INTERIM REPORT OF THE
JOINT SUBCOMMITTEE STUDYING

The Need for Acquiring Fire Boats for Protection of the Hampton Roads Harbor

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 54

COMMONWEALTH OF VIRGINIA
RICHMOND
1989

MEMBERS OF THE JOINT SUBCOMMITTEE

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The Honorable Stanley C. Walker, Vice Chairman
The Honorable Moody E. Stallings
The Honorable S. Wallace Stieffen
Chief Odell Benton
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The Need for Acquiring Fire Boats
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To
The Governor and the General Assembly of Virginia
Richmond, Virginia
January, 1989

TO: The Honorable Gerald L. Baliles, Governor of Virginia,
and
The General Assembly of Virginia

I. AUTHORITY

House Joint Resolution 160 (1988), patroned by Delegate William S. Moore, Jr., of Portsmouth, establishes a joint subcommittee "to study the need for acquiring fireboats for protection of the Hampton Roads Harbor." Implicit in this charge is a second issue, that of determining funding sources for the purchase, staffing, and maintenance of the fireboats (Appendix A).

II. BACKGROUND

The issue specified in HJR 160 is one of long-standing interest to the state as a result of multi-million dollar investments in the ports through the Virginia Port Authority and its interest in the economic well-being of its residents; to the port area's localities (Hampton, Norfolk, Newport News, Chesapeake, Portsmouth, and Virginia Beach), for whom the ports are major sources of revenue and employment; and to private industrial, commercial, and residential property owners. As the ports have continued to grow, becoming one of the most important facilities in the nation, concern has mounted over the potential for a devastating fire that could not be contained only by landside fire fighting equipment and tugboats minimally equipped to fight waterside fires. Although no one disagrees that fireboats are, at the least, a desirable and, at the most, an essential component of the Hampton Roads Port facilities, debate has raged over the appropriate source of funds for fireboat acquisition and maintenance.

Two studies, one in 1979 by the Virginia State Fire Services Commission and another in 1984 by the Virginia Port Authority, both acknowledged the need for two fireboats but neither resulted in a solution to the funding problem.

To resolve this impasse, a number of budget amendments requesting money for fireboats were introduced in the 1980's, but none passed. Three amendments to the Virginia Code, one in 1983 and two in 1985, respectively, authorized the Port Authority to purchase fireboats with whatever funds were appropriated, permitted cities as well as counties to establish fire districts, and established the Fire Programs Fund to assist localities in their fire protection efforts. Finally, in 1988, HJR 160 was passed to create this study.

In an additional effort to provide fireboat funds, Mr. George Flanagan, Chairman of the Fire Protection Committee of the Hampton Roads Maritime Association, approached the federal government through state congressional representatives to inquire about federal grants and property available for fireboats; neither money nor adequate boats were available (Appendix B).

III. DISCUSSION AND PRIORITY OF ISSUES

Little disagreement exists that the ports could use two fireboats; considerable disagreement exists over how they can be financed. A 1987 editorial statement by M. Bill Peterson, president and general manager of WTKR-TV in Norfolk, asserts that:

> Hampton Roads is the only major port on the east coast without fire boats. Area fire chiefs have been asking for them for at least 15 years, but neither state nor local governments will spend the money.
>
> In the meantime, tens of millions of dollars of waterfront properties in every Hampton Roads city are only protected by tug boats and borrowed time.
>
> Time ran out for the Fort Monroe Yacht Club pier in 1981. A shallow draft fire boat would have helped a lot in fighting that fire, but there was none. A fire boat would also have been helpful at the Texaco Refinery in Chesapeake in 1983, but there was none. We have to wonder what property will be next, and how many lives will be lost for want of a fast fire boat. In firefighting, you always plan for the worst.

> It's time for local cities and the Virginia Port Authority to stop passing the buck on fire boats. WTKR-TV calls for a regional study to divide expenses, and quick action to buy the two boats to cover the harbor.
>
> Two and a half million dollars is small compared to the damage a waterfront fire could do.

With regard to funding the boats, the localities and private enterprise argue that the entire state enjoys the economic benefits of the ports and that localities, especially those with a weak tax base due to state and federal installations, can ill afford an even greater tax burden. The state counters that the Virginia Port Authority believes that its sprinkler systems and other fire suppression methods provide adequate protection to state property, that the localities are the prime recipients of port benefits, that every successful business benefits the state at large, and that providing fire protection to one major economic operation could establish a fiscally destructive precedent in that other predominantly private enterprises would expect state fire or other hazard protection.

To sort out these positions, the study consulted with the Hampton Roads Maritime Association, local fire chiefs, and representatives of local governments and businesses to:

1. Update the desired specifications for the fireboats.
2. Update the cost of purchasing either (i) two new boats or (ii) two existing boats.
3. Update the operation and maintenance costs.
4. Determine whether to buy the boat outright, contract for use and services, or negotiate a lease-purchase agreement.

Once costs and specifications were determined, the study investigated which of the following funding alternatives were acceptable: (i) state appropriation; (ii) creation of fire districts and the proportion of costs borne by each participant; (iii) combination of state and local funds through the Fire Programs Fund established by § 38.2-401; and (iv) creation of authority to administer the boats, with contributions from state, local and possibly federal governments.

The subcommittee also examined the administration of the boats. For example, questions regarding who should supply the crew, who should have title and other legal responsibility for the boats and who should pay their berth and maintenance all were answered before recommendations for purchasing the boats were formulated. Input from local governments, local fire chiefs and the Port Authority was essential to the subcommittee's deliberations.

IV. SUBCOMMITTEE ACTIVITIES

A. MEETINGS

The subcommittee held an organizational and briefing meeting at which time the subcommittee was divided into three groups to determine the specifications and costs, the funding sources, and administration for fireboats. Each of these groups met and presented their findings during subsequent meetings of the full subcommittee, which held a final meeting for the 1988 study to formulate recommendations.

B. RESEARCH

1. Studies

HAMPTON ROADS FIREBOAT STUDY COMMITTEE REPORT. As early as 1979, the Virginia State Fire Services Commission formed the Hampton Roads Fireboat Study Committee, which issued its report on November 20 of that year. This study revealed that at that time no agency had primary responsibility for marine fire protection in the Hampton Roads Port area, that the jurisdiction in which a vessel was moored in-stream was responsible for fighting fires on the vessel, and that, based on "recognized established standards," there was no adequate marine firefighting capability in the Hampton Roads area.

The report went on to analyze the costs of purchasing, staffing, and maintaining a fireboat, and thereby raised the question of who was to pay these costs, the controversy that has delayed the acquisition of fireboats ever since.

The committee recommended the purchase of two fireboats, one to be located at the northern and one at the southern extreme of the port, at an initial cost of $4.4 million, and found that operation for the boats would cost $900,000 annually. The committee recognized that no single locality could bear these expenses, recommended the consideration of a "regional concept," and that the state, through "the Virginia Port Authority, under its mandate of Port development,... should... provide this marine protection." In a response to these recommendations, the Virginia Port Authority stated that it would undertake the project, provided that funds "were made available outside of the funds currently available or funds requested for the next biennium."

MARINE FIRE FIGHTING CONTINGENCY PLAN. Additional money was not made available, and the Hampton Roads Maritime Association formed a Fire Protection Committee to study and develop plans that could improve the firefighting capability in the port area. By November of 1982 this committee had formulated the Marine Fire Fighting Contingency Plan in which the seven area jurisdictions (Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, Suffolk and Virginia Beach), the Hampton Roads Maritime Association, the United States Coast Guard, the U. S. Naval Station, the Norfolk Naval Shipyard, the U. S. Amphibious Base at Little Creek, the Newport News Shipyard, and the Department of Fire Programs all participated. This plan established mutual assistance agreements; delineated responsibilities and procedures; ensured cooperation; listed contacts by name, organization, availability, and phone number; described the firefighting capability of each signatory; listed the names and phone numbers of each port facility; and provided technical information tables. The plan was updated in 1988 to include new telephone numbers, lists of new equipment, and changed firefighting capacity.

The fire chiefs and the Maritime Association pointed out, however, that U. S. Navy tugboats, which provide the only source of waterside firefighting, are not adequate to the ports' needs. The tugs are used primarily for towing and, therefore, their response times cannot be predetermined; forty-five minutes are usually required to arrive at the scene of an emergency. At times other than the regular 40-hour work week, at least 30 additional minutes are needed to assemble a crew, and more than three hours may elapse before a crew can be assembled and a tug can reach the fire. In addition, tugs are capable of traveling only some 8-12 knots per hour, produce damaging wakes, and draw some 12 feet or more, too deep to reach property located on shallow water.

The Fire Services Commission report included performance specifications for fireboats. Among them are a dash speed greater than 30 knots, a low wake at high speeds, and a draft of four feet or less. Two fast boats would also reduce the response time to 15 minutes.

THE ALTERNATIVE METHODS OF ACQUIRING TWO FIREBOAT UNITS FOR THE HAMPTON ROADS AREA. The Port Authority study, directed by a 1984 Senate budget amendment, includes the Fire Services Commission Report as Attachment A, the Hampton Roads Marine Fire Fighting Contingency Plan as Attachment B, and the Performance Specifications for a Multipurpose Harbor Service Craft as Attachment C (updated form, Appendix C). The report discusses the project's history and background, fireboat performance criteria, and alternatives for equipment and their operation, method of financing, and funding sources.

Citing the 150-mile shoreline of the port area, the existence of over 300 separate industrial operations and thousands of residential properties, and the occurrence of 1700 fires over a five-year period that could have been fought with fireboats, the report concludes that "the area would be better served by a two-boat system with one located on the south side of Hampton Roads and one located on the north side of the harbor."

In the discussion of equipment, which analyzes the advantages and disadvantages of custom construction, stock hull design using new construction, stock hull design using an existing vessel, and a centrally coordinated volunteer system using state-supplied equipment (tugs), the report recommends use of an aluminum planing craft of "crew boat" type that would meet the specifications set out by the Fire Services Commission. The report seems to favor a stock hull design, and notes that new construction would run $2.3 million while existing construction would run $1.8 million.

The report compares operation of a boat with a state-employed, full-time pilot and mechanic on each boat, which would involve some 32 full-time employees, at a cost of $755,000 per year, and operation via contract with a proven organization, which would probably be the less expensive alternative. The report recommends negotiating an operating contract that would be administered by the Port Authority with the advice of the local fire departments.

The method of financing could be, in order of preference, by appropriation, lease purchase, or short-term bond issue. The report then lists three possible funding sources: state funding from the General Fund; a combined user fee, based on facility tax valuation (excluding land) for three blocks behind water navigable by the fire boats to be collected in a specifically created waterfront fire district, and a harbor fee ($50 - $175 in other ports) to be collected from each ocean-going vessel that uses the terminals in the fire districts; and finally, Virginia Port Authority revenues. However, the Port Authority's revenues are obligated for maintenance of existing facilities as well as for security for bonds that funded land acquisition, equipment, and facility improvements. The Board of Commissioners of the Virginia Port Authority moved on July 19, 1979, that upon General Assembly request, the Authority hold title to these boats and "provide berthing, maintenance, and a two-man crew, all at no expense to the Authority's budget as now planned."

When the General Assembly convened in 1985, the Board of Commissioners of the Port Authority, in a letter to the Senate Finance Committee, submitted the following amendments to the report:

(1) the ownership and crewing of the Fire Boats to be handled by "Establishment of a Fire District" as provided in Virginia Code Section 27-23.1 with the code being broadened to include cities as well as counties;

(2) the General Assembly provide general funds to the Fire District for the purchase of the two Fire Boats and for the first year's operating expenditures;

(3) that local fees be established as allowed in the Code referenced above, and as the Fire District finds necessary in order to support future operating expenses;

(4) that the Fire District solicit additional funds to support future operations from other sources such as:

(a) Federal Grants,

(b) Industrial and Government facilities,

(c) In-kind contributions for labor and maintenance and operation from members of the Fire District.

In March of 1988, Lt. Michael V. Franchini, in association with the Maritime Association, completed a detailed study entitled Marine Terminal Compliance with the National Fire Protection Association Standard for Construction and Fire Protection of Marine Terminals, Piers, and Wharves, 1985 edition.

This report measures compliance with the National Fire Protection Association (NFPA) standard (NFPA 307 - 1985) for construction and fire protection of 21 different marine terminals and discovered that:

1. Only 2 out of 21 terminal operators had had NFPA 307-1985 applied to their terminals by the "authority having jurisdiction." Most operators were not familiar with the standard.

2. Only one terminal, out of the 11 that had combustible pier substructures, complied with the requirements for these substructures.

3. Many terminals in the survey had piers with combustible substructures. None of these piers allowed access to fire department equipment out to the end. Without fire lanes to the vessel berth, firefighters would need to carry hundreds of feet of hose, extinguishing agents, tools, air bottles, etc. all the way down the pier to fight a fire on a vessel. This could waste precious time in fighting fire.

4. Only one terminal in the survey had a separate hazardous material storage area for containers.

5. All the marine terminals in this survey had designated an employee as a safety officer. However, in some cases with the lack of emphasis and priority placed on this employee's assigned tasks, this designation meant very little.

As a result of these findings, the report made, among others, the following recommendations:

1. The Coast Guard and the NFPA should better publicize NFPA 307-1985. The Coast Guard should do this, if not as part of any new regulations, as guidance and information to Captains of the Port and terminal operators in the Marine Safety Manual.

2. Many marine terminals have combustible pier substructures and most of them did not meet the standard's requirement. The Coast Guard's waterfront facilities regulations should include the requirements in NFPA 307-1985 concerning combustible pier substructures. An exception for small combustible piers should be included in the standard and the regulations.

3. A greater emphasis needs to be placed on the handling and storing of explosives (other than Class A) and fireworks on marine terminals.

4. Many piers in the survey did not allow access to fire department vehicles down to the vessel berth. Both the standard and any revision to the waterfront facilities regulations must include a requirement for new piers only to have fire lanes to the vessel berth. On many terminals, the small walkway used to reach the vessel berths would barely provide access to firefighters. Fires on the vessel or pier cannot be fought by firefighters carrying hoses, air bottles, forcible entry tools, nozzles, etc. hundreds of yards to the fire.

5. General cargo terminals are not storing those containers carrying certain hazardous materials in separate locations on the terminal. A solution must be found for the safe storage on the terminal of containers carrying hazardous materials.

6. An international shore connection that connects to the terminal's fire main and to the vessel's international shore connection would serve the same purpose as the fire department connection found on the outside of most commercial buildings. Most allow firefighters to pump water into the sprinkler or fire main systems of the burning structure.

   This report sets out in detail the firefighting deficiencies of the area and the enormous potential for catastrophe that could be mitigated by appropriate multipurpose boats.

2. Legislation

In response to the continued concern for fire safety expressed in the Fire Services Commission Report and the Marine Fire Fighting Contingency Plan, Senate Bill 196 (1983), added § 62.1-132.11:1 to permit the Virginia Port Authority to take whatever steps were necessary to combat fires in and near the harbor and to use whatever funds were appropriated to purchase, operate, and maintain a fireboat (Appendix D). An unsuccessful budget amendment for $2,000,000 toward purchasing two fireboats was introduced (Appendix E).

In 1984, a budget amendment to provide $2.3 million to buy two fireboats and $150,000 to man and maintain them was introduced. These amendments survived as a request directing the Virginia Port Authority to identify "options for providing fire protection services to the ports in the Hampton Roads Metropolitan area" (Appendix F).

No budgetary legislation was introduced in 1985, but House Bill 1738 amended § 27-23.1 to allow cities as well as counties to establish fire districts and thereby to allow the localities in the Hampton Roads area to develop a regional approach to waterside fighting (Appendix G). In 1986 a budget amendment that would appropriate $2.2 million for one fireboat and $450,000 for its operation was introduced (Appendix H). Another budget amendment that year requested $1,150,100 for the purchase of one boat and construction of a berth and crew quarters, and $377,355 in the second year for personnel and operating costs, all from amounts appropriated to the Port Authority (Appendix I).

In 1987 a budget amendment was submitted for $2,500,000, to be included in Port Authority moneys, for "costs associated with purchasing and operating two specifically equipped firefighting vessels" (Appendix J), and in 1988, a budget amendment was requested to provide $1,250,000, in amounts to the Port Authority, for the previously stated fireboat costs (Appendix K). All amendments failed, and HJR 160, authorizing this study, was introduced and passed.

In addition to legislation dealing specifically with fireboats or waterside fire fighting, § 38.2-401, passed in 1985, establishes a Fire Programs Fund that is applicable to waterside fire fighting (Appendix L).

3. Fireboat Provisions at Other Ports

The Virginia Port Authority recently surveyed major East Coast ports to determine their fire fighting capacity and how it is funded. A much larger survey, conducted by the Los Angeles Fire Department in 1986, details maritime firefighting capabilities, authority, and city statistics for 30 American and Canadian ports. A subcommittee survey of 16 ports sets out funding sources and authority. These surveys appear in Appendices M, N, and O, respectively.

V. FINDINGS AND CONCLUSIONS

A. Specifications and Costs

The subcommittee found that for only 9 of the more than 1,700 fires that occurred between 1979 and 1987, $18,543,500 in property damage occurred. Had two fireboats been available, at an initial cost of $2,062,466, and an annual crew and maintenance cost of another $1,035,000, the loss would have been reduced by countless dollars. This information only supports the assertion that Hampton Roads, while perhaps the largest port in the nation, offers the least adequate waterside fire protection for a large port. A description of the number of piers, wharves and docks (226) and their construction (91.15% of combustible material) appears as Appendix P, and provides further evidence of the need for expanded waterside fire protection. In addition, Appendix Q, which lists fireboat specifications, tallies existing firefighting capabilities to further reveal the difference between actual and necessary capabilities.

To remedy this deficiency, the subcommittee, after examining the Los Angeles study's table of specifications included in Appendix N and contacting numerous shipbuilding corporations, settled upon 42 specifications for a fireboat adequate to the port's requirements, at a cost of $1,031,233 per boat (Appendix C). Annual maintenance would cost $400,000 per boat, and two pilots and two engineers per boat, to provide round-the-clock readiness, would cost $117,500 per boat. Because of the size of the ports, with some 150 miles of shoreline, and the length of time for firefighting tugs to reach a fire (as long as three hours), the subcommittee felt that two fireboats, one to be stationed at the north and the other at the south of the port, would be required. This echoes the findings and recommendations of the previous studies.

The subcommittee also found that a well-equipped fireboat could perform duties other than fighting fires and hence would not be idle during periods between fires. The shallow draft of the boat would enable it to patrol the area, and its dash speed would provide a quick response to both law enforcement and rescue missions. Increasing demands on states and localities to provide means for mitigating environmental hazards emergencies further indicate the need for a much-enhanced waterside firefighting capability in the area.

Administrative Entity and Funding

A survey of 16 ports (see Appendix O) found that none enjoy total state support for maritime firefighting, four charge harbor fees to supplement city funds, two (Tampa and New Orleans) are administered by self-supporting independent authorities that generate funds primarily by bond issues and rentals, only one (Baltimore) receives partial state funding, and most depend

VII. APPENDICES

GENERAL ASSEMBLY OF VIRGINIA -- 1988 SESSION

HOUSE JOINT RESOLUTION NO. 160

Establishing a joint subcommittee to study the need for acquiring fire boats for protection of the Hampton Roads Harbor.

Agreed to by the House of Delegates, February 16, 1988
Agreed to by the Senate, March 9, 1988

WHEREAS, the Hampton Roads Harbor is the fastest growing harbor in the United States; and

WHEREAS, the Commonwealth of Virginia, through the Virginia Port Authority, has invested hundreds of millions of dollars in state-owned waterfront property; and

WHEREAS, private investment in waterfront property for residential, commercial and industrial purposes is in excess of one billion dollars; and

WHEREAS, billions of dollars in trade goods pass through Hampton Roads each year; and

WHEREAS, the cities surrounding Hampton Roads are severely limited in their ability to combat waterfront fires due to the lack of adequate fire boat equipment; and

WHEREAS, delaying the acquisition of such firefighting equipment to serve Hampton Roads only extends the risk of a major conflagration which could not be contained by existing methods and equipment for firefighting; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That a joint subcommittee is hereby established to study the need for acquiring fire boats for protection of the Hampton Roads Harbor.

The joint subcommittee shall consist of two members of the House of Delegates and a representative of the Maritime Association to be appointed by the Speaker of the House, two members of the Senate to be appointed by the Senate Committee on Privileges and Elections, the fire chiefs of the Cities of Portsmouth, Norfolk, Chesapeake, Hampton and Newport News, and the Directors of the Virginia Port Authority and the Department of Emergency Services.

The joint subcommittee shall complete its work in time to submit its recommendations to the 1989 Session of the General Assembly.

The indirect cost of this study is estimated to be $10,650; the direct cost of this study shall not exceed $6,480.

APPENDIX B

February 26, 1988

Honorable John W. Warner, Jr.
United States Senator

Honorable Paul S. Trible, Jr.
United States Senator

Dear Senators Warner and Trible:

Over the years, our committee has explored various schemes for obtaining a fireboat for the Port of Hampton Roads. The manning and training of crews for such a boat is obtainable if funds can be found for acquisition.

You may be aware that the Virginia Port Authority has identified performance specifications and characteristics of a multi-purpose harbor service craft.

You are also probably aware that the Fifth Naval District here has greatly reduced the number of naval tugboats which were equipped with fire monitors. When combining the number of commercial and military vessels using this harbor, it is one of the busiest ports in the United States.

Our committee would appreciate your determining if there are any federal programs establishing a grant to help fund the acquisition of a fireboat by a state or if the Maritime Administration has any surplus offshore crew boats under the Title XI Program.

Sincerely,

GEORGE T. FLANAGAN
Chairman
Fire Protection Committee

GTF/dwp

bc: Mr. George T. Flanagan

General Services Administration
Federal Supply Service
Washington, DC 20406

MAR 22 1988

Dear Mr. Bateman:

Thank you for your letter of March 7, 1988, on behalf of Mr. George T. Flanagan, Chairman of the Fire Protection Committee for the Hampton Roads Maritime Association. Mr. Flanagan is interested in obtaining a surplus Federal fireboat.

The provisions of the Federal Property and Administrative Services Act of 1949, as amended, provide for the donation of surplus personal property to public agencies for public purposes and to certain nonprofit, tax-exempt activities. In accordance with the Act, agencies have been established in each State to distribute surplus property to eligible recipients. To cover agency expenses, recipients are levied service charges on such property. In Virginia, this agency is under the supervision of Mr. Marquis J. Bolton, Administrator, Chief Executive Officer, State/Federal Surplus Program, Commonwealth of Virginia, 1910 Darbytown Road, Richmond, Virginia 23231, telephone (804) 786-7268. Mr. Flanagan should contact Mr. Bolton, who will assist him in determining his eligibility for donation of surplus personal property.

Periodically, the General Services Administration and the Department of Defense (DOD) offer Federal surplus personal property for sale at various locations throughout the country. DOD has recently disposed of several tugboats in the Norfolk area, and it is doubtful that additional tugboats will become available. No fireboats are currently available. The brochures enclosed provide additional information on participation in the surplus sales and donation programs.

Mr. Flanagan will need to contact the Federal Maritime Administration regarding the availability of grants to fund fireboats. The Department of the Treasury has authority to sell property after judicial forfeiture under the Title XI Program.

Sincerely,

DONALD C. J. GRAY
Commissioner

The Honorable
Herbert H. Bateman
House of Representatives
Washington, DC 20515-4601

Enclosures

Department of Transportation
Maritime Administration

Administrator

400 Seventh Street, S.W.
Washington, D.C. 20590

APR 0 6 1988

Honorable Paul Trible
United States Senate
Washington, D.C. 20510

Dear Senator Trible:

This is in response to your inquiry of March 18, 1988, on behalf of Hampton Roads Maritime Association, concerning the need of a fireboat for the Port of Hampton Roads.

We recently supplied the Hampton Roads Maritime Association with a list of vessels that may be available for sale as a result of foreclosures under the Title XI program. Some of these vessels might be suitable for conversion to a fireboat. The Maritime Administration typically makes these vessels available to the public after we acquire title through foreclosure. We would be happy to consider any offer by the Hampton Roads Maritime Association. They may contact Harry Haskins of my staff on (202) 366-1895 for any additional information. Although we are flexible on the acquisition costs of the repossessed vessels, there are no funds available from this Agency for the acquisition or conversion of vessels.

In addition, the Maritime Administration has furnished technical information on marine fire protection to the Hampton Roads Maritime Association. The enclosed letter was sent to Mr. George Flanagan as per his telephone request on March 18, 1988.

I trust I have been responsive to your request. Please contact me if I can be of any further assistance.

Sincerely,

for JOHN GAUGHAN
Maritime Administrator

Enclosure

APPENDIX C

PERFORMANCE SPECIFICATIONS

"VIPER"

MULTIPURPOSE HARBOR SERVICE CRAFT

1) Sustain significant 4' sea state: The "Viper" is designed to run and hold station in a 4' sea state while operating in any of the multipurpose roles required for the Harbor Service Craft.

2) Dash speed over 30 knots: Dash speed in access of 30 kts. is attained through the use of 3 8V92TA Detroit Diesel engines coupled to Jet drives. (Engineering design speed is 45 MPH at full power, however this must confirmed under actual sea trials)

3) Low wake at higher speeds:
The hull is designed to minimize wake at all speeds.

4) Sustained 1 to 12 knot patrol speeds: Using the center engine only the "Viper" can operate at a sustained patrol speed of 1 to 12 kts. in access of 50 hrs.

5) Rugged exterior construction: Construction is of marine grade aluminum with square tube stringers and reinforced bow, keel and stern.

6) Construction and safety standards:
Built with the same materials and to the same standards which have proven so successful in off shore crew, utility, and cargo boats operating in the North Atlantic.

7) Salt water type construction: Anti corrosion is accomplished through the installation of an Electrocatalytic Cathodec protection system for the hull. All interior water passages are stainless steel.

8) Fully operated by 2 man crew: The "Viper" is designed to be fully operational by a 2 man crew, and fulfill all basic mission requirements without additional personnel.

9) Use fire retardant materials or protective design:
All hull and superstructure of the craft are made of metal and are thus fire retardent, further the boat is equipped with our own water curtain protection system which is accomplished through the use of a pressurized hand rail and nozzles located to encapsulate the craft in a shower of water.

10) Operation in shallow water (4' or less): The "Viper" is designed to operate in water less than 4' in depth. (2 1/2 to 3 1/2 depending on load)

11) Maximum solid height 14': Maximum solid hight from water line to top of bridge is less than 14'. Any item such as radar dome, antenna etc. in access of 14' will be designed to fold to allow clearance.

12) Communications system: Standard equipment will be Marine radio telephone, UHF or VHF radios.

13) Navigation aids: Nav-aids will include Radar, Loran, and fathometer.

14) Working/Emergency Lights: Lights will include Coast Guard approved running and identification lights as well as Flood and Search lights both forward and aft.

15) Quick start mechanical system: Power and propulsion plants are Detroit Marine Diesels proven in millions of hours of operation in vessels of all sizes and in all types of weather and operating conditions.

16) Reliable and dependable operation: Every consideration has been given to safety and reliable, dependable operation in the design and execution of the "Viper". Realizing the need for a "User Friendly" craft which will not overwhelm a 2 man crew in an emergency situation, the structure will actually be overbuilt for safety and the controls will be fully automated, and standard in their operation.

17) Minimal capital costs: Every effort has been made to minimize capitol costs by using "industry standard" parts and equipment. The fact that the "Viper" will be "made in Virginia" is a plus in that transportation, state and road taxes will not have to be paid to transport the vessel here. The labor costs paid and monies used to purchase materials will also remain in Virginia and while this alone does not decrease the capital expenditure it does contribute to the overall financial health of the State economy.

18) Minimal Operating costs: Economy of operation has been addressed in the selection and design of the propulsion system. All three engines are available for use during a mission which requires maximum speed, but this is less than 5% of the crafts total operating time. With the remaining 95% of the mission time being devoted to routine slow speed patrol. The two outboard engines are shut down and the low speed operation is accomplished with the center engine only. This represents extremely economical operation for a vessel of this size. Routine maintenance can also be performed by the crew as all systems will be readily accessible.

19) 20 year hull life expectancy: The "Viper" is designed to deliver maximum mission capability throughout it's 20 year life expectancy.

20) Day crew facilities: Included in the crew quarters are marine head, bunk, gally, which includes sink, marine stove, refrigerator, and coffee maker.

21) Reserve payload (crew & rescuees): In addition to the bunk in the crew quarters, the Bridge/Cabin will offer ample room for additional personnel through extra seats and two folding emergency/medical bunks which can also serve as seats or beds. The addition of extra personnel should pose no noticeable weight penalty on the craft.

22) Carry small boat: Provisions are made for a 12 foot aluminum boat which will be stowed inverted or upright on the aft deck and can be launched from the side or stern.

23) Rigged for push or tow: The bow is stressed for push operations and a rubber bumper is installed on the bow exterior. Twin cleats mounted on hard points on the port and starboard sides of the stern are rigged for tow operations.

24) 5,500 GPM (@ 150 PSI) fire pumping: Fire pumping capacity of the "Viper" is 6000 GPM at 150 PSI, this is supplied by two 3000 GPM pumps, each driven by one of the outboard engines and can be discharged by way of the six deck and bow mounted monitors. ACTUAL PUMPING CAPACITY IS 150% OF THE RATED CAPACITY (IF SUFFICIENT WATER EXISTS BELOW THE HULL 3 TO 4 FT.) THIS BRINGS THE "Vipers" ACTUAL CAPACITY TO 9000 GPM.

25) 8 hrs. endurance for fire pumping: With full tanks the "viper" will be able to maintain station and pump at maximum capacity in excess of 10 hrs.

26) Multiple monitors (automated): Monitors include 1 299-20XBHC, 5 Scorpion B294-01, 1 Tele-Squirt.

.27) Manifold outlets: Located on the port and starboard sides of the craft are manifolds each of which will be able to discharge the maximum pump capacity to land lines and act as a waterborne pumper.

28) Protective water screen: To protect the craft and its crew from excessive heat, the "Viper" will utilize the handrail as a pressurized water carrier with spray nozzles located a various points to provide a water curtain to the hull, deck and bridge. This system will be operated as a bleed system off the main pumps.

29) Carry fire fighting tools: Exterior and interior lockers are made available for all appropriate fire fighting equipment. A 1 1/2 inch hose reel is located midships of the after deck and can be deployed to port or starboard.

30) Station keeping via propulsion: Station keeping is provided by the center engine jet drive, and offers a high degree of maneuverability. Center engine power available for station keeping is 750 HP. Bow position is maintained by means of a bow thruster of 100 HP. The ability of the "Viper" to maintain station under the most extreme conditions should be unequaled.

31) Shallow water fire pumping capacity: Pump pick-up locations are designed to allow full pump capacity in any water the hull can negotiate.

32) Access to larger vessel decks: The "Viper" is equipped with a Tele-Squirt, which will extend up to 50 ft. The Tele-Squirt is also equipped with a ladder which would allow for boarding larger vessels.

33) Water level and higher monitors: The "Viper" is equipped with three monitors mounted at deck level, two at bridge level, one telescoping monitor, and one bow monitor at water level for fighting under pier fires.

34) Aqueous film forming foaming system: 500 lbs. of foam concentrate will be carried along with foam handling gear, and can be discharged through deck nozzles or hose.

36) Rescue well or platform: A rescue and work platform at the stern of the vessel will provide water level access to aid in rescue work.

37) Rescue lift device (automated): A swinging lift arm shall be mounted on the stern, can be operated by one man and will be able to lift to 500 lbs.

38) Rescue and first aid gear: Rescue gear will be stored in lockers on deck just aft of the cabin. First aid gear including resuscitator unit may be located in cabinets inside the aft section of the bridge.

39) Alternate control station: No alternate station is provided as the bridge is completely surrounded by glass with clear and unobstructed view of all deck areas from the pilots helm station.

40) Enclosed first aid area: The aft section of the bridge shall provide an enclosed first aid area complete with folding emergency/medical beds and provisions made for the storage of the required first aid gear.

41) Dewatering system: Dewatering capabilities shall be installed with a minimum capacity of 500 GPM.

42) Security and evidence locker: A lockable security and evidence locker will be located in the cabin area.

APPENDIX D

§ 62.1-132.11:1. Prevention and suppression of fire. — The Authority may take such steps as necessary, not inconsistent with other provisions of law, to prevent and suppress fires on the waters of Hampton Roads, its tributaries and other waters in the vicinity of Hampton Roads, and on property adjacent to such waters which is accessible to a fire boat. In furtherance of this purpose, the Authority may, out of such funds as may become available, purchase, equip, maintain, use, and provide and train a crew or crews for a fire boat or fire boats. (1983, c. 303.)

TRANSPORTATION

1983

VIRGINIA PORT AUTHORITY

Patron: Babalas/Walker/Moody/Andrews

Item 653	0	2,000,000	GF
	0	0	NGF

Page 264, line 33, strike "9,239,670" and insert "11,239,670".

Page 264, line 55, insert:

"Out of the amounts for security services shall be paid $2,000,000 in the second year for the purpose of acquiring two fire boats."

(This amendment appropriates $2,000,000 to the Virginia Port Authority for the purpose of acquiring two fire boats.)

* * *

		Item Details($) First Year	Item Details($) Second Year	Appropriations($) First Year	Appropriations($) Second Year
	Fund Sources :General	~~$120,000~~ *$620,000*	~~$120,000~~ *$620,000*		
	Highway Maintenance and Construction	~~$939,494,165~~ *$939,515,165*	~~$964,479,985~~ *$964,500,985*		
	Trust and Agency	$17,696,900	$15,716,400		
	Debt Service	$26,386,200	$33,616,700		

§ 1-132. VIRGINIA PORT AUTHORITY (407)

7.	Commerce and Agricultural Markets Development and Improvement (5320000)			$3,675,390	$3,859,855
	Commerce Advertising (5320200)	$484,480	$514,930		
	National and International Trade Services (5320600)	$3,015,810	$3,164,655		
	Port Traffic Rate Management (5320700)	$175,100	$180,270		
	Fund Sources : General	$3,256,090	$3,402,890		
	Special	$419,300	$456,965		

Authority : Title 62.1, Chapter 10, Code of Virginia.

Out of the amounts for National and International Trade Services shall be paid the salary of the Executive Director, $50,341 the first year and $50,341 the second year, as provided in Section 4-6.01.

Also, out of the amount for National and International Trade Services, the Executive Director may at his discretion authorize, in writing, the expenditure for such expenses in connection with promotional activities as are commonly borne by business organizations - a sum not to exceed $11,400 each year.

Funds included in this program for advertising shall be encumbered and used for no other purpose without the prior approval of the Governor.

The Authority, in its absolute sole discretion may renew or extend any existing lease of its port facilities if it finds, in its absolute sole discretion, that it is in the best interests of the Commonwealth to do so.

The Virginia Port Authority is hereby directed to develop a plan, in consultation with the localities of the Hampton Roads area, identifying options for providing fire protection services to the ports in the Hampton Roads metropolitan area. The plan shall be reported to the General Assembly by December 1, 1984.

648.	Water Transportation System Planning (6270000)			$265,545	$271,475
	Port Facilities Planning (6270100)	$265,545	$271,475		
	Fund Sources : General	$265,545	$271,475		

Authority : Title 62.1, Chapter 10, Code of Virginia.

649.	Port and Port Facility Management (6260000)			$8,564,960	$8,633,475
	Maintenance of Ports and Facilities (6260100)	$780,075	$846,280		
	Port Facilities Acquisition (6260200)	$5,173,140	$5,118,090		
	Security Services (6260300)	$2,508,345	$2,554,895		
	Terminal Administration (6260400)	$103,400	$114,210		
	Fund Sources : General	$7,373,850	$7,365,350		
	Special	$1,191,110	$1,268,125		

Authority : Title 62.1, Chapter 10, Code of Virginia.

§ 27-23.1. Establishment of fire or rescue zones or districts; tax levies. — The governing bodies of the several cities or counties of this Commonwealth may create and establish by defined metes and bounds, fire or rescue zones or districts in such cities or counties, within which may be located and established one or more fire departments and/or rescue squads, to be equipped with apparatus for fighting fires and protecting property and human life within such zones or districts from loss or damage by fire, illness or injury. The creation of fire zones or districts as it relates to cities for the purposes of this section shall mean for the purchase and/or establishment of fire boats and for no other purpose.

In the event of the creation of such zones or districts in any city or county, the city or county governing body may acquire, in the name of the city or county, real or personal property to be devoted to the uses aforesaid, and shall prescribe rules and regulations for the proper management, control and conduct thereof. Such governing body shall also have authority to contract with, or secure the services of, any individual corporation, organization or municipal corporation, or any volunteer fire fighters for such fire or rescue protection as may be required.

To raise funds for the purposes aforesaid, the governing body of any city or county in which such zones or districts are established may levy annually a tax on the assessed value of all property real and personal within such zones or districts, subject to local taxation, which tax shall be extended and collected as other city or county taxes are extended and collected. In any city or county having a population between 25,000 and 25,500, the maximum rate of tax under this section shall be 30¢ on the $100 of assessed value.

The amount realized from such levy shall be kept separate from all other moneys of the city or county and shall be applied to no other purpose than the maintenance and operation of the fire departments and rescue squads established under the provisions of this section. (1970, c. 187; 1972, c. 252; 1977, c. 326; 1978, c. 682; 1985, c. 343.)

1986

VIRGINIA PORT AUTHORITY

PATRON: Walker/Babalas/Parker A6430001

Item 643	0	450,000	GF

Page 192, line 1, strike "14,928,620" and insert "15,378,620".

(This amendment appropriates $450,000 in the second year for the maintenance of the fireboat purchased during the 1986-87 biennium.)

* * *

REQUEST FOR BUDGET BILL AMENDMENT
TO HOUSE BILL 30 AS INTRODUCED

DATE: 1/23/86

ITEM: 64.
AMEND. #: 1

PATRON: Heilig, George H., Jr.

VIRGINIA PORT AUTHORITY(407)

PORT AND PORT FACILITY MANAGEMENT(626)

APPROPRIATION AMOUNTS BY FUND GROUP	1986-87	1987-88	BIEN. TOTA
INCR/(DECR) REQUESTED:			
GENERAL	1,150,100	377,355	1,527,45
NON-GENERAL	0	0	
ALL FUNDS	1,150,100	377,355	1,527,45
INCR/(DECR) IN EMPLOYMENT:	0.00	16.00	

LANGUAGE:

Page 192, line 1, strike "15,044,960" and "14,928,620" and insert "16,195,070" and "15,305,975".

Page 192, line 10, insert:

"Out of the amounts for Port and Port Facilities Management sha be paid $1,150,100 in the first year for the purchase of a fireboat construction of one berth and crew quarters and $377,355 in the secon year for personnel and operating costs."

JUSTIFICATION FOR REQUEST:

(This amendment is self-explanatory.)

APPENDIX J

REQUEST FOR BUDGET BILL AMENDMENT
TO HOUSE BILL 1050 AS INTRODUCED

DATE: 1/17/87

ITEM: 643
AMEND. #: 2

PATRON: Moore, W. S., Jr.

VIRGINIA PORT AUTHORITY(407)

PORT AND PORT FACILITY MANAGEMENT(626)

APPROPRIATION AMOUNTS BY FUND GROUP	1986-87	1987-88	BIEN. TOTAL
INCR/(DECR) REQUESTED:			
GENERAL	0	2,500,000	2,500,000
NON-GENERAL	0	0	0
ALL FUNDS	0	2,500,000	2,500,000
INCR/(DECR) IN EMPLOYMENT:	0.00	32.00	

LANGUAGE:

Page 247, line 33, strike "16,691,219" and insert "19,191,219".
Page 247, line 59, insert:
"Included in the amounts for Port and Port Facility Mangement is $2,500,000 for costs associated with purchasing and operating two specially equipped firefighting vessels."

JUSTIFICATION FOR REQUEST:

(This amendment is self-explanatory.)

APPENDIX K

REQUEST FOR BUDGET BILL AMENDMENT
TO HOUSE BILL 30 AS INTRODUCED

DATE: 1/25/88

ITEM: 653
AMEND. #: 1
PATRON: W. S. Moore, Jr.

VIRGINIA PORT AUTHORITY(407)

PORT AND PORT FACILITY MANAGEMENT(626)

APPROPRIATION AMOUNTS BY FUND GROUP	1988-89	1989-90	BIEN. TOTAL
INCR/(DECR) REQUESTED:			
GENERAL	1,250,000	1,250,000	2,500,000
NON-GENERAL	0	0	0
ALL FUNDS	1,250,000	1,250,000	2,500,000

LANGUAGE:

Page 209, line 61, strike "15,621,390" and insert "16,871,390"
Page 209, line 61, strike "15,691,550" and insert "16,941,550"

JUSTIFICATION FOR REQUEST:

(Included in the amounts for Port and Port Facility Management is $1,250,000 each year in general funds for costs associated with purchasing and operating two specially equipped fire boats.)

§ 38.2-401. Fire Programs Fund. — A. There is hereby established a Fire Programs Fund which shall be administered by the Department of Fire Programs under policies established by the Virginia Fire Services Board. In order to maintain the Fund, the Commission shall annually assess against all licensed insurance companies doing business in this Commonwealth by writing any type of insurance as defined in §§ 38.2-110, 38.2-111, 38.2-126, 38.2-130 and 38.2-131 and those combination policies as defined in § 38.2-1921 that contain insurance as defined in §§ 38.2-110, 38.2-111 and 38.2-126, an assessment in the amount of eight-tenths of one percent of the total direct gross premium income for such insurance. Such assessment shall be apportioned, assessed and paid as prescribed by § 38.2-403. In any year in which a company has no direct gross premium income or in which its direct gross premium income is insufficient to produce at the rate of assessment prescribed by law an amount equal to or in excess of $100, there shall be so apportioned and assessed against such company a contribution of $100. The Commission shall be reimbursed from the Fund for all expenses necessary for the administration of this section.

B. Seventy-five percent of the total amount collected annually pursuant to this section shall be allocated to the several counties, cities and towns of the Commonwealth providing fire service operations to be used for the improvement of volunteer and salaried fire services in each of the receiving localities. Funds allocated to the counties, cities and towns pursuant to this subsection shall not be used directly or indirectly to supplant or replace any other funds appropriated by the counties, cities and towns for fire service operations. Such funds shall be used solely for the purposes of fire service training, constructing, improving and expanding regional or local fire service training facilities, purchasing fire-fighting equipment or purchasing protective clothing and protective equipment for fire-fighting personnel. Notwithstanding any other provision of the Code, when localities use such funds to construct, improve or expand local fire service training facilities, all fire-related training provided at such training facilities shall be by instructors certified and approved according to regulations developed by the Department of Fire Programs and approved by the Virginia Fire Services Board. Distribution of this seventy-five percent of the Fund shall be made on the basis of population as provided for in § 4-22; however, no county, city or town eligible for such funds shall receive less than $3,000.

C. The remainder of this Fund shall be used for the purposes of underwriting the costs of the operation of the Department of Fire Programs and to construct, improve and expand the regional fire training facilities, consistent with the provisions of § 9-155.1. (1985, c. 545, § 38.1-44.1; 1986, cc. 60, 562; 1988, c. 336.)

EAST COAST PORTS
FIREBOAT ANALYSIS

Georgia - Savannah Harbor Area

Administration:

The city of Savannah owns the harbor area fireboat and administers the program through the city Fire Department.

Capacity:

The city of Savannah has a converted tug which can access all Savannah harbor areas.

Manpower:

The fire fighting tug is manned by an engine house in downtown Savannah.

Funding:

General funds of the city provide maintenance, and the Fire Department budget provides operations. No state or federal funds support the program.

Source: Mr. Goolsby, Assistant Fire Chief,
City of Savannah, GA
(912) 233-7744

Maryland - Baltimore Harbor Area

Administration:

The city of Baltimore owns the harbor fireboats and administers the program through the city Fire Department.

Capacity:

The city owns two (2) active fireboats with 11-foot and 8-foot drafts and 12,000 gpm pumping capacity, and has two (2) older boats in reserve. The city has on order one (1) "quick hit" shallow draft (1') fireboat to handle marina-related small craft fires.

Manpower:

Sixty positions man the two (2) boats on a 24-hour basis.

Funding:

The annual budget of $4 million is supported by general funds of the city of Baltimore and $1.8 million of state funds.

Source: Captain Patrick Flynn, Public Information Officer,
Baltimore, MD, Fire Department
(301) 396-5616

New York - New York/New Jersey Harbor Area

Administration:

The city of New York owns fireboats and operates the project through the city Fire Department, Marine Division.

Capacity:

The city owns seven (7) fireboats - six (6) are in excess of 100 feet long and all draft 9 feet; one (1) is a shallow draft (4 feet) fireboat 52 feet long. One of the deeper draft boats can pump 20,000 gpm. All boats are in excess of 50 years old. The city is currently performing an assessment to determine what is needed to upgrade fire protection for the New York harbor.

Manpower:

The tugs are manned by 150 full-time positions of the Fire Department, Marine Division.

Funding:

The city of New York provides general funds to administer the program through the Fire Department budget of $5.5 million annually.

Comments:

The New York Fire Department provides service to New Jersey for no remuneration.

Source: John O'Hagen, Fire Chief Marine Division,
New York Fire Department
(212) 570-4285

North Carolina - Wilmington Harbor Area

Administration:

The city of Wilmington owns a fireboat and administers the program through the city Fire Department.

Capacity:

The city owns one (1) fireboat, 61 feet long with 4-foot draft and 4,000 gpm pumping capacity, and one (1) 25-foot cabin boat which is used for rescue purposes only.

Manpower:

The fireboat is manned by one position during the day and manned at night by a nearby engine company.

Funding:

The city of Wilmington Fire Department budget supports the fireboat operation. The fireboat was donated to the city of Wilmington by the Navy. Conversion costs to the city were $240,000.

Source: Chief Boswell, City of Wilmington,
North Carolina, Fire Department
(919) 341-7846

Pennsylvania - Philadelphia/Camden, New Jersey, Harbor Area

Administration:

The city of Philadelphia owns the area fireboats and administers the program through the city Fire Department.

Capacity:

The city owns two (2) active and one (1) reserve steel-hulled fireboats which have 8-foot drafts and can pump 6,000 gpm.

Manpower:

The tugs are manned by a total of 12 employees with the city "close-in" engine companies providing line handling on an "as needed" basis.

Funding:

General funds of the city provide maintenance, and the Fire Department budget provides operating requirements. No state or federal funds are included in the program.

Comments:

Camden, New Jersey, waterfront receives protection from the Philadelphia fleet and does not provide funding for this service.

Source: Pilot Warren Hunt, Philadelphia, PA,
Fire Department
(215) 592-5950

South Carolina - Charleston Harbor Area

Administration:

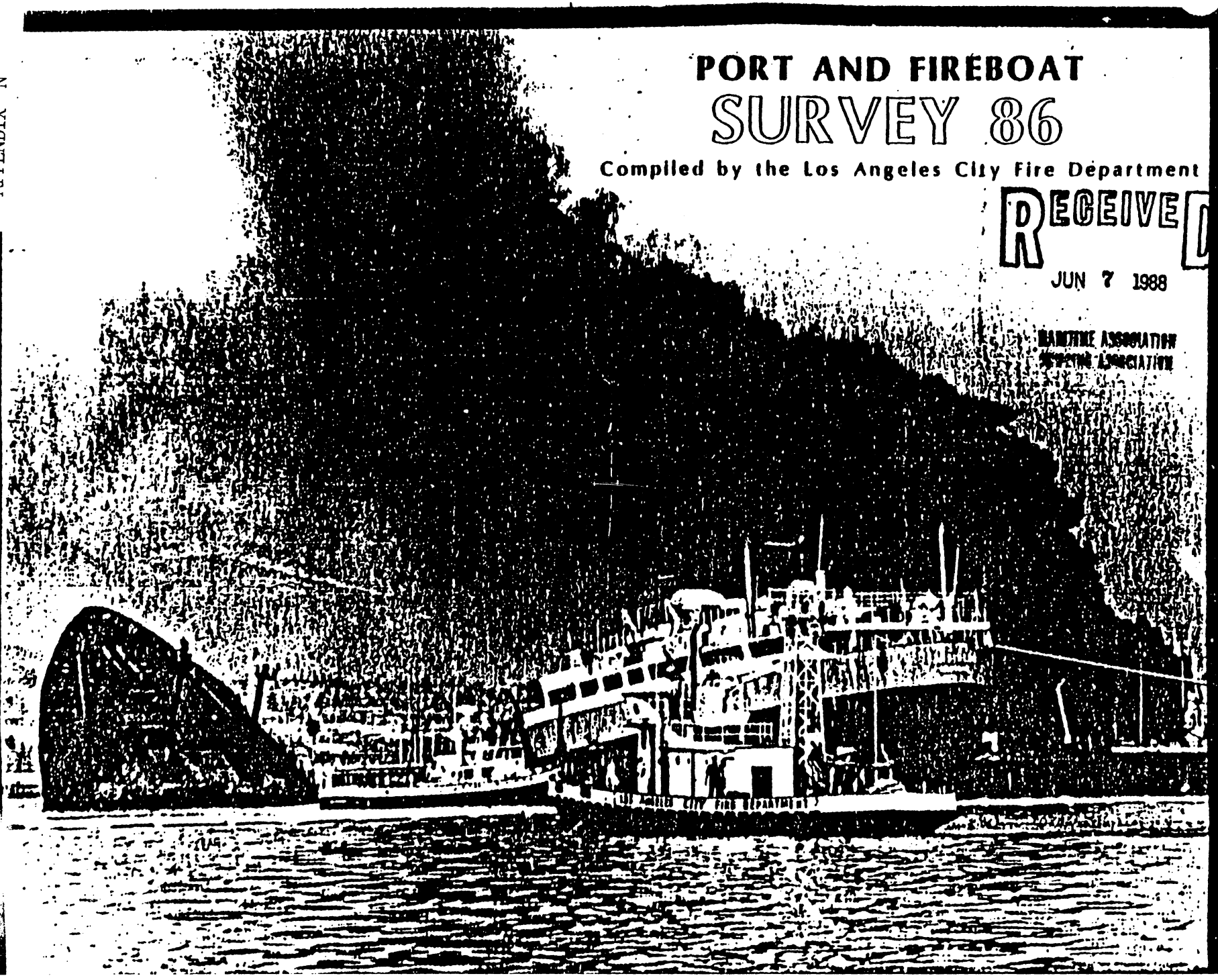
Charleston, South Carolina, depends completely upon the area Navy and Coast Guard, through cooperative agreement, to provide marine fire protection in the Charleston harbor. The federal support is considered by Charleston city officials to be sufficient for protection of the Charleston harbor area.

Source: Chief Guthke, Fire Department,
City of Charleston, SC
(803) 724-7386

APPENDIX N

PORT AND FIREBOAT
SURVEY 86

Compiled by the Los Angeles City Fire Department



CALIFORNIA

TOM BRADLEY
MAYOR

DEPARTMENT OF FIRE
200 NORTH MAIN ST.
LOS ANGELES, CA 90012

DONALD O. MANNING
CHIEF ENGINEER
AND
GENERAL MANAGER

PORT AND FIREBOAT SURVEY 1986

The Los Angeles City Fire Department has entered into the design criteria phase for purchasing a new large fireboat. This Port and Fireboat Survey was completed May 11, 1986 in an effort to gain the greatest possible input towards achieving a satisfactory fireboat design. It is hoped that other fire protection authorities around the nation will benefit from this assembling of pertinent fireboat information.

48 cities contacted - 41 cities responded - 30 cities had fireboats

The following cities responded, but had no fireboats at this time:

Baton Rouge, La.	Charleston S.C.	Pensacola Fla.	St. Petersburg, Fla.
Bremerton, Wash.	Diluth, Minn.	Pittsburgh, Pa.	Toledo, Ohio
Bristol, Pa.	Norfolk, Va.	Quebec City, Que.,Can.	

The following Virginia cities plan to jointly operate 1 or 2 boats similar to Seattle' new boat:

Chesapeake Hampton Newport News Norfolk Portsmouth

Longest boat: New Orleans (138')
Most capacity: New York City and Vancouver, B.C., Can. (20,000 GPM)
Oldest boat: Buffalo, N.Y. (1900)
Most boats: New York City (7)
Cities with 3 or more boats: (11)
Cities with 5 or more boats: (3) - New York City, Los Angeles and San Diego
Cities with most boat mounted foam supply (2000 Gals. or more): New Orleans, La.(5000 Protein); Baltimore, Md.(4225 Protein); Houston, Tex.(4000 AFFF); New York City,N.Y.(2300 Protein); Philadelphia, Pa.(2200 Protein); Wilmington, N.C.(2000 AFFF).

SURVEY LEGEND

Blank space = Information not provided, not known or misunderstood
Dash (-) = Information not applicable or not available
Zero (0) = None

Compiler: William E. Dahlquist, Fireboat Pilot, LAFD

	PORT AND FIREBOAT SURVEY - 1986	CITY, STATE	BALTIMORE MD.	BOSTON MASS.	BUFFALO N.Y.	CHICAGO ILL.	CLEVELAND OHIO	DETROIT MICH.	FT. LAUDERDALE FLA.	HONOLULU HAWAII	HOUSTON TEX.	JACKSONVILLE FLA.
WATERFRONT DESCRIPTION	FIRE PROTECTION AUTHORITY AND CITY STATISTICS	PRIMARY AGENCY	BALTIMORE CITY F.D.	CITY OF BOSTON	BUFFALO FIRE DEPT.	CHICAGO FIRE DEPT.	CLEVELAND FIRE DEPT.	DETROIT FIRE DEPT.	CITY OF FT.LAUDERDALE	HONOLULU FIRE DEPT.	CITY OF HOUSTON	JACKSONVILLE FIRE D.
		SECONDARY AGENCY	U.S. COAST GUARD	PORT AUTHORITY MP							PORT AUTHORITY	U.S. COAST GUARD
		POPULATION; AREA:	786,000 80 Sq.Mi.	570,000 47 Sq.Mi.	462,000 42 Sq.Mi.	3 Mil. 228 Sq.Mi.	558,000 78 Sq.Mi.	1,088,973 135 Sq.Mi.	165,000 34 Sq.Mi.	865,000 620 Sq.Mi.	1.7 Mil. 556 Sq.Mi.	610,000 840 Sq.Mi.
	MILES OF WATERFRONT		45	55	25		19		85	4+	75	50
	LENGTH PORT OVERALL		6	6½	20		19			1+	25	30
	MILES OF WHARF		15	10	15		12			3+	50	5
	MILES WOOD WHARF		10	10	10		0			600 ft.	15	1
PORT ACTIVITY 1984 OR OTHER	TOTAL NUMBER OF SHIPS		2986	702	50		248			4161	4740	1960
	NO. PASSENGER SHIPS		3	17	0		0			111	0	6
	NO. TANK SHIPS		205	338	20		-			50	2133	588
	BULK OIL (TONS)		1.9Mil.	13 Mil.			185,516			1 Mil.	16Mil.	638,640
	GEN. CARGO (TONS)		5.8Mil.	1 Mil.			18,273				68Mil.	2.3Mil
	PORT GROSS INCOME		1.2Bil.				225,100			21Mil.		
FIREBOAT FIRE PROTECTION	TOTAL NO. FIREBOATS		4	2	1	3	1	1	1	1	3	3
	5000 GPM OR MORE		4	1	1	3	1	1	0	1	1	1
	LENGTH BIGGEST BOAT(FEET)		103'8"	76'	118'	92'	60'9"	77'10"	37'	87'	80'	65'
	MAX. GPM BIG BOAT		12,500	6000	15,000	12,000	6000	10,000	1000	9000	6000	6000
	LARGEST TIP BIG BOAT		4"	3"	4"		4"			2½"		3"
	MAX. RUN TIME BIG BOAT		35 Min.		25+Min.					90 Min	50 Min.	60 Min
	GPM SMALLEST BOAT		6000	3500		7600					4000	250
	MAX. RUN TIME SMALL BOAT		12 Min.						25 Min.		30 Min.	
	TOTAL NO. BOAT STATIONS		2	1	1		1	1	1	1	3	2
	TOTAL RESPONSES 1984		224	300	5		328			14	87	188
	NEW BOAT ANTICIPATED		Yes							Yes		
	NEW BOAT BEING BUILT											
	NUMBER BOATS IN RESERVE		2	1	0	1	0	0	0	0	0	0

2.	PORT AND FIREBOAT SURVEY - 1986	CITY, STATE	LONG BEACH CAL.	LOS ANGELES CAL.	MIL-WAUKEE WIS.	MOBILE ALA.	NEW HAVEN CONN.	NEW ORLEANS LA.	NEW YORK N.Y.	OAKLAND CAL.	PHILA-DELPHIA PA.	PORT-LAND ORE.
WATERFRONT DESCRIPTION	FIRE PROTECTION AUTHORITY AND CITY STATISTICS	PRIMARY AGENCY	LONG BEACH FIRE DEPT	LOS ANGELES CITY FD	MILWAUKEE FIRE DEPT	CITY OF MOBILE F.D.	NEW HAVEN FIRE DEPT	PORT OF NEW ORLEANS	NEW YORK FIRE DEPT.	OAKLAND FIRE DEPT.	PHILADELPHIA F.D.	CITY OF PORTLAND
		SECONDARY AGENCY	U.S. COAST GUARD	U.S. COAST GUARD					U.S. COAST GUARD		U.S. COAST GUARD	
		POPULATION: AREA:	381,000 50 Sq.Mi.	3 Mil. 465 Sq.Mi.	621,000 96 Sq.Mi.	205,000	126,000	559,000 200 Sq.Mi.	8 Mil. 303 Sq.Mi.	352,000 79 Sq.Mi.	1.6 Mil. 136 Sq.Mi.	366,000 116 Sq.Mi.
	MILES OF WATERFRONT			28		35	12	20	600	19	38	68
	LENGTH PORT OVERALL			5½			5½	20		10	29.5	50
	MILES OF WHARF			13		15.7	4	12		10	21.8	25
	MILES WOOD WHARF		0	6		9	3			2	.8	20
PORT ACTIVITY 1984 OR OTHER	TOTAL NUMBER OF SHIPS			3146		47	340	4082	6085	1827	1218	2200
	NO. PASSENGER SHIPS			293				4	234	0	16	
	NO. TANK SHIPS			522			140		1171	0	280	
	BULK OIL (TONS)			20 Mil.		33 Mil.				0	12+ Mil	17.5
	GEN. CARGO (TONS)			17 Mil.				6.3Mil.		13 Mil.	3 Mil.	Mil.
	PORT GROSS INCOME			80 Mil.						45 Mil.	5.7Bil.	
FIREBOAT FIRE PROTECTION	TOTAL NO. FIREBOATS		3	5	1	1	1	2	7	1	3	3
	5000 GPM OR MORE		0	2	0	0	1	2	6	1	3	2
	LENGTH BIGGEST BOAT(FEET)		56'6"	99'	35'	63'	68'6"	138'8"	134'	100'	79'4"	90'
	MAX. GPM BIG BOAT		4500	18,665	2500	3800	7000	10,000	20,000	10,000	6000	14,000
	LARGEST TIP BIG BOAT			6"		2¼"	3"	3½"	8"	3"	2"	
	MAX. RUN TIME BIG BOAT			25Min.		30 Min.	20 Min	45 Min.	60 Min	25 Min	45 Min	
	GPM SMALLEST BOAT		1000	750				8000	2000	10,000		6000
	MAX. RUN TIME SMALL BOAT			8 Min.				75 Min.	-			
	TOTAL NO. BOAT STATIONS		3	4	1	1	1	2	4	1	2	2
	TOTAL RESPONSES 1984					13		41	2310	12	25	188
	NEW BOAT ANTICIPATED		Yes	Yes								
	NEW BOAT BEING BUILT		Yes									
	NUMBER BOATS IN RESERVE		0	0	0	0	0	0	2	0	1	1

	AND FIREBOAT SURVEY - 1986	CITY: STATE	SEATTLE WASH.	SAN DIEGO CAL.	SAN FRANCISCO CAL.	TACOMA WASH.	TAMPA FLA.	WASHINGTON D.C.	WILMINGTON N.C.	MONTREAL CAN.	TORONTO CAN.	VANCOUVER CAN.
WATERFRONT DESCRIPTION	FIRE PROTECTION AUTHORITY AND CITY STATISTICS	PRIMARY AGENCY SECONDARY AGENCY POPULATION: AREA:	SEATTLE FIRE DEPT. 488,000 144 Sq.Mi.	S.D.UNIFIED PORT D. 995,000 400 Sq.Mi.	SAN FRANCISCO F.D. PORT OF SAN FRAN. 712,000 46 Sq.Mi.	TACOMA FIRE DEPT. 160,000	TAMPA FIRE DEPT. U.S. COAST GUARD 276,000	WASHINGTON D.C. FD U.S. COAST GUARD 680,000 64 Sq.Mi.	WILMINGTON FIRE DEP TUGS/U.S. COAST GD. 60,000 28 Sq.Mi.	3 Mil. 68 Sq.Mi.	3 Mil.	VANCOUVER FIRE DEPT. NONE 416,000 44 Sq.Mi.
	MILES OF WATERFRONT		75	36	18	38	70	42.5	8	10		
	LENGTH PORT OVERALL		12	18	10	8	43	8	5	38		10.5
	MILES OF WHARF		-		21.5	3.5	4+		3	13		
	MILES WOOD WHARF		-		12	1	.02		1	0		
PORT ACTIVITY 1984 OR OTHER	TOTAL NUMBER OF SHIPS		-		760	821	4300	150+	255	3370		2381
	NO. PASSENGER SHIPS		-		121	0	434		3	22		45
	NO. TANK SHIPS		-		48	47	570	100+	110	689		154
	BULK OIL (TONS)		-		104,000	1,654,000	11 Mil			7.8 Mil		3.1Mil.
	GEN. CARGO (TONS)		-		2.4 Mil	1,036,660	1.1Mil	300,000		4.7 Mil		10.7Mil
	PORT GROSS INCOME		-		34.2Mil	28,566,587	6Mil			57.3Mil		
FIREBOAT FIRE PROTECTION	TOTAL NO. FIREBOATS		2	5	2	2	1	2	3	1	1	1
	5000 GPM OR MORE		2	0	2	2	1	1	0	1		1
	LENGTH BIGGEST BOAT(FEET)		126'	42'	89'	70'	68'2"	70'	106'	117'	81'	87'
	MAX. GPM BIG BOAT		16,200	4500	9600	7000'	6000	7000	4000	6000	7000	20,000
	LARGEST TIP BIG BOAT		4½"		3"	4½"	2"	3"	2"	2½"		5½"
	MAX. RUN TIME BIG BOAT		90 Min.	3½ Hrs.	30 Min.	17 Min.	3½ Hrs.	30 Min.	30 Min.			12 Min.
	GPM SMALLEST BOAT		8500	1200	6000	7000		225	1250			
	MAX. RUN TIME SMALL BOAT		45 Min.		50+Min.	17 Min.		15 Min.	10 Min			
	TOTAL NO. BOAT STATIONS		1	2	1	2	1	1	1	1	1	1
	TOTAL RESPONSES 1984		252		270	407	18	110	3			42
	NEW BOAT ANTICIPATED											
	NEW BOAT BEING BUILT											

	FIREBOAT SURVEY 86	CITY: STATE:	BALTIMORE MD.				BOSTON MASS.		BUFFALO N.Y.	CHICAGO ILL.			CLEVELAND OHIO
	MARK "R" AFTER BOAT NO. IF BOAT IS IN RESERVE.	a. VESSEL NAME b. BUILDER c. DESIGNER	T. D'ALESANDRO JR. R.T.C. Ship. Corp. (Camden N.J.) T.D. Bowes (Phila. Pa.	J. HAROLD GRADY Jakobson Ship. (Lo. Is. N.Y.) T.D. Bowes (Phila. Pa.)	P. W. WILKINSON Same as #2 Same as #2	AUGUST EMRICH Same as #2 Same as #2	FIREFIGHTER Grafton Boat Gilbert Assoc.	ST. FLORIAN	EDMOND M. COTTER	JOSEPH MEDILL	VICTOR L. SCHLAEGER	FRED A. BUSSE	A. J. CELEBREZZE Paasch
VESSEL STATISTICS	FIREBOAT		1	2	3R	4R	1	2	1	1	2	3R	1
	LENGTH (FEET)		103'8"	85'	85'	85'	76'	45'	118'	92'	92'	90'6"	60'9"
	BEAM (FEET)		21'8½	20'	19'8½	20'	19'6"	15'10	28'	24'	24'	22'4"	16'
	DRAFT (FEET)		11'	8'	8'	8'	5'8"	4'2"	11'	7'6"	7'6"	7'	6'3"
	DISPLACEMENT (TONS)		149	109.9	109.9	109.9	93	14	178	209	209		42
	YEAR BUILT		1956	1960	1960	1960	1971	1976	1900	1949	1949	1936	1961
	HULL TYPE		Displ.	Displ.	Displ.	Displ.	Displ.	Plane.	Displ.	Displ.	Displ.	Displ.	Displ.
	HULL MATERIAL		Steel	Steel	Steel	Steel	Steel	Alum.	Steel	Steel	Steel	Steel	Steel
	PROPULSION TYPE		Conven	Conven.	Conven.	Conven.	Conven.	Conven.	Conven.	Conven.	Conven.	Conven.	Conven.
	SPEED (KNOTS)		20	18	18	18	14	22	11½	14	14	15	13
	GPM@150 PSI (STOP)		12,500	6000	6000	6000	6000	3000	15,000	12,000	12,000	7600	6000
	GPM@150 PSI (MOVE)		12,500	6000	6000	6000	6000	3000	7500				
	FUEL (GALS) GAS-DIES		3670 D.	2300 D.	2300 D.	2300 D.	2000 D.	631 D.	D.	D	D	D.	1000 D
ENGINES & PUMPS	NO./PROPULSION ENG		2	1	1	1	2	2	2	4(2)	4(2)	3	2
	H.P. PROPULSION		1320	880	880	880	525	325	900				215
	MAKE PROPULSION		Fairbanks	Fairbanks	Fairbanks	Fairbanks	Detroit	Omega	Caterpil.				G.M.
	NO. PUMP ENGINES		2	1	1	1	2	2	2				2
	H.P. PUMP ENGINES		1320	880	880	880	525	325					215
	MAKE PUMP ENGINES		Same	Same	Same	Same	Same	Aurora	Same				Same
	NO. PROP/PUMP ENGS		0	0	0	0	0	0	2				2
	MAKE OF PUMPS		Fairbanks	Fairbanks	Fairbanks	Fairbanks	DeLaval	Aurora	Hale				Fairbanks
	GPM OF PUMPS		12,500	6000	6000	6000	3000	1500	3500				1500

	FIREBOAT	CITY:	BALTIMORE				BOSTON		BUFFALO	CHICAGO			CLEVELAND
5	SURVEY 86	STATE:	MD.				MASS.		N.Y.	ILL.			OHIO
	FIREBOAT		1	2	3	4	1	2	1	1	2	3	1
MONITORS	TOTAL NO. MONITORS		4	3	3	3	7	2	5	6	6	4	5
	GPM OF LARGEST		3500	3000	3000	3000	3000	3000	4"				3000
	REACH OF LARGEST		200'	185'	185'	185'	175'	175'	200				300'
	HIGHEST(FT./WATER)												8'
	LOWEST(FT./WATER)												6'
OUTLETS	NO. 3½" OUTLETS		0	0	0	0	12	5	0	16	16	14	
	NO. 2½" OUTLETS		20	12	12	12	12	2	12	3	3		16
	NO. 1½" OUTLETS		0	0	0	0	4	2	6				
HOSE	3½" HOSE (FEET)		0	0	0	0	1600'	0	0	1000'	1000'	1000'	
	2½" HOSE (FEET)		2000'	2000'	2000'	2000'	1600'	200'	2000'	1000'	1000'	500'	1000'
	1½" HOSE (FEET)		600'	600'	600'	600'	1100'	200'	1000'	200'	200'	200'	
EXTINGUISHING AGENTS	AFFF (GALS.)		0	0	0	0	500	50	660				
	SIZE OUTLET & GPM						2½"	2½"	2½"				
	PROTEIN FOAM(GALS.		1225	1000	1000	1000			50				120
	SIZE OUTLET & GPM		2½"-12,50	2½"-6000	2½"-6000	2½"-6000			2½"				
	HI EXPANSION(GALS.)		100	105	105	105	500	50	50				120
	DRY CHEMICAL(LBS.)		0	0	0	0	0	0	30				80
	CO_2 (LBS.)		0	0	0	0	0	0	15				40
	OTHER		0	0	0	0	0	0	0				1 PumpTan
	NO.& SIZE FOAM MON		1-30000GP	1-PW 50	1-PW 50	1-PW 50	1-2½"	1-1½"	1-1½" 4				
ADJUNCTS	DEWATERING? (GPM)		1000	500	500	500			-				
	AERIAL PLATFORM?		0	0	0	0							
	HEIGHT(FT./WATER)		-	-	-	-							
	MANEUVERING JETS?		0	0	0	0							
	TELESCOPING TOWER?		0	0	0	0							
	LADDERS (LENGTH)		20' 16' 8	0' 12' 12'	18' 12'	18' 12'	2-20'	1-20'	3220'1'1.2				1-16'

SURVEY 86	CITY: STATE:	BALTIMORE MD.				BOSTON MASS.		BUFFALO N.Y.	CHICAGO ILL.			CLEVE-LAND OHIO
FIREBOAT		1	2	3	4	1	2	1	1	2	3	1
CREW (NO.)	OFFICER	1	1	1	1	1						1
	OPERATOR (PILOT)	1	1	1	1	1		1				1
	MATE	0	0	0	0			Asst.Eng.				
	ENGINEER	2	2	2	2	1		1				
	FIREFIGHTER	1	1	1	1	1		Oiler				2
	SCUBA DIVER	0	0	0	0	0		0				0
	TOTAL ON DUTY	5	5	0-Reserv	0-Reserv	4		4				4
IS BOAT COVERED?		No	No	No	No	No						No
IF BUILDING NEW STATIO WOULD INCLUDE COVER?		No				Yes						Yes
IF BUILDING NEW LARGE BOAT WOULD YOU INCLUDE AN AERIAL PLATFORM?		No				No						Yes
IF BUILDING NEW BOAT WHAT HULL TYPE AND MATERIAL?		Same				Aluminum						Steel
ADDITIONAL INFORMATION AND COMMENTS:		All boats repainted each spri and dry-docked every 2 years. Reserve boats are activated when waterfront incident occur Steel hulls mandatory in harb that freeze. Large boat master streams mos effective when vessel is tied up.				Elevating Squi only lasted a few years due salt corrosion Underwharf monitor GPM = 2000 each. A 14' outboard Boston Whaler with portable pump and quick release is car ried for rescu		When boat responds to fire alarm land companies are dispatched to boat for manpower.				

	BOAT SURVEY 86	CITY: STATE:	DETROIT MICH.	FT. LAUDERDALE FLA.	HONOLULU HAWAII	HOUSTON TEX.			JACKSONVILLE FLA.			MILWAUKEE WIS.	MOBILE ALA.
	MARK "R" AFTER BOAT NO. IF BOAT IS IN RESERVE.	a. VESSEL NAME b. BUILDER c. DESIGNER	CURTIS RANDOLPH		ABNER T. LONGLEY Albina E.& M.(Pac Cre) T.D.Bowes(Phila.Pa.)	CAPT. FARNSWORTH Bludworth Boni SY Same	J. S. BRACEWELL Swiftships(Mor.City La) Same	H. T. TELLEPSEN Swiftships(Mor.City La) Same	EUGENE JOHNSON Sewert Seacraft Same	MARINE 2 Allmand Same	MARINE 3 Sportcraft	AMPHIBIAN Ladder Dwers(Ephrata Pa) Same	RAMONA DOYLE
VESSEL STATISTICS	FIREBOAT		1	1	1	1	2	3	1	2	3	1	1
	LENGTH (FEET)		77'10"	37'	87'	80'	68'	68'	65'	26'	27'	35'	63'
	BEAM (FEET)		21'6"	13'9"	19'	22'	20'	20'	15'	9'	10'	10'	19'5"
	DRAFT (FEET)		5'9"	2'6"	7'4"	6'6"	3'6"	3'6"	5'	2'	2½'	4'4"	5'5"
	DISPLACEMENT(TONS)		68		89	105	74	74	95	2	3½	15	46
	YEAR BUILT		1977	1969	1951	1974	1983	1983	1969	1980	1983	1984	1939
	HULL TYPE		Plane.	Plane.	Displ.	Plane.	Plane.	Plane.	Plane.	Plane.	Plane.	Amphib.	Displ.
	HULL MATERIAL		Alum.	Alum.	Steel	Steel	Alum.	Alum.	Alum.	Fib/glas	Fib/glas	Alum.	Steel
	PROPULSION TYPE		Conven.	Conven.	Conven.	Conven	Conven.	Conven	Conven.	I/O	I/O	Prop/FWD	Conven.
	SPEED (KNOTS)		23	24	13½	15	17	17	20	25	25	10	12
	GPM@150 PSI (STOP.)		10,000	1000	9000	6000	4000	4000	6000	250	250	2500	3800
	GPM@150 PSI (MOVE)			1000		6000	4000	4000		250	250		3800
	FUEL(GALS)GAS-DIES		1520 D.	350 G.	4000 D.	2700 D	1000 D.	1000 D.	1000 D	60 G.	160 G.	144 D.	500 D.
	NO. PROPULSION ENG		2	2	4	2	2	2	3	1	1	1	1
	H.P. PROPULSION		770	350	660	1200	650	650	900	350	290	300	440
	MAKE PROPULSION		G.M.	Crusader	G.M.	Caterpl	Detroit	Detroit	G.M.	Chev.	Volvo		
	NO. PUMP ENGINES			1	6	2	Mains	Mains	3	1	1	1	2
	H.P. PUMP ENGINES			277	160	810	Mains	Mains	900	5	10	492	320/200
	MAKE PUMP ENGINES			SeaMast	G.M.	Caterpil.	Mains	Mains	G.M.	Hale	Wiscon.		
	NO. PROP/PUMP ENGS			0	4	4	2	2	3	1	0		0
PUMPS	MAKE OF PUMPS		DeLaval	BartonAm	DeLaval	Goulds	Goulds	Goulds	Fairbanks	Hale	Hale		
	GPM OF PUMPS		2700	1000	1500	6000							

8. FIREBOAT SURVEY 86	CITY: STATE:	DETROIT MICH.	FT. LAUDERDALE FLA.	HONOLULU HAWAII	HOUSTON TEX.			JACKSONVILLE FLA.			MILWAUKEE WIS.	MOBILE ALA.
FIREBOAT		1	1	1	1	2	3	1	2	3	1	1
MONITORS — TOTAL NO. MONITORS		4	1	5	2	3	3	3	-	0	3	4
MONITORS — GPM OF LARGEST			750	1800	2700	2700	2000	2000	-	-	2000	1600
MONITORS — REACH OF LARGEST			225'	90'	250'	250'	250'	150'	75'	-		300'
MONITORS — HIGHEST(FT./WATER)			8'		9'	14'	14'	25'	-	-	6'	16'
MONITORS — LOWEST(FT./WATER)					9'	6'	6'	10'	-	-	4'	5'
OUTLETS — NO. 3½" OUTLETS			0	4	0	0	0	5	-	-		
OUTLETS — NO. 2½" OUTLETS			4	16	8	8	8	3	-	1		6
OUTLETS — NO. 1½" OUTLETS			2	-	-	-	-	2-5"	2	2		
HOSE — 3½" HOSE (FEET)			0	1000'	200'	-	-	900'	-	-		0
HOSE — 2½" HOSE (FEET)			200'	1000'	1800'	1000'	1000'	900'	-	20		1000'
HOSE — 1½" HOSE (FEET)			250'	500'	600'	1000'	1000'	650'	200'	650'		400'
EXTINGUISHING AGENTS — AFFF (GALS.)				-	2000	1000	1000	100	-	30		600
EXTINGUISHING AGENTS — SIZE OUTLET & GPM										1½"-95 GPM		2½"
EXTINGUISHING AGENTS — PROTEIN FOAM(GALS.		200		1000								
EXTINGUISHING AGENTS — SIZE OUTLET & GPM				2½"-30GPM								
EXTINGUISHING AGENTS — HI EXPANSION(GALS.)			40									
EXTINGUISHING AGENTS — DRY CHEMICAL(LBS.)			40		2000	-	-	-	-	20		
EXTINGUISHING AGENTS — CO_2 (LBS.)				45						20		
EXTINGUISHING AGENTS — OTHER		0	0	0	0	0	0	0	0	0	0	0
EXTINGUISHING AGENTS — NO.& SIZE FOAM MON.			0	4-2½"	1-3"	3-4"	3-4"	1-2½"				2-2½" 2-1½"
ADJUNCTS — DEWATERING? (GPM)			600		3000	2000	2000					250
ADJUNCTS — AERIAL PLATFORM?		0	0	0	0	0	0	0	0	0	0	0
ADJUNCTS — HEIGHT(FT./WATER)		-	-	-	-	-	-	-	-	-	-	-
ADJUNCTS — MANEUVERING JETS?		2	0	0	0	0	0	0	0	0	0	0
ADJUNCTS — TELESCOPING TOWER?		Squirt	0	0	Squirt	0	0	0	0	0	0	0
ADJUNCTS — LADDERS (LENGTH)			0	14'	0	0	0	35' 14'	0	0	0	24' 14'

SURVEY 86	CITY: STATE:	DETROIT MICH.	FT. LAUDERDALE FLA.	HONOLULU HAWAII	HOUSTON TEX.			JACKSONVILLE FLA.			MILWAUKEE WIS.	MOBILE ALA.
	FIREBOAT	1	1	1	1	2	3	1	2	3	1	1
CREW (NO.)	OFFICER		1	1	-	-	-	1	1	1		1
	OPERATOR (PILOT)		1	1	1	1	1	1	1	1		1
	MATE		0	-	1	1	1	0	0			1
	ENGINEER		0	2	1	1	1	1	1			1
	FIREFIGHTER		1	5	2	1	1					
	SCUBA DIVER		0	0	-	-	-					-
	TOTAL ON DUTY		3	9	5	4	4	3	3			4
IS BOAT COVERED?			No	No	No	No	No	No		Yes		No
IF BUILDING NEW STATION WOULD INCLUDE COVER?			Yes	Yes	Yes			Yes				Yes
IF BUILDING NEW LARGE BOAT WOULD YOU INCLUDE AN AERIAL PLATFORM?				Yes	No			Yes				Yes
IF BUILDING NEW BOAT WHAT HULL TYPE AND MATERIAL?			Aluminum	Semi Plane Aluminum	Aluminum planing			Aluminum "V"				Steel
ADDITIONAL INFORMATION AND COMMENTS:			Boat also responds to the seaport of Port Everglades. Recommend use of new lightweight diesels instead of gas engines.	Presently doing feasibility study for new fireboat.								

VESSEL STATISTICS

ENGINES & PUMPS

FIREBOAT	CITY:	LONG BEACH			LOS ANGELES					NEWARK	NEW ORLEANS	
SURVEY 86	STATE:	CAL.			CAL.					N.J.	LA.	
MARK "R" AFTER BOAT NO. IF BOAT IS IN RESERVE.	a. VESSEL NAME b. BUILDER c. DESIGNER	FIREBOAT 15 Wilmington Boat John Alden	FIREBOAT 20 Wilmington Boat John Alden	FIREBOAT 21 Willard Boat(Ex Cal) Same	FIREBOAT 1 Drakecraft(Oxnard Cal) Same	RALPH J. SCOTT L.A. Ship.&Dry.(L.A.Cal) C. E. Caverly	FIREBOAT 3 Drakecraft(OxnardCal) Same	BETHEL F. GIFFORD Albina E.& M.(Port Ore) L. C. Norgaard	FIREBOAT 5 Drakecraft(Oxnard Cal) Same	JOHN F. KENNEDY Gladding-Hearn Ship. Somerset Mass Same		
FIREBOAT		1	2	3	1	2	3	4	5	1	1	2
LENGTH (FEET)		56'6"	56'6"	35'	34'	99'	34'	76'6"	34'	46'	138'8"	94'
BEAM (FEET)		15'7"	15'7"	12'6"	12'6"	19'	12'6"	24'	12'6"	15'3"	29'	25'
DRAFT (FEET)		6'	6'	2'6"	3'	7'	3'	8'	3'	3'	12'6"	12'
DISPLACEMENT(TONS)		52	52	8	20	152	20	132	20		370	172
YEAR BUILT		1952	1953	1983	1968	1925	1967	1962	1967	1964	1923	1942
HULL TYPE		Displ.	Displ.	Plane.	Plane.	Displ.	Plane.	Displ.	Plane.	Displ.	Displ.	Displ.
HULL MATERIAL		Steel	Steel	Glas/wood Fib/glas	Glas/wood	Steel	Glas/wood	Steel	Glas/wood	Steel	Steel	Steel
PROPULSION TYPE		Conven.	Conven.	Conven.	Conven.	Conven	Conven.	Conven	Conven.	Conven.	Conven D.Elect	Conven.
SPEED (KNOTS)		12	12	28	30	13½	30	12	30	15	20	12
GPM@150 PSI (STOP.)		4500	4500	1000	750	18,655	750	9000	750	4000	10,000	6000
GPM@150 PSI (MOVE)		2250	2250	1000	750	18,655	750	9000	750	4000	7500	6000
FUEL(GALS)GAS-DIES		1000 D.	1000 D.	200 G.	150 G.	2156 D	150 G.	3538 D	150 G.	600	18,000D	5000 D
NO. PROPULSION ENG		2	2	2	2	3	2	2	2	2	2-1	1
H.P. PROPULSION		275	275	200	330	2-200 1-380	340	600	330	300	3400	810
MAKE PROPULSION		G.M.	G.M.	Chevy	Chrysler	Cummins	Chevy.	Cummins	Chrysler		G.M.	Fairbank
NO. PUMP ENGINES		0	0	1	1	4	1	4	1	2	2	2
H.P. PUMP ENGINES		-	-	150	290	2-525 2-380	330	2-600 2-335	290	300	1000	600
MAKE PUMP ENGINES		-	-	Chevy	Chrysler	Cummins Detroit	Chrysler	Cummins	Chrysler		Elliott	Cummins
NO. PROP/PUMP ENGS		2	2	0	0	2	0	0	0	0	1-2	1
MAKE OF PUMPS		DeLaval	DeLaval	Hale	Waterous	Byr. Jack	Waterous	Cummins	Waterous	Peerless	Worthing	Worthing
GPM OF PUMPS		2250	2250	1000	750	1700@200	750	2-3000 2-1500	750	2000	5000	4000

	SURVEY 86	CITY: STATE:	LONG BEACH CAL.			LOS ANGELES CAL.					NEWARK N.J.	NEW ORLEANS LA.	
	FIREBOAT		1	2	3	1	2	3	4	5	1	1	2
MONITORS	TOTAL NO. MONITORS		4	4	1	1	13	1	17	1	3	4	4
	GPM OF LARGEST		2500	2500	1000	500	10,200	500	3000	500		2800	2500
	REACH OF LARGEST				200'	175'	450'	175'	250'	175'		400'	400'
	HIGHEST(FT./WATER)				6'	5'	44'	5'	20'	5'		45'	75'
	LOWEST(FT./WATER)				6'	5'	½'	5'	2'	5'		20'	20'
OUTLETS	NO. 3½" OUTLETS		0	0	0	0	6	0	2	0		16	5
	NO. 2½" OUTLETS		12	12	4	4Reduced	10	4Reduced	6	4Reduced		16	5
	NO. 1½" OUTLETS		1	1		4	2	4	2	4		16	5
HOSE	3½" HOSE (FEET)		1000'	1000'		0	1000'	0	250'	0		1000'	1000'
	2½" HOSE (FEET)		0	0		50'	1500'	50'	1000'	50'		1450'	1000'
	1½" HOSE (FEET)		400'	400'	300'	300'	850'	300'	600'	300'		1050'	500'
EXTINGUISHING AGENTS	AFFF (GALS.)		40	40	15	65	250	65	75	65		0	0
	SIZE OUTLET & GPM		2½"-120 GPM	2½"-120 GPM		1½"-95GPM	2½"-250 GPM	1½"-95GPM	2½"-250GPM	1½"-95 GPM		-	-
	PROTEIN FOAM(GALS.		500	500		0	0	0	0	0		2000	3000
	SIZE OUTLET & GPM		1-2½"-120	1-2½"-120		-	-	-	-	-			
	HI EXPANSION(GALS.)		0	0		0	0	0	0	0		0	0
	DRY CHEMICAL(LBS.)		30	30	20	20	80	20	40	20		0	0
	CO_2 (LBS.)		90	90	20	0	80	0	60	0		0	0
	OTHER		1 Pump Tank	1 Pump Tank		0	1 Pump Tank	0	0	0			
	NO.& SIZE FOAM MON		1½"	1½"		2-1½"	1-2½" 2-1½"	2-1½"	2-2½"	2-1½"		1-6"	1-4½"
ADJUNCTS	DEWATERING? (GPM)		Yes	Yes	300	Yes	Yes	Yes	Yes	Yes			
	AERIAL PLATFORM?		0	0	0	0	Yes	0	0	0	0	Tower	Snorke
	HEIGHT(FT./WATER)		-	-	-	-	31	-	-	-	-	45'	75'
	MANEUVERING JETS?		0	0	0	0	4	0	4	0		0	0
	TELESCOPING TOWER?		0	0	0	0	44'	0	0	0		0	0
	LADDERS (LENGTH)		20' 10'	20' 10'		0	14' 8'	0	10'	0		40' 30' 20'	2-30'

12	BOAT	CITY:	LONG BEACH			LOS ANGELES					NEWARK	NEW ORLEANS	
	SURVEY 86	STATE:	CAL.			CAL.					N.J.	LA.	
	FIREBOAT		1	2	3	1	2	3	4	5	1	1	2
CREW (NO.)	OFFICER		1	1	1	0	1	0	1	0		1 Master	1 Master
	OPERATOR (PILOT)		1	1	1	1 Sup.Mate	1	1 Sup.Mate	1	1 Sup.Mate		3 Capts	1 Capt.
	MATE		0	0	0	-	1	-	1	-		4	2
	ENGINEER		1	1	0	0	2	0	2	0		4	2
	FIREFIGHTER		1	1	1	2	3	2	0	2		14	8
	SCUBA DIVER		0	0		2 (FF)	1 Back-up	2 (FF)	1 Back-up	2 (FF)		4 Oilers	2 Oilers
	TOTAL ON DUTY		4	4	3	3	8	3	5	3		8	8
IS BOAT COVERED?			Yes	No	No	No	Yes	No	Yes	No		No	No
IF BUILDING NEW STATIO WOULD INCLUDE COVER?			Yes			Yes						-	
IF BUILDING NEW LARGE BOAT WOULD YOU INCLUDE AN AERIAL PLATFORM?			Yes			?						Yes - Snorkle 75'	
IF BUILDING NEW BOAT WHAT HULL TYPE AND MATERIAL?			Steel Semi-planing with aluminum superstructure.			?						Steel tug type hull.	
ADDITIONAL INFORMATION AND COMMENTS:			Long Beach presently has two vessels under construction to replace Boats 1 & 2. They are being built by Moss Point Marine in Escatawpa Miss. They have steel hulls & aluminum superstructures and:			The Los Angeles City Fire Department is entering into the design criteria phase for purchasing a new large fireboat. It is anticipated the new boat will be in the range of 10,000 to 15,000 GPM, 70 to 90 feet long with possibly an articulating arm-type water tower and personnel basket.						Fireboat 1 has 2 - 1700 HP electric motors driving a sing propeller	
BOAT 15: CHALLENGER			Length 88'6"			This Port and Fireboat Survey was completed May 11, 1986 in an effort to gain the greatest possible input towards achieving a satisfactory fireboat design.						Recommend twin screw, twin rudder vessel with enough HP to tow a ship away from moor ing to safe area.	
BOAT 20: LIBERTY			Beam 21'										
			Draft 6'										
			Speed 15½ Kn.										
			Twin Screw 1500 SHP										
			Capacity 10,000 GPM										
			Pumps 3										
			Fuel 1500 Gal.										
			Foam 1000 Gal.										
			Water 50 Gal.										

	FIREBOAT SURVEY 86	CITY: STATE:	NEW HAVEN CONN.	NEW YORK CITY N.Y.							PHILADELPHIA PA.		
VESSEL STATISTICS	MARK "R" AFTER BOAT NO. IF BOAT IS IN RESERVE. ↘	a. VESSEL NAME b. BUILDER c. DESIGNER	SALLY LEE Norfolk Ship Bldg. John G. Alden	JOHN D. McKEAN John Mathis (N.J.)	JOHN J. HARVEY Todd Shipyard (N.Y.)	FIRE FIGHTER United Ship. (N.Y.C.)	HARRY M. ARCHER John Mathis (N.J.)	ROBERT F. WAGNER John Mathis (N.J.)	ALFRED E. SMITH John Mathis (N.J.)	SMOKE II (Tender) Equitable Equip. New Orleans	DELAWARE R.T.C. Corp. Same	BENJ. FRANKLIN R.T.C. Corp. Same	BERNARD SAMUEL R.T.C. Corp. Same
	FIREBOAT		1	1	2	3	4	5R	6R	7	1	2	3R
	LENGTH (FEET)		68'6"	129'	130'	134'	105'	105'	105'	52'	79'4"	79'4"	75'10"
	BEAM (FEET)		21'	30'	28'	32'	27'	27'	27'	14'	19'	19'	18'
	DRAFT (FEET)		7'	9'	9'	9'	9'	9'	9'	4'	8'	8'	8'
	DISPLACEMENT(TONS)		90	330	268	325	213	213	213	35	88	88	77
	YEAR BUILT		1962	1955	1931	1938	1958	1959	1961	1958	1950	1950	1948
	HULL TYPE		Displ.	Displ.	Displ.	Displ.	Displ.	Displ.	Displ.	Plane.	Displ.	Displ.	Displ.
	HULL MATERIAL		Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel	Steel
	PROPULSION TYPE		Conven.	Conven	Conven. D. Elect	Conven. D. Elect	Conven	Conven.	Conven	Conven.	Conven.	Conven	Conven.
	SPEED (KNOTS)		12.7	12	17	15	12	12	12	19	12	12	12
	GPM@150 PSI (STOP.)		7000	20,000	16,000	20,000	8000	8000	8000	2000	6000	6000	6000
	GPM@150 PSI (MOVE)		7000	20,000	16,000	20,000	8000	8000	8000	0	1500/4500	1500/4500	1500/4500
	FUEL(GALS)GAS-DIES		1300 D.	7600 D.	7300 D.	10,000D.	6500 D	6500 D.	6500 D	300 D.	2000 D.	2000 D	2000 D.
ENGINES & PUMPS	NO. PROPULSION ENG		4	2	2	2	2	2	2	2	4	4	4
	H.P. PROPULSION		2@600 2@130	2000	3000	2000	500	500	500	370	660	660	660
	MAKE PROPULSION		Cummins	Enterpr.	Westing.	Westing.	Enterpr.	Enterp.	Enterpr.	G.M.	G.M.	G.M.	G.M.
	NO. PUMP ENGINES		2	2	4	4	2	2	2	0	4	4	4
	H.P. PUMP ENGINES		600	1000	600	600	500	500	500	-	660	660	660
	MAKE PUMP ENGINES		Cummins	Enterpr	Fairbanks	Westing.	Enterpr.	Enterpr.	Enterpr.	-	G.M.	G.M.	G.M.
	NO. PROP/PUMP ENGS		2	2	4	4	2	2	2	2 (PTO)	4	4	4
	MAKE OF PUMPS		DeLaval	Worthing	LecorTem	DeLaval	Worthing	Worthing	Worthing	Worthing	De Laval	DeLaval	De Laval
	GPM OF PUMPS		3500	5000	4500	5000	4000	4000	4000	1000	1500	1500	1500

14	FIREBOAT SURVEY 86	CITY: STATE:	NEW HAVEN CONN.	NEW YORK CITY N.Y.							PHILADELPHIA PA.		
	FIREBOAT		1	1	2	3	4	5	6	7	1	2	3
MONITORS	TOTAL NO. MONITORS		4	6	8	8	5	5	5	2	3	3	3
	GPM OF LARGEST		3000	10,000	2700	10,000	3000	3000	3000	1000	1456	1456	1456
	REACH OF LARGEST		175'	350'	250'	350'	250'	250'	250'	150'	150'	150'	150'
	HIGHEST(FT./WATER)		32'	50'	24'	25'	20'	20'	20'	10'	36'	36'	36'
	LOWEST(FT./WATER)		10'	10'	10'	10'	10'	10'	10'	8'	10'	10'	10'
OUTLETS	NO. 3½" OUTLETS		0	16	24	20	12	12	12	4	6	6	6
	NO. 2½" OUTLETS		11	-	-	-	-	-	-	-	4	4	0
	NO. 1½" OUTLETS		4	-	-	-	-	-	-	-	0	0	0
HOSE	3½" HOSE (FEET)		0	2000'	2750'	2500'	2500'	2500'	2500'	300'	1000'	1000'	1000'
	2½" HOSE (FEET)		1300'	2000'	1850'	1500'	1500'	1500'	1500'	400'	1500'	1500'	1500'
	1½" HOSE (FEET)		300'	400'	400'	400'	400'	400'	400'	200'	700'	700'	700'
EXTINGUISHING AGENTS	AFFF (GALS.)		0	-	-	-	-	-	-	-	0	0	0
	SIZE OUTLET & GPM		-	-	-	-	-	-	-	-	-	-	-
	PROTEIN FOAM(GALS.		760	250	250	300	500	500	500	20	1050	1050	100
	SIZE OUTLET & GPM		2½"@75	-	-	-	-	-	-	-	2½"@331	2½"@331	0
	HI EXPANSION(GALS.)		0	-	-	-	-	-	-	-	0	0	0
	DRY CHEMICAL(LBS.)		0	-	-	-	-	-	-	-	40	40	40
	CO_2 (LBS.)		300	ER 100	ER 100	ER 1300	ER 100	ER 100	ER100	-	0	0	0
	OTHER		0	-	-	-	-	-	-	-	0	0	0
	NO.& SIZE FOAM MON.		0	-	-	-	-	-	-	-	0	0	0
ADJUNCTS	DEWATERING? (GPM)			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	AERIAL PLATFORM?		0	-	-	-	-	-	-	-	0	0	0
	HEIGHT(FT./WATER)		-	-	-	-	-	-	-	-	-	-	-
	MANEUVERING JETS?		0	0	0	0	0	0	0	0	0	0	0
	TELESCOPING TOWER?		0	0	0	0	0	0	0	0	0	0	0
	LADDERS (LENGTH)		42'	20' 12'	20' 12'	20' 12'	20' 12'	20' 12'	20' 12'	0	24' 12'	20' 12'	20' 12'

15 FIREBOAT SURVEY 86	CITY: STATE:	NEW HAVEN CONN.	NEW YORK CITY N.Y.							PHILADELPHIA PA.		
FIREBOAT		1	1	2	3	4	5	6	7	1	2	3
CREW (NO.) OFFICER			1	1	1	1	1	1	0	0	0	0
OPERATOR (PILOT)		1	1	1	1	1	1	1	2	1	1	1
MATE		1	1 Wiper	1 Wiper	1 Wiper	1 Wiper	1 Wiper	1 Wiper	0	0	0	0
ENGINEER		1	2	2	2	2	2	2	0	1	1	1
FIREFIGHTER			2	2	4	2	2	2	1	0	0	0
SCUBA DIVER			0	0	0	0	0	0	0	0	0	0
TOTAL ON DUTY		3	7	7	9	7	Spare	Spare	Tender	2	2	2
IS BOAT COVERED?		No	No	No	No	No	No	No	No	No	No	No
IF BUILDING NEW STATIO WOULD INCLUDE COVER?		No	No							Yes		
IF BUILDING NEW LARGE BOAT WOULD YOU INCLUDE AN AERIAL PLATFORM?		No	Yes							Yes		
IF BUILDING NEW BOAT WHAT HULL TYPE AND MATERIAL?			Steel							Steel		
ADDITIONAL INFORMATION AND COMMENTS:			New York has 5 active boat stations. Two 105' class boats are spares for use during breakdowns and dry-docking. The Tender "Smoke II" is used both as a Tender and as a shallow water boat if needed and is normally at the repair shops of Division Headquarters.							A Pilot and an Enginee are on duty at all times and are supported by manpower from land companies when an alarm is received. A Whale boat is lowered and sent ahead with 2 members to execute rescues.		

	SURVEY 86	CITY: STATE:	OAKLAND CAL.	PORTLAND ORE.			SAN DIEGO CAL.					SAN FRANCISCO CAL.	
	MARK "R" AFTER BOAT NO. IF BOAT IS IN RESERVE.	a. VESSEL NAME b. BUILDER c. DESIGNER	CITY OF OAKLAND	DAVID CAMPBELL Baker Const.Co.(Port.Or.) A.D.Merrill(Port.Ore.)	SPENCER Rohr	WILLIAMS Work Boats NW PPS	HARBOR ISLAND Atlantic Research	SHELTER ISLAND Livesay	POINT LOMA Livesay	POINT ZUNIGA Bertram	BALLAST POINT Boston Whaler	PHOENIX Geo. Plant John G. Alden	FRANK G. WHITE John G. Alden
VESSEL STATISTICS	FIREBOAT		1	1R	2	3	1	2	3	4	5	1	2R
	LENGTH (FEET)		100'	90'	40'	40'	42'	32'	32'	32'	18'	89'	72'
	BEAM (FEET)		27'	20'6"	16'	12'	14'	11'	11'	10'	5'	19'	16'
	DRAFT (FEET)		15'	6'	2'6"	2'6"	4'	3'6"	3'6"	3'6"	1'6"	6'	10'
	DISPLACEMENT(TONS)		343	76	20	20	12	10	9	7		134	95
	YEAR BUILT		1941	1927	1972	1983	1971	1978	1977	1972		1954	1947
	HULL TYPE		Displ.	Displ.	Plane.	Plane.	Displ.	Deep-V	Deep-V	Deep-V	Plane.	Displ.	Displ.
	HULL MATERIAL		Steel	Steel	Alum.	Alum.	Alum.	Glas/wood	Glas/wood	Glas/wood	Fiberglas	Steel	Steel
	PROPULSION TYPE		Conven. Diesel	Conven	Jet	Conven.	Conven.	Conven.	Conven	Conven.	Outboard	Conven.	Conven.
	SPEED (KNOTS)		15		30	30	11	21	34	35	38	16	10
	GPM@150 PSI (STOP.)		10,000	13,000	5000	3000	4500	2000	1500	1200	-	9600	6000
	GPM@150 PSI (MOVE)		10,000	10,000	3500	2000	3200	1800	1200	1000	-	6400	6000
	FUEL(GALS)GAS-DIES		D.	2500 D	180 D.	150 D.	350 D.	100 D.	100 G.	80 G.	10 G.	2600 D	3800 D.
ENGINES & PUMPS	NO. PROPULSION ENG		2	2	2	2	2	2	2	2	1	2	1
	H.P. PROPULSION		1300	450	390	410	400	350	350	350	70	1200	600
	MAKE PROPULSION		Alco	Cummins	Detroit	Detroi	G.M.	G.M.	G.M.	G.M.	Johnson	Cummins	Enterpr.
	NO. PUMP ENGINES		3	2	0	0	1	2	1	1	-	3	2
	H.P. PUMP ENGINES		300	450	-	-	400	330	300	190	-	1800	520
	MAKE PUMP ENGINES		Buda	Cummins	-	-	G.M.	G.M.	Chrysler	Chrysler	-	Cummins	GrayMar
	NO. PROP/PUMP ENGS		2	2	2	2	2	2	0	0	-	2/3	1/3
	MAKE OF PUMPS			Byr.Jack.	Jacuzzi	Waterous	Hale	Hale	Hale	Hale	-	DeLaval	DeLaval
	GPM OF PUMPS		2000	3750	2500	1250	4500	2000	1500	1200	-	3200	3000

	FIREBOAT SURVEY 86	CITY: STATE:	OAKLAND CAL.	PORTLAND ORE.			SAN DIEGO CAL.					SAN FRANCISCO CAL.	
	FIREBOAT		1	1	2	3	1	2	3	4	5	1	2
MONITORS	TOTAL NO. MONITORS		7	3	2	2	2	1	1	1	-	4	2
	GPM OF LARGEST		3000	10,000	5000	1500	2500	2000	1500	1200	-	3000	1600
	REACH OF LARGEST		300'	275'	200'	125'	200'	100'	100'	100'	-	400'	300'
	HIGHEST(FT./WATER)		25'	10'	10'	10'						18'	20'
	LOWEST(FT./WATER)		6'	4'	6'	4'						1'	10'
OUTLETS	NO. 3½" OUTLETS		(3")12	13			-	-	-	-	-	14	4
	NO. 2½" OUTLETS				6	6	4	2	2	2	-	0	0
	NO. 1½" OUTLETS		4				6	3	3	3	-	0	0
HOSE	3½" HOSE (FEET)	(3")1500'					-	-	-	-	-	8000	
	2½" HOSE (FEET)			1200'	600'	300'	100'	50'	50'	50'	-	0	
	1½" HOSE (FEET)		1000'	400'	300'	200'	300'	150'	150'	150'	-	800'	
EXTINGUISHING AGENTS	AFFF (GALS.)		200+	275	30		100	50	50	50	-	450	
	SIZE OUTLET & GPM		1-3"@ 550				1½"@ 100	1½"@ 75	1½"@ 75	1½"@ 75	-	All Outlets	
	PROTEIN FOAM(GALS.						-	-	-	-	-	0	
	SIZE OUTLET & GPM			2½" @ 200			-	-	-	-	-	-	
	HI EXPANSION(GALS.)					30	-	-	-	-	-	0	
	DRY CHEMICAL(LBS.)						50	50	50	50	-		
	CO_2 (LBS.)						50	50	50	50	-	1000	
	OTHER						Halon	-	-	-	-	-	
	NO.& SIZE FOAM MON.		0	2-4"		1-1½"1-2½"	1-1½"	-	-	-	-	All Outlets	
ADJUNCTS	DEWATERING? (GPM)		750	2000	500		100	75	75	75	-	900	
	AERIAL PLATFORM?			Yes			0	0	0	0	-	0	
	HEIGHT(FT./WATER)			40'			-	-	-	-	-	-	
	MANEUVERING JETS?			Yes	Yes	Yes	-	6	-	-	-	4	
	TELESCOPING TOWER?			0	0	0	-	-	-	-	-	Yes(48")	
	LADDERS (LENGTH)		30'	10'	10'		0	0	0	0	-	22' 14'	

18	FIREBOAT SURVEY 86	CITY: STATE:	OAKLAND CAL.	PORTLAND ORE.			SAN DIEGO CAL.					SAN FRANCISCO CAL.	
	FIREBOAT		1	1	2	3	1	2	3	4	5	1	2
CREW (NO.)	OFFICER		1	1	1	1	-	-	-	-	-	1	
	OPERATOR (PILOT)		1	1	1	1	1	1	1	1	1	1	
	MATE		0	0	0	0	1	1	1	1	-	0	
	ENGINEER		1	1	1	1	-	-	-	-	-	1	
	FIREFIGHTER		1	1	1		-	-	-	-	-	3	
	SCUBA DIVER		0	0	0	0	-	-	-	-	-	0	
	TOTAL ON DUTY		4	4	2	2	2	2	2	2		6 *	
IS BOAT COVERED?			No	No	No	No	Yes	Yes	Yes	Yes	No	No	
IF BUILDING NEW STATIO WOULD INCLUDE COVER?			No	Yes			No					Yes	
IF BUILDING NEW LARGE BOAT WOULD YOU INCLUDE AN AERIAL PLATFORM?			Yes	No			No					Yes	
IF BUILDING NEW BOAT WHAT HULL TYPE AND MATERIAL?				Aluminum - Planing			Deep "V" Wood and Fiberglass					Aluminum Catamaran or jet foil type	
ADDITIONAL INFORMATION AND COMMENTS:			Bow & stern thrusters									* Engine and boat run out of same station with 7 members assigned, 3 on boat & 4 on engine.	

Heavy, deep draft vessel for off-shore. Lighter, shallow draft for harbor use. L.A. Boat 2 is perfect example of good design basis. S.E.S. is too high tech.

Highly recommend covered boat slip for lower maintenance costs.

Aerial platform should be planned by naval architect. Look into industrial types for better marine use.

Brand name engines & trans.

SURVEY 86	CITY: STATE:	SEATTLE WASH.		TACOMA WASH.		TAMPA FLA.	WASHINGTON D.C.		WILMINGTON N.C.			
MARK "R" AFTER BOAT NO. IF BOAT IS IN RESERVE.	a. VESSEL NAME b. BUILDER c. DESIGNER	CHIEF SEATTLE Nichols Bros. Nickum & Spaulding	ALKI Pac. Coast Eng.(Orcal) W. C. Nickum	FIREBOAT 5 Vosper Hovermarine	FIREBOAT 15 Vosper Hovermarine	FRANCIS BELLAMY Harold B. Parsch Same	JOHN H. GLENN Diesel Shipbldg. H.Newton Whittels	FIRERESCUE TWO Boston Whaler Same	ATLANTIC IV Bath Iron Works U.S. Navy	FORT JOHNSTON Cape Fear Tow. Same	ATLANTIC V New Bern, N.C. U.S. Navy	
VESSEL STATISTICS												
FIREBOAT		1	2	1	2	1	1	2	1	2	3	
LENGTH (FEET)		96'6"	126'	70'	70'	68'2"	70'	25'	64'	106'	61'	
BEAM (FEET)		23'	28'	20'	20'	18'8"	21'	8'	16'		16'	
DRAFT (FEET)		7'6"	10'	5'6"	5'6"	3'6"	5'6"	1'6"	9'8"		4'	
DISPLACEMENT(TONS)		81	196	39	39	50	83	3.1	92	250	43½	
YEAR BUILT		1984	1927	1979	1980	1956	1962	1983	1932	1984	1981	
HULL TYPE		Semi Plan	Displ.	S.E.S.	S.E.S.	Shallow V	Displ.	Plane.	Displ.	Displ.	Plane.	
HULL MATERIAL		Alum.	Steel	Fiberglas	Fiberglas	Steel	Steel	Fiberglas	Steel	Steel	Steel	
PROPULSION TYPE		Conven.	Conven.	Conv/SES	Conv/SES	Conven	Conven.	Outboar	Conven.	Conven.	Conven.	
SPEED (KNOTS)		26	13	31	31	15	14.7	51	12	16	28	
GPM@150 PSI (STOP)		8500	16,200	7000	7000	6000	7000	225	2500	2000	4000	
GPM@150 PSI (MOVE)		8500	16,200			3000	7000	225	2500	2000	4000	
FUEL(GALS)GAS-DIES		1500 D	4000 D.	600 D.	600 D.	1000 D	1000 D.	140 G.	375 D.	D.	820 D.	
ENGINES & PUMPS												
NO. PROPULSION ENG		3	2	2	2	2	3	2	1	1	4	
H.P. PROPULSION		3000	1000	445	445	257	456	155	250	3500	600	
MAKE PROPULSION		Detroit	Clevelan	G.M.	G.M.	Detroi	G.M.	Mhurude	GMC	Locomotive	GMC	
NO. PUMP ENGINES		0	12	1	1	4	0	1	2	1	4	
H.P. PUMP ENGINES		-	120	570	570	257	-	65	250	1000	1150	
MAKE PUMP ENGINES		-	Detroi	G.M.	G.M.	Detroit	-	VW	GMC	-	Detroit	
NO. PROP/PUMP ENGS		3	0	0	0	2	2	0	1	1	4	
MAKE OF PUMPS		Wrthng.	Byn Jack	Waterous	Waterous	Hale	Peerless	Hale	Hale			
GPM OF PUMPS		2500+	2700	2250	2250	1500	3500	225	1250	2000	4000	

	FIREBOAT	CITY:	SEATTLE		TACOMA		TAMPA	WASHINGTON		WILMINGTON		
20	SURVEY 86	STATE:	WASH.		WASH.		FLA.	D.C.		N.C.		
	FIREBOAT		1	2	1	2	1	1	2	1	2	3
MONITORS	TOTAL NO. MONITORS		6	8	6	6	3	3	1	2	2	2
	GPM OF LARGEST		7000	7000	5500	5500	1000	2000	500	250	250	4000
	REACH OF LARGEST		-	-	570'	570'	75'	175'	80'	150'	150'	150'
	HIGHEST(FT./WATER)		45'	45'	15'	15'		16'6"	6'2"			
	LOWEST(FT./WATER)		10'	10'	2'	2'		10'2"	6'2"			
OUTLETS	NO. 3½" OUTLETS		14	20	4 - 5"	4 - 5"	0	4	0	0	0	0
	NO. 2½" OUTLETS		-	-	3	3	10	2	1	8	8	8
	NO. 1½" OUTLETS		4	4	2	2	0	0	2	0	0	0
HOSE	3½" HOSE (FEET)		600'	600'	400'-5"	400-5"	600'-3"	0	0	0	0	0
	2½" HOSE (FEET)		600'	600'	700'	700'	100'	1600'-3"	0	1000'	1000'	1000'
	1½" HOSE (FEET)		400'	400'	500'	500'	800'-1¾"	1000'	165'	400'	400'	400'
EXTINGUISHING AGENTS	AFFF (GALS.)		300	-	150	150	60	300	10	0		1000
	SIZE OUTLET & GPM		2½@500	-	1500 GPM	1500 GPM	2½"@250	3"	1½"	-	-	2"
	PROTEIN FOAM(GALS.		-	50	0	0	0	0	0	-	-	-
	SIZE OUTLET & GPM		-	2½"	0	0	0	-	-	-	-	2000GPM
	HI EXPANSION(GALS.)		-	-	0	0	0	-	-	-	-	-
	DRY CHEMICAL(LBS.)		90	90	80	80	0	-	-	-	-	400
	CO_2 (LBS.)		60	60	40	40	0	-	-	-	-	-
	OTHER		-	-	0	0	0	137 Halon	-	-	-	-
	NO.& SIZE FOAM MON		1-2½"	0			0	1	-	2"	2"	2-2"
ADJUNCTS	DEWATERING? (GPM)		-	-	1500	1500	250	3000	200	-	-	-
	AERIAL PLATFORM?		0	0	Ladder/Squirt	Ladder/Squirt	0	0	0	-	-	-
	HEIGHT(FT./WATER)		-	-	35'	35'	-	-	-	-	-	-
	MANEUVERING JETS?		Yes	Yes	-	-	0	-	-	-	-	-
	TELESCOPING TOWER?		Yes	Yes	-	-	0	-	-	-	-	-
	LADDERS (LENGTH)		16' 18'	14' 18'	20'(35'	20'(35')	14'	36'	-	-	-	-

EBOAT SURVEY 86	CITY: STATE:	SEATTLE WASH.		TACOMA WASH.		TAMPA FLA.	WASHINGTON D.C.		WILMINGTON N.C.			
FIREBOAT		1	2	1	2	1	1	2	1	2	3	
OFFICER		1	1	1	1	1	1	0	1	1	1	
OPERATOR (PILOT)		1	1	1	1	1	1	1	-	-	-	
MATE		-	-	-	-	0	0	0			2	
ENGINEER		1	1	-	-	0	1	0	1	1	1	
FIREFIGHTER		1	1	1	-	2	2	1	2	2	-	
SCUBA DIVER		-	-	1 (FF)	-	0	0	0	-	-	-	
TOTAL ON DUTY		1-3	1-3	3	2	4	5	2	4	4	4	
BOAT COVERED?		No	No	No	No	No	No	No	No	No	No	
BUILDING NEW STATIO ULD INCLUDE COVER?		No		Yes		No	Yes		Yes			
BUILDING NEW LARGE AT WOULD YOU INCLUDE AERIAL PLATFORM?		No		No		Yes	Yes		Yes			
BUILDING NEW BOAT AT HULL TYPE AND TERIAL?		Planing Aluminum		Fiberglass		Fib/gla			Aluminum/alloy steel			
DITIONAL INFORMATION D COMMENTS:							5 members are on duty at all times. The 25' Whaler is sent to rescues and fir s in shallow H_2O areas with 2 men leaving 3 men on the Glenn. They ca be underway wi h 3 and get adde manpower at scene if anoth r emergency aris s.					

	FIREBOAT SURVEY 86	CITY: STATE:	MONTREAL CAN.	TORONTO CAN.	VANCOUVER CAN.
VESSEL STATISTICS	MARK "R" AFTER BOAT NO. = BOAT IS IN RESERVE.	a. VESSEL NAME b. BUILDER c. DESIGNER	JAMES BATTLE Detroit Shipbldg.	WM. LYON MACKENZIE	FIREBOAT II Yarrows Shipyard Milne, Gilmore, Germ.
	FIREBOAT		1	1	1
	LENGTH (FEET)		117'	81'	87'11
	BEAM (FEET)		25'	20'	21'6"
	DRAFT (FEET)		11'	7'	6'6"
	DISPLACEMENT(TONS)		226	200	180
	YEAR BUILT		1900	1964	1951
	HULL TYPE		Displ.	Displ.	Displ.
	HULL MATERIAL		Steel	Steel	Steel
	PROPULSION TYPE		Conven	Conven	Conven.
	SPEED (KNOTS)		14	13½	12.9
	GPM@150 PSI (STOP.)		6000	7000	20,000
	GPM@150 PSI (MOVE)		6000		12,000
	FUEL(GALS)GAS-DIES		10,000D	D	6300 D
ENGINES & PUMPS	NO. PROPULSION ENG		1	2	2
	H.P. PROPULSION		1150	500	1100
	MAKE PROPULSION		Alco	Cummins	Detroit
	NO. PUMP ENGINES		6		5
	H.P. PUMP ENGINES		90		2450
	MAKE PUMP ENGINES		Cummins		Detroit
	NO. PROP/PUMP ENGS		1		2
	MA OF PUMPS				Pumps Pow.
	GP PUMPS				

	FIREBOAT SURVEY 86	CITY: STATE:	MON-TREAL CAN.	TORONTO CAN.	VAN-COUVER CAN.
	FIREBOAT		1	1	1
MONITORS	TOTAL NO. MONITORS		2	6	4
	GPM OF LARGEST		6000		
	REACH OF LARGEST		150'		300'
	HIGHEST(FT./WATER)		125'	54'	
	LOWEST(FT./WATER)		H_2O Level		
OUTLETS	NO. 3½" OUTLETS		-		5 - 3"
	NO. 2½" OUTLETS		20		8
	NO. 1½" OUTLETS		-		4
HOSE	3½" HOSE (FEET)		-		1200'
	2½" HOSE (FEET)		750'		250'
	1½" HOSE (FEET)		-		300'
EXTINGUISHING AGENTS	AFFF (GALS.)				34
	SIZE OUTLET & GPM				1½"@60
	PROTEIN FOAM(GALS.				225
	SIZE OUTLET & GPM				1½"
	HI EXPANSION(GALS.)				-
	DRY CHEMICAL(LBS.)				350
	CO_2 (LBS.)				600
	OTHER				-
	NO.& SIZE FOAM MON.				-
ADJUNCTS	DEWATERING? (GPM)				-
	AERIAL PLATFORM?		1	Yes	-
	HEIGHT(FT./WATER)		125'	54'	-
	MANEUVERING JETS?				5
	TELESCOPING TOWER?		-	0	0
	LADDERS (LENGTH)		Yes		24'

24	FIREBOAT SURVEY 86	CITY: STATE:	MON-TREAL CAN.	TORONTO CAN.	VAN-COUVER CAN.
	FIREBOAT		1	1	1
CREW (NO.)	OFFICER		1		1
	OPERATOR (PILOT)		-		1
	MATE		-		1
	ENGINEER		2		1
	FIREFIGHTER		3		2
	SCUBA DIVER		-		-
	TOTAL ON DUTY		6		6
IS BOAT COVERED?			No		No
IF BUILDING NEW STATION WOULD INCLUDE COVER?			Yes		Yes
IF BUILDING NEW LARGE BOAT WOULD YOU INCLUDE AN AERIAL PLATFORM?			Yes		Yes
IF BUILDING NEW BOAT WHAT HULL TYPE AND MATERIAL?					Steel Displ.
ADDITIONAL INFORMATION AND COMMENTS:					

SUMMARY

CITY STATE	NO. OF BOATS	BOAT NAME DISPLACE.-YR.BUILT	HULL	LENGTH	BEAM	DRAFT	SPEED	FUEL	GPM	PUMPS	PROP. ENGINES	MONI-TORS	OUTLETS	HOSE	FOAM
BALTIMORE, MD.	(4) 1	T. D'ALESANDRO JR. 149 Tons - 1956	Steel	103'8"	21'8½"	11'	20	3670 Diesel	12,500	2	2	4	20	2600'	1225 Protein
	2	J. HAROLD GRADY 109 Tons - 1960	Steel	85'	20'	8'	18	2300 Diesel	6,000	1	1	3	12	2600'	1000 Protein
	3R	P. W. WILKINSON 109 Tons - 1960	Steel	85'	20'	8'	18	2300 Diesel	6,000	1	1	3	12	2600'	1000 Protein
	4R	AUGUST EMRICH 109 Tons - 1960	Steel	85'	20'	8'	18	2300 Diesel	6,000	1	1	3	12	2600'	1000 Protein
BOSTON, MASS.	(2) 1	FIREFIGHTER 93 Tons - 1971	Steel	76'	19'6"	5'8"	14	2000 Diesel	6,000	2	2	7	28	4300'	500AFF 500 HIX
	2	St. FLORIAN 14 Tons - 1976	Alum.	45'	15'10"	4'2"	22	631 Diesel	3,000	2	2	2	9	400'	50 AFFF 50 HIX
BUFFALO, N.Y.	(1) 1	EDMOND M. COTTER 178 Tons - 1900	Steel	118'	28'	11'	11½	Diesel	15,000	4	2	5	18	3000'	660AFFF 50P.50I
CHICAGO, ILL.	(3) 1	JOSEPH MEDILL 209 Tons - 1949	Steel	92'	24'	7'6"	14	Diesel	12,000	6	4(2)	6	19	2200'	180Pro
	2	VICTOR L. SCHAEFER 209 Tons - 1949	Steel	92'	24'	7'6"	14	Diesel	12,000	6	4(2)	6	19	2200'	180Pro
	3R	FRED A. BUSSE Tons - 1936	Steel	90'6"	22'4"	7'	15	Diesel	7,600	4	3	6	14	1700'	
(The Chicago Fire Department operates one small trailer mounted boat for in-land rescue out of its Air/Sea Rescue unit at Meigs Field)															
HONOLULU, HAWAII	(1) 1	ABNER T. LONGLEY 89 Tons - 1951	Steel	87'	19'	7'4"	13½	4000 Diesel	9,000	6	4	5	20	2500'	1000P H

CITY STATE	NO. OF BOATS	BOAT NAME DISPLACE.-YR.BUILT	HULL	LENGTH	BEAM	DRAFT	SPEED	FUEL	GPM	PUMPS	PROP. ENGINES	MONI-TORS	OUTLETS	HOSE	FOAM
LEVELAND, HIO	(1) 1	A. J. CELEBREZZE 42 Tons - 1961	Steel	60'	16'	6'	13	1000 Diesel	6,000	4	2	5	16	1000'	120 Pro 120 HEX
ETROIT, ICH.	(1) 1	CURTIS RANDOLPH 68 Tons - 1977	Alum.	77'10	21'6"	5'9"	23	1520 Diesel	10,000		2	4			200 Pro
T.LAUDERDALE LA.	(1) 1	_____ - 1969	Alum.	37'	13'9"	2'6"	24	350 Gasolin	1,000	1	2	1	6	450'	40 HEX
OUSTON, EXAS	(3) 1	CAPT. FARNSWORTH 105 Tons - 1974	Steel	80'	22'	6'6"	15	2700 Diesel	6,000	4	2	2	8	2600'	2000AFF
	2	J. S. BRACEWELL 74 Tons - 1983	Alum.	68'	20'	3'6"	17	1000 Diesel	4,000	2	2	3	8	2000'	1000AFF
	3	H. T. TELLEPSEN 74 Tons - 1983	Alum.	68'	20'	3'6"	17	1000 Diesel	4,000	2	2	3	8	2000'	1000AFF
JACKSONVILLE, LA.	(3) 1	EUGENE JOHNSON 95 Tons - 1969	Alum.	65'	15'	5'	20	1000 Diesel	6,000	3	3	3	10	2450'	100AFF
	2	MARINE 2 2 Tons - 1980	Fib/glas	26'	9'	2'	25	60 Gasolin	250	1	1	0	2	200'	0
	3	MARINE 3 3½ Tons - 1983	Fib/glas	27'	10'	2½'	25	160 Gasolin	250	1	1	0	3	250'	30 AFF
LONG BEACH, CALIF.	(3) 1	FIREBOAT 15 52 Tons - 1952	Steel	56'6"	15'7"	6'	12	1000 Diesel	4,500	2	2	4	12	1900'	500Pro. 40AFFF
	2	FIREBOAT 20 52 Tons - 1953	Steel	56'6"	15'7"	6'	12	1000 Diesel	4,500	2	2	4	12	1900'	500Pro. 40AFFF
	3	FIREBOAT 21 Tons - 1983	Fib/glas	35'	12'6"	2'6"	28	200 Gasolin	1,000	1	2	1	4	300'	15AFFF
(Two new replacement		boats being built	Steel	88'6"	21'	6'	15½	1500	10,000	3	2	7	11		

CITY STATE	NO. OF BOATS	BOAT NAME DISPLACE.-YR.BUILT	HULL	LENGTH	BEAM	DRAFT	SPEED	FUEL	GPM	PUMPS	PROP. ENGINES	MONI-TORS	OUTLETS	HOSE	FOAM
LOS ANGELES, CALIF.	(5) 1	FIREBOAT 1 20 Tons - 1968	Glas/wood	34'	12'6"	3'	30	150 Gasoline	750	1	2	1	4	350'	65AFFF
	2	RALPH J. SCOTT 152 Tons - 1925	Steel	99'	19'	7'	13½	2156 Diesel	18,655	6	3	13	18	3350'	250AFFF
	3	FIREBOAT 3 20 Tons - 1967	Glas/wood	34'	12'6"	3'	30	150 Gasoline	750	1	2	1	4	350'	65AFFF
	4	BETHEL F. GIFFORD 132 Tons - 1962	Steel	76'6"	24'	8	12	3538 Diesel	9,000	4	2	17	10	1850'	75AFFF 450Prot
	5	FIREBOAT 5 20 Tons - 1967	Glas/wood	34'	12'6"	3'	30	150 Gasoline	750	1	2	1	4	350'	65AFFF
MILWAUKEE, WIS.	(1) 1	AMPHIBIAN 15 Tons - 1984	Alum.	35'	10'	4'4"	10	144 Diesel	2,500	2	1	3	6	-	-
MOBILE, ALA.	(1) 1	RAMONA DOYLE 46 Tons - 1939	Steel	63'	19'5"	5'5"	12	500 Diesel	3,800	2	1	4	6	1400'	600AFFF
NEWARK, N.J.	(1) 1	JOHN F. KENNEDY - 1964	Steel	46'	15'3"	3'	15	600	4,000	2	2	3	6	2000'	200Prot.
NEW HAVEN, CONN.	(1) 1	SALLY LEE 90 Tons - 1962	Steel	68'6"	21'	7'	12.7	1300 Diesel	7,000	2	4	4	15	1600'	760Prot.
NEW ORLEANS, LA.	(2) 1	_____ 370 Tons - 1923	Steel	138'8"	29'	12'6"	20	18,000 Diesel	10,000	2	2	4	48	3500'	2000Pro.
	2	_____ 172 Tons - 1942	Steel	94'	25'	12'	12	5000 Diesel	6,000	2	1	4	15	2500'	3000Pro.
OAKLAND, CALIF.	(1) 1	CITY OF OAKLAND 343 Tons - 1941	Steel	100'	27'	15'	15	Diesel	10,000	5	2	7	16	2500'	200AFFF

CITY STATE	NO. OF BOATS	BOAT NAME DISPLACE.-YR.BUILT	HULL	LENGTH	BEAM	DRAFT	SPEED	FUEL	GPM	PUMPS	PROP. ENGINES	MONI-TORS	OUTLETS	HOSE	FOAM
NEW YORK, N.Y.	(7) 1	JOHN D. McKEAN 330 Tons - 1955	Steel	129'	30'	9'	12	7600 Diesel	20,000	4	2	6	16	4400'	250Pro.
	2.	JOHN J. HARVEY 268 Tons - 1931	Steel	130'	28'	9'	17	7300 Diesel	16,000	4	2	8	24	5000'	250Pro.
	3	FIRE FIGHTER 325 Tons - 1938	Steel	134'	32'	9'	15	10,000 Diesel	20,000	4	2	8	20	4400'	300Pro.
	4	HARRY M. ARCHER 213 Tons - 1958	Steel	105'	27'	9'	12	6500 Diesel	8,000	2	2	5	12	4400'	500Pro.
	5R	ROBERT F. WAGNER 213 Tons - 1959	Steel	105'	27'	9'	12	6500 Diesel	8,000	2	2	5	12	4400'	500Pro.
	6R	ALFRED E. SMITH 213 Tons - 1961	Steel	105'	27'	9'	12	6500 Diesel	8,000	2	2	5	12	4400'	500Pro.
	7	SMOKE II (Tender) 35 Tons - 1958	Steel	52'	14'	4'	19	300 Diesel	2,000	2	2	2	4	700'	20Pro.
PHILADELPHIA PA.	(3) 1	DELAWARE 88 Tons - 1950	Steel	79'4"	19'	8'	12	2000 Diesel	6,000	4	4	3	10	3200'	1050Pro.
	2	BENJ. FRANKLIN 88 Tons - 1950	Steel	79'4"	19'	8'	12	2000 Diesel	6,000	4	4	3	10	3200'	1050Pro.
	3R	BERNARD SAMUEL 77 Tons - 1948	Steel	75'10"	18'	8'	12	2000 Diesel	6,000	4	4	3	6	3200'	100Pro.
PORTLAND, ORE.	(3) 1R	CAMPBELL 76 Tons - 1927	Steel	90'	20'6"	6'		2500 Diesel	13,000	4	2	3	13	1600'	275AFFF
	2	SPENCER 20 Tons - 1972	Alum.	40'	16'	2'6"	30	180 Diesel	5,000	2	2	2	6	900'	30 AFFF
	3	WILLIAMS 10 Tons - 1983	Alum.	40'	12'	2'6"	30	150 Diesel	3,000	2	2	2	6	500'	30 HiX.

CITY STATE	NO. OF BOATS	BOAT NAME DISPLACE.-YR.BUILT	HULL	LENGTH	BEAM	DRAFT	SPEED	FUEL	GPM	PUMPS	PROP. ENGINES	MONI-TORS	OUTLETS	HOSE	FOAM
SAN DIEGO, CALIF.	(5) 1	HARBOR ISLAND 12 Tons - 1971	Alum.	42'	14'	4'	11	350 Diesel	4,500	3	2	2	10	400'	100AFF
	2	SHELTER ISLAND 10 Tons - 1978	Glas/wood	32'	11'	3'6"	21	100 Diesel	2,000	4	2	1	5	200'	50 AFF
	3	POINT LOMA 9 Tons - 1977	Glas/wood	32'	11'	3'6"	34	100 Gasoline	1,500	1	2	1	5	200'	50 AFF
	4	POINT ZUNIGA 7 Tons - 1972	Glas/wood	32'	10'	3'6"	35	80 Gasoline	1,200	1	2	1	5	200'	50 AFF
	5	BALLAST POINT	Fib/glas	18'	5'	1'6"	38	10	-	-	-	-	-	-	-
SAN FRANCISCO CALIF.	(2) 1	PHOENIX 134 Tons - 1954	Steel	89'	19'	6'	16	2600 Diesel	9,600	3	2	6	14	3800'	450AFF
	2R	FRANK G. WHITE 95 Tons - 1947	Steel	72'	16'	10'	10	3800 Diesel	6,000	3	1	2	4	-	-
SEATTLE, WASH.	(2) 1	CHIEF SEATTLE 81 Tons - 1984	Alum.	96'	23'	7'6"	26	1500 Diesel	8,500	3	3	6	18	1600'	300AFF
	2	ALKI 196 Tons - 1927	Steel	126'	28'	10'	13	4000 Diesel	16,200	12	2	8	24	1600'	50 Pro
TACOMA, WASH.	(2) 1	_____ 39 Tons - 1979	GRP	70'	20'	5'6"	31	600 Diesel	7,000	2	2	6	9	1600'	150AFF
	2	_____ 39 Tons - 1980	GRP	70'	20'	5'6"	31	600 Diesel	7,000	2	2	6	9	1600'	150AFF
[illegible]	(1) 1	FRANCIS BELLAMY 50 Tons - 1956	Steel	68'2"	18'8"	3'6"	15	1000 Diesel	6,000	4	2	3	10	1500'	60 AFF
WASHINGTON, D.C.	(2) 1	JOHN H. GLENN 83 Tons - 1962	Steel	70'	21'	5'6"	14.7	1000 Diesel	7,000	2	3	3	6	2600'	300AFF
	2	FIRERESCUE TWO 3.1 Tons - 1983	Fib/glas	25'	8'	1'6"	51	140 Gasoline	225	1	2	1	3	165'	10 AFF

CITY STATE	NO. OF BOATS	BOAT NAME DISPLACE.-YR.BUILT	HULL	LENGTH	BEAM	DRAFT	SPEED	FUEL	GPM	PUMPS	PROP. ENGINES	MONI-TORS	OUTLETS	HOSE	FOAM
[illegible]INGTON, [illegible].	(3) 1	ATLANTIC IV 92 Tons - 1932	Steel	64'	16'	9'8"	12	375 Diesel	2,500	2	1	2	8	1400'	0
	2	FORT JOHNSTON 250 Tons - 1984	Steel	106'			16	Diesel	2,000	1	1	2	8	1400'	1000AFF
	3	ATLANTIC V 43½ Tons - 1971	Steel	61'	16'	4'	28	820 Diesel	4,000	4	4	2	8	1400'	1000AFF
[illegible]TREAL, [illegible]., CANADA	(1) 1	JAMES BATTLE 226 Tons - 1900	Steel	117'	25'	11'	14	10,000 Diesel	6,000	6	1	2	20	750'	Avail.
[illegible]ONTO, [illegible]ADA	(1) 1	WM. LYON MACKENZIE 200 Tons - 1964	Steel	81'	20'	7'	13½	Diesel	7,000		2	6			
[illegible]NCOUVER, [illegible]., CANADA	(1) 1	FIREBOAT II 180 Tons - 1951	Steel	87'11	21'6"	6'6"	12.9	6300 Diesel	20,000	5	2	4	19	1750'	34 AFFF 225 Pro

APPENDIX O

FUNDING AND OPERATION SURVEY OF PORTS OUTSIDE VIRGINIA

City	Miles of Wharf	Number of Boats (Active/Reserve)	Source of Funding (Marine Fire Fighting)	Source of Funding (Boat Purchase)	Annual Operating Costs	Operating Authority	Harbor Fees
1. Baltimore	15	4 (2/2)	City: ($2.2 million) State: ($1.8 million)	City	$4 million	City Fire Dept.	No
2. Boston	10	2	City	City Bonds	$ 392,019	City Port. Auth. City Fire Dept.	No
3. Buffalo	15	1	City	Unknown (purchased in 1900)	Not Separate Account	City Fire Dept.	No
4. Charleston	Not Reported	ALL WATERSIDE FIREFIGHTING HANDLED BY NAVY AND USCG					No
5. Chicago	Not Reported	3 (2/1)	City	City	Not Known	City Fire Dept.	Yes
6. Cleveland	12	1	City	City	Not Separate Item	City Fire Dept.	No
7. Houston	50	3	Harbor Fees; City	City	$2,150,024	Houston PA	$18.80-$330
8. Jacksonville	5	3	City	City	$ 600,000	City	No
9. Mobile	15.7	1	City	Federal $1 Purchase City paid for conversion	$15 -$20,000 (maintenance)	City Fire Dept.	No
10. New Orleans	12	2	Port of New Orleans*	Port and Navy	$ 300,000	Port of New Orleans	$150-$200
11. New York	Not Reported	7 (5/2)	City	City	$ 5.5 million	City Fire Dept.	No

FUNDING AND OPERATION SURVEY OF PORTS OUTSIDE VIRGINIA
(continued)

City	Miles of Wharf	Number of Boats (Active/Reserve)	Source of Funding (Marine Fire Fighting)	Source of Funding (Boat Purchase)	Annual Operating Costs	Operating Authority	Harbor Fees
12. Philadelphia	21.8	3 (2/1)	City	City	Not Reported	City Fire Dept.	No
13. Savannah	Not Reported	1	City; Industrial Zone Tax; Harbor Fees	City	$2,000-$3,000 (maintenance)	City Fire Dept.	$15-$50
14. Seattle	12½	2	City	City	$1,000,000	City Fire Dept.	$560-$7,000
15. Tampa	4+	1	Tampa Port Authority;* City; Harbor Fees	Tampa Port Authority; City; Harbor Fees	City: Up to $2,500 PA: Additional; City: Crew	City and PA	$1.1¢/ton
16. Wilmington	3	1	City	Navy Donation-City paid for conversion	$2,000 Fuel and Maintenance $12,000-$48,000 full overhaul	City	No

*Self-supporting state agency

*The Port of New Orleans, with its Board of Commissioners, and the Tampa Port Authority are quasi state agencies that generate their own money through property rental, harbor fees and, for the Tampa Port Authority, taxing power if necessary. They can submit requests to the legislature for state funds to help with major projects, but there is no guarantee that the funds will be appropriated. No state funds are regularly appropriated for these agencies.

SUMMARY

FUNDING AND OPERATION SURVEY

City	Total State	Partial State	Total City	City and Harbor Fee	Total Military	Independent Agency
1. BALTIMORE		X				
2. BOSTON			X			
3. BUFFALO			X			
4. CHARLESTON					X	
5. CHICAGO				X		
6. CLEVELAND			X			
7. HOUSTON				X		
8. JACKSONVILLE			X			
9. MOBILE			X			
10. NEW ORLEANS*						X
11. NEW YORK			X			
12. PHILADELPHIA			X			
13. SAVANNAH				X		
14. SEATTLE				X		
15. TAMPA*						X
16. WILMINGTON			X			
TOTALS	0	1	8	4	1	2

*Self-supporting Port Authority

APPENDIX P

PORTS OF HAMPTON ROADS

PIERS, WHARVES, AND DOCKS[1]
(EXCLUDING MARINAS)

	Total Described	Timber Piled Timber Decked	Timber Bulkhead With Solid Fill	Timber Fendered	Concrete	Sheet Pile With Solid Fill	Other[2]
Norfolk[3]	100	70	9	7	8	1	5
Chesapeake	37	27	1	--	4	--	5
Portsmouth	18	12	--	4	2	--	--
Newport News	45	18	15	4	3	1	4
Hampton	26	15	5	4	1	--	1
	226	142	30	19	18	2	15

91.15% constructed or fendered by combustible materials (e.g. timber, asphalt fill, etc.)

Notes: (1) "The Ports of Hampton Roads, VA", Port Series II, USA Corps of Engineers
(2) Construction includes asphalt fill
(3) Includes Little Creek

APPENDIX Q

MULTIPURPOSE CRAFT SPECIFICATIONS FOR HAMPTON ROADS PORTS

PROPOSED BOATS	EXISTING BOATS		
Item	Naval Station (Norfolk)	Naval Amphi Base (Norfolk)	Norfolk Naval Shipyard (Norfolk)
	6 Tugs	No Tugs; 1 LCM-6 with P-250	1 Tug
1. Sustain 4' Sea State	Yes	No	Yes
2. Dash Speed Over 30 Knots	No (10K)	No	No
3. Low Wake At High Speeds	No	No	No
4. Sustained 1 to 12 Knot Patrol Speed	Yes	No	Yes
5. Rugged Exterior Construction	Yes	No	Yes
6. Construction and Safety Standards	Yes	No	Yes
7. Salt Water Type Construction	Yes	Yes	Yes
8. Fully Operable By Two Men	No (5)	No	No
9. Use Fire Retardent Materials Or Protective Design	Yes	Yes	Yes
10. Operate in Shallow Water	No (13')	Yes	No
11. Maximum Solid Height 14 Feet	No (27')	No	No
12. Communications Systems	Basic Military	Basic Military	Basic Military
13. Navigation Aids	Yes	No	Yes
14. Working Emergency Lights	Yes (no special ones)	No	Yes (no special ones)
15. Quick Start Mechanical System	Yes, if engine not secured; otherwise, 8¼ hours	No	See Column 2
16. Reliable and Dependable Operation	Yes	No	Yes
17. Minimal Capital Costs	No	No	No
18. Minimal Operating Costs	No	No	No

MULTIPURPOSE CRAFT SPECIFICATIONS FOR HAMPTON ROADS PORTS
(continued)

PROPOSED BOATS	EXISTING BOATS		
Item	Naval Station (Norfolk)	Naval Amphi Base (Norfolk)	Norfolk Naval Shipyard (Norfolk)
19. 20 Year Hull Life Expectancy	Yes	No	Yes
20. Day Crew Facilities	Yes	No	Yes
21. Reserve Payload (crew & rescuees)	Yes (10 people)	No	Yes
22. Carry Small Boat	No (carries rafts)	No	No
23. Rigged for Push and Tow	Yes	Yes	Yes
24. 5,500 GPM (@ 150 PSI) Fire Pumping	No (1,000-2,000 GPM at 125 PSI)	No	No
25. Eight Hours Pumping Endurance	Yes	no	Yes
26. Multiple Automated Moniters	No	No	No
27. Manifold Outlets	Yes	No	Yes
28. Protective Water Screen	No	No	No
29. carry Fire-Fighting Tools	Yes	No	Yes
30. Station Keeping Via Propulsion	Yes	No	Yes
31. Shallow Water Fire Pumping Capacity	No	No	No
32. Access To Larger Vessel Decks	Yes (20' al. ladders)	No	Yes
33. Water Level and Higher Monitor	No	No	No
34. Quick Mount Locker for Reserve Gear	No	No	No
35. Aqueous Film Foaming System	Yes	No	Yes
36. Rescue Well or Platform	No	No	No

MULTIPURPOSE CRAFT SPECIFICATIONS FOR HAMPTON ROADS PORTS
(continued)

PROPOSED BOATS	EXISTING BOATS		
Item	Naval Station (Norfolk)	Naval Amphi Base (Norfolk)	Norfolk Naval Shipyard (Norfolk)
37. Rescue Lift Device (Automated)	No	No	No
38. Rescue and First Aid Gear	Yes	No	Yes
39. Alternate Control Station	Yes	No	Yes
40. Enclosed First Aid Area	No	No	No
41. Dewatering (Minimum 500 GPM)	Yes	No	Yes
42. Security and Evidence Locker	No	No	No

SUMMARY: No or extremely inadequate capability for items 2, 3, 8, 10, 11, 17, 18, 22, 24, 26, 28, 31, 33, 34, 36, 37, 40, 42 (18 of 42 items, nearly 43%)

#

Hampton Roads Harbor Protection Council

A. Purpose

To promote fire protection and safety in the Hampton Roads Ports.

B. Membership (19 members)

1. Composition

a. One fire chief or his designee and one council member or representative of the city manager's office from each of the following cities:*

Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach.

b. The Executive Director and one other representative chosen by the Port Authority Board.

c. Two representatives from the maritime community, to include a representative from the shipbuilding community.**

d. The Executive Director of the Department of Fire Programs (nonvoting ex officio).

e. The Director of the Department of Emergency Services (nonvoting ex officio).

f. One representative from the military.

The officers will be elected from the membership.

*The city councils will determine whether the representative will be from their membership or from city manager's office.

**The subcommittee may wish to consider alternatives for choosing these members, e.g., whether they should be from the Hampton Roads Maritime Association and chosen by its president, recommended by the Association but not necessarily from that organization, recommended to the Governor by that Association but appointed by the Governor, with the stipulation that he may or may not follow the recommendations, or appointed by the Governor without the Association's list of recommended representatives.

2. Compensation -- Members will receive expenses, to be paid from Council's budget.

3. Length of term -- Any Governor's appointees will serve for the term of the Governor who appointed them. Members chosen by other authority, e.g., representatives from city councils, city managers' offices, the maritime community, and the Port Authority representative chosen by the Port Authority Board will have four-year terms but may be reappointed for an unlimited number of terms.

4. Number of meetings -- Once formed, the Council may determine this.

. Powers

Upon organization, the Council shall be a public body corporate and politic and shall have the following powers:

1. To adopt and have a common seal and to alter the same at pleasure.

2. To sue and be sued.

3. To adopt bylaws and make rules and regulations for the conduct of its business.

4. To make and enter into all contracts or agreements, as it may determine, which are necessary or incidental to the performance of its duties and to the execution of the powers granted under this chapter.

5. To make application for and to accept loans and grants of money or materials or property at any time from any private or charitable source or the United States of America or the Commonwealth of Virginia, or any agency or instrumentality thereof.

6. To exercise any power usually possessed by private corporations, including the right to expend such funds as may be considered by it to be advisable or necessary in the performance of its duties and functions.

7. To employ an executive director, engineers, fireboat captains, such other professional experts and consultants and such general and clerical employees as may be deemed necessary, and to prescribe their powers and duties and fix their compensation.

8. To appoint committees as needed.

9. To acquire by purchase, gift, devise, condemnation pursuant to Title 25 of the Code of Virginia or otherwise property, real or personal, or any estate or interest therein, within or without the district, and for any of the purposes of the district; and to hold, improve, sell, lease, mortgage, pledge or otherwise dispose of the same or any part thereof.

10. To do and perform any acts and things authorized by this chapter through or by means of its own officers, agents and employees, or by contracts with any persons, firms or corporations.

11. To execute any and all instruments and do and perform any and all acts or things necessary, convenient or desirable for its purposes or to carry out the powers expressly given in this chapter.

HOUSE JOINT RESOLUTION .....

Continuing the subcommittee studying the acquisition of fireboats for the Hampton Roads ports.

WHEREAS, the vulnerability to a catastrophic waterside fire in the Hampton Roads ports area has been a subject of concern for at least two decades; and

WHEREAS, during the last decade attempts to remedy the problem have produced four major studies by state, local, and individual investigators, all of which agree that two well-equipped fireboats would provide the necessary fire-fighting capability for the ports; and

WHEREAS, House Joint Resolution 160 (1988) established a subcommittee to review these studies and to make a definitive report on the need for the boats, the source for their funds, and the appropriate administrative agency for the boats; and

WHEREAS, the subcommittee discovered that neither the military installations in the area nor any local fire department possesses adequate maritime firefighting capability; and

WHEREAS, during the course of its study, the subcommittee found that a craft suitably equipped to fight fires could also contribute to law enforcement, rescue, and environmental protection efforts; and

WHEREAS, the subcommittee affirmed the need for such boats and determined that their purchase and administration should be a cooperative effort by federal, state, local, and private organizations; and

WHEREAS, the subcommittee also found that because of the cooperative nature of the endeavor, additional time would be required to investigate funding sources; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the joint subcommittee studying the acquisition of multipurpose craft for the Hampton Roads ports be continued. Except for an additional representative from the Virginia Beach Fire Department, membership shall remain the same, with vacancies filled in the same manner as original appointments. The subcommittee shall complete its study in time to report its findings to the 1990 Session of the General Assembly.

The indirect costs of the study are estimated to be $11,490; the direct costs shall not exceed $9,360.

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HOUSE JOINT RESOLUTION.....

Encouraging local governments to explore the creation of a multijurisdictional Hampton Roads Harbor Protection Council.

WHEREAS, House Joint Resolution 160 (1988) established a subcommittee to study the acquisition of fireboats for the Hampton Roads Ports; and

WHEREAS, the subcommittee found that such boats were necessary not only to combat fires, but to aid in law enforcement, rescue, and environmental protection efforts in the area; and

WHEREAS, the subcommittee learned that without these boats, billions of dollars in property and goods remain virtually unprotected; and

WHEREAS, current firefighting capability could not extinguish a waterside hazardous substance conflagration, a deficiency that needlessly endangers the lives of tens of thousands of people; and

WHEREAS, releases of hazardous substances and certain other products, such as oil, as a result of fire could further contaminate the Chesapeake Bay and destroy already declining seafood industries; and

WHEREAS, the subcommittee also determined that the purchase, maintenance, and administration of the boats could best be handled through a council composed of two representatives each of the Cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, and Virginia Beach, the Virginia Port Authority, the maritime and shipbuilding community, and the military, in addition to nonvoting ex officio members from the Department of Fire Programs and the Department of Emergency Services; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the General Assembly urges the aforementioned entities to cooperate in exploring the formation of a council for fire and other hazard protection for the Hampton Roads Harbor and for investigating funding sources for purchasing, maintaining and administering two multipurpose craft for the area; and, be it

RESOLVED FINALLY, That the Clerk of the House of Delegates distribute copies of this resolution to the city councils of the aforementioned cities, the president of the Hampton Roads Maritime Association, the Executive Director of the Department of Fire Programs, the State Coordinator of the Department of Emergency Services, the Captain of the Port of the United States Coast Guard and the Commanding Officers of the United States Naval Station in Norfolk, the Norfolk Shipyard, and the United States Naval Amphibious Base at Little Creek; and, be it

RESOLVED FURTHER, That this group report its findings to the Legislative Subcommittee Studying the Acquisition of Fireboats for the Hampton Roads Harbor (HJR 160--1988) by August 1, 1989.

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