; Semi-displacement hull with a gross tonnage of 108, Propulsion - Conventional Twin Screw; Main Engines: 2 - MTU 10V2000, M93 1500 hp at 2450 RPM, ZF 3000 gears with 42 inch 5 blade propellers; Thrusters: Key Power Hydraulic (2 - 50 hp Bow only); Electrical: 2 - 65 KW Northern Lights Generators 480VAC 3-phase; Firefighting: 4 - 2500 GPM Fire Pumps driven by 2 C18 Caterpillar 715 hp at 2100 RPM, Pump Capacity 10,000 GPM supplying 6 monitors (5 foam capable), 10 - 4 inch discharges, and stern jets. (LIST UPDATED 2/12/2021)

Fireboat Leschi: Length – 108’; Beam - 27’ ; Draft – 10’; Speed - 14 Knots; Capacities: Fuel 20,940 gallons, Water 1200 gallons, Foam Concentrate 6,000 gallons Novacool; Propulsion - Conventional Twin Screw; Main Engines: 2 - MTU 8V4000, M71 1556 hp at 2,000 RPM, ZF W4610 gears with 72 inch 4 blade propellers; Thrusters: Key Power Hydraulic (200 hp Bow , 100 hp Stern); Electrical: 2 - 99 KW Northern Lights Generators 480VAC 3-phase; Firefighting: 4 - 5,000 GPM Fire Pumps driven by 2 MTU 8V 4000 M71 1,556hp at 2000 RPM, Pump Capacity 20,000 GPM supplying 8 - foam capable monitors, 12- 4 inch and 4- 2 1/2 inch discharges; Crane Ladder: 55 feet with pre-plumbed waterway; CBRN crew protection and decon. (LIST UPDATED 2/12/2021)

Fireboat 1: Length - 50’; Beam – 16’ 6”; Draft – 30”; Speed - 30 Knots; Capacities: Fuel - 486 gallons, Water - 42 gallons, Foam Concentrate - 204 gallons Novacool; Propulsion - Twin 364 Hamilton jets; Main Engines - 2 - C-18 Caterpillar 715 hp at 2300 RPM; Electrical: 2 - 270 amp engine driven alternators and 1 - 10 KW northern Lights Generator; Firefighting: 2 - 3,000 GPM Hale BG8 centrifugal pumps driven off front of main engines, 6,000 GPM total pumping capacity, 2 - 2,000 GPM Elkhart remote operated monitors, 4 - 4" discharge ports, 4 - 2 1/2" discharge ports, Bow Monitor and forward discharge ports are foam capable, CBRN crew protection and decon.

Fireboat 2: Length - 50’; Beam – 16’ 9”; Draft – 30”; Speed - 42 Knots; Capacities: Fuel - 600 gallons, Water - 45 gallons, Foam Concentrate - 200 gallons Novacool; Propulsion - Twin 364 Hamilton jets; Main Engines - 2 - C-18 Caterpillar 1001 hp ; Electrical: 2 – 105 amp engine driven alternators and 1 - 9 KW northern Lights Generator; Firefighting: 2 - 3,000 GPM Hale centrifugal pumps driven off front of main engines, 6,000 GPM total capacity, 2 - 2,000 GPM Elkhart remote operated monitors, 4 - 4" discharge ports, 4 - 2 1/2" discharge ports, Bow Monitor and forward discharge ports are foam capable, CBRN crew protection and decon.

Types of vessels and physical comparisons to the Seattle fireboats:

Gross tonnage 24 to 300

Horsepower 1430 to 3100

Engines, single and double

Propulsion, twin propeller and twin jet

Speeds up to 42 knots

Operating in depths up to 800’ of water with experience in congested waters; including harbors, rivers, and inland waters

Comparable vessels would be harbor tugs, patrol boats similar to Coast Guard 82 and 95’ foot boats, both propeller and jet driven pilot boats, crew boats, patrol and military vessels

Please contact the Seattle Department of Human Resources Fire & Police Exams Unit at yoshiko.gracematsui@seattle.gov if you have any questions on the bibliography or the exam process.



CITY OF SEATTLE

Fireboat Engineer - 2021 Civil Service Exam

SALARY:	Not Displayed
LOCATION:	Fire Headquarters, 301 2nd Ave. S., Seattle, Washington
JOB TYPE:	Uniform Civil Service, Regular, Full-Time
SHIFT:	Variable
DEPARTMENT:	Fire Department - Uniform Civil Service
BARGAINING UNIT:	Fire Fighters, IAFF, Local 27
CLOSING DATE	01/19/21 11:59 PM Pacific Time

POSITION DESCRIPTION:

To maintain mechanical and electrical systems of all City fireboats in a condition of general readiness during an assigned shift; to be in charge of a fireboat engine room while underway and during emergency conditions; and to do related work as required.

JOB RESPONSIBILITIES:

- Maintains all mechanical and electrical equipment on City fireboats in a condition of readiness during an assigned shift.
- Provides working supervision over the engine room crew of the ready fireboat in port, underway, and during emergency conditions, and over the engine room crew of the standby fireboat while in port.
- Plans, supervises and assists with maintenance; overhauls and repairs the main engines, auxiliaries, pumps, electric motors and related equipment; maintains engineering spaces in a clean and orderly condition.
- Instructs engine room crews in the proper performance of routine and emergency duties.
- Maintains engine room logs, records, and operating data as required; maintains inventories, requisitions supplies, and prepares reports.
- Stands regular watches and performs maintenance duties while in port.
- Assists in fire rescue work if required.
- Completes all necessary reports, correspondence, and documentation as required in the performance of assigned duties.

QUALIFICATIONS:**MINIMUM QUALIFICATIONS:**

A minimum of 120 *shifts* assigned duty on the Seattle Fireboat; possession of a current license as Merchant Marine Chief Engineer for motor vessels of 1500 horsepower or greater is desirable; two years experiences as a Chief Engineer on a vessel of at least 1500 horsepower with diesel or diesel-electric propulsion is also desirable.

EDUCATION SUBSTITUTION: None.

PROMOTION ELIGIBILITY: Three (3) years (120 full shifts) assigned duty on the Seattle Fireboats.

DELAYED ELIGIBILITY FOR PROMOTION: Firefighters who meet the following service requirements as of December 15, 2021 may apply for later eligibility:

- A Firefighter must have one (1) year experience (40 full shifts assigned to the fireboats), **as of December 15, 2021**, to take the exam.

KNOWLEDGE AND ABILITIES:

Thorough knowledge of the theory and operation of marine diesel engines, particularly of the type used in the fireboats.

Thorough knowledge of all installed auxiliary equipment such as piping, pumps, and compressors.

Thorough knowledge of installed firefighting equipment and the basic laws of hydraulics and mechanics involved in its operation.

Good knowledge of fuels and lubricants.

Good knowledge of the operation and maintenance of marine electrical motors, generators, control systems, and other components.

Ability to plan, supervise and participate in major and minor repair and maintenance overhaul of all installed machinery, systems and equipment.

Ability to supervise and train engine room personnel, maintain necessary records and propose requisitions and reports.

Ability to establish and maintain effective relationships with other employees and the general public.

ADDITIONAL INFORMATION:

This description was prepared to indicate the kinds of activities and levels of work difficulty required of positions in this class. It is not intended as a complete list of specific duties and responsibilities.

If you are unable to apply on-line you may submit a paper application by the closing date to our office.

OUR OFFICE IS LOCATED AT:
Seattle Municipal Tower
700 5th Avenue, Suite 5500
Seattle, WA 98104



Careers@seattle.gov

Who May Apply: This position is open to all candidates that meet the minimum qualifications. The City of Seattle values diverse perspectives and life experiences. Applicants will be considered regardless of race, color, creed, national origin, ancestry, sex, marital status, disability, religious or political affiliation, age, sexual orientation, or gender identity. The Department encourages people of all backgrounds to apply, including people of color, immigrants, refugees, women, LGBTQ people, people with disabilities, veterans and those with diverse life experiences.

Accommodations for people with disabilities are provided on request.

The City is a Drug Free Workplace.

Fireboat Engineer - 2021 Civil Service Exam Supplemental Questionnaire

* 1. Please enter your City of Seattle Employee number (not your SFD number).

* 2. A Firefighter must have one (1) year experience (40 full shifts assigned to the fireboats) to take the exam and apply for delayed eligibility. Will you have at least 40 shifts (1 year) of assigned duty on the Seattle Fireboats by December 15, 2021?

Yes, I already have over 40 shifts.

Yes, by Dec. 15, 2021, I will have completed 40 shifts.

No, I will not have completed 40 shifts on the Fireboats by Dec. 15, 2021.

* Required Question