

REPORT TO
THE CONGRESS OF THE UNITED STATES

OVERSTATED REQUIREMENTS
FOR
REPLACEMENT OF HIGH-ENDURANCE VESSELS

EASTERN AREA
UNITED STATES COAST GUARD
TREASURY DEPARTMENT



BY
THE COMPTROLLER GENERAL
OF THE UNITED STATES

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COMPTROLLER GENERAL OF THE UNITED STATES
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To the President of the Senate and the
Speaker of the House of Representatives

Our review of the United States Coast Guard's plans for replacing 22 high-endurance vessels assigned to the Eastern Area has shown that the stated requirements can be reduced, thereby saving about \$55,000,000 in construction costs and about \$3,800,000 annually in vessel operating costs. The belief that the requirements for high-endurance vessels are overstated is based on our review of operating experience of the present fleet of high-endurance vessels in the Eastern Area during fiscal years 1961-63. The Coast Guard did not consider actual operational data in developing its replacement plans.

Our analysis indicated that, on the basis of Coast Guard criteria relating to vessel capabilities and operating time, the work performed during fiscal years 1961-63 by the high-endurance vessels assigned to the Eastern Area could be effectively performed by 17 high-endurance vessels and 4 new medium-endurance vessels. This reduction in requirements could be accomplished if the Coast Guard increased the utilization of high-endurance vessels to more nearly approximate its maximum annual usage standard of 180 days and diverted those duties which do not require vessels with high-endurance capabilities to the new medium-endurance vessels.

The Commandant of the Coast Guard, in commenting on our finding, stated that the Coast Guard believed that its vessel replacement plan represented an acceptable balance between economic considerations and the operating requirements. In view of the substantial savings that can be realized, however, we are recommending that the Commandant of the Coast Guard reexamine the planned replacement program for the high-endurance vessels in the Eastern Area and consider reducing proposed acquisitions so that they conform more closely to needs, as indicated by actual vessel utilization data and current operating standards.

We believe that the Coast Guard should reconsider the need for rehabilitating and modernizing six of its high-endurance vessels at a

cost of about \$15,600,000. If the replacement requirements for high-endurance vessels in the Eastern Area were reduced and four new medium-endurance vessels were substituted for the same number of high-endurance vessels, as proposed in this report, the resultant savings would enable the Coast Guard to accelerate the replacement of high-endurance vessels and possibly eliminate the need for the rehabilitation and modernization program which was predicated upon an extended replacement schedule.

The Commandant of the Coast Guard, in commenting on this finding, indicates that the vessel rehabilitation and modernization program is worthwhile because, at the present rate of funding, the vessel replacement plan cannot be completed by 1974. We recognize that further delays in funding for vessel replacements may eventually require implementation of a vessel rehabilitation and modernization program. The current funding, however, has delayed the procurement of only two high-endurance vessels in the Coast Guard's replacement program. In view of the feasibility of reducing the planned procurement of high-endurance vessels by five, as demonstrated in this report, we believe that the delay in funding is not now an appropriate reason for initiating the vessel rehabilitation and modernization program. Accordingly, we are recommending that the Commandant of the Coast Guard reconsider the need for rehabilitating and modernizing six high-endurance vessels during fiscal years 1966-69.

We are reporting these matters to the Congress because of the significant reduction of costs which may be effected. Copies of this report are being sent to the President of the United States and to the Secretary of the Treasury.



Comptroller General
of the United States

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REPORT ON
OVERSTATED REQUIREMENTS
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INTRODUCTION

The General Accounting Office has made a review of the utilization of, and the requirements and related replacement plans for, high-endurance vessels assigned to the First, Third, Fifth, Seventh, and Eighth Districts of the Eastern Area, United States Coast Guard, Treasury Department. Our review, which covered high-endurance vessel operations during fiscal years 1961-63, was made pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67). The scope of our review is described on page 35 of this report. A list of the principal officials responsible for activities discussed in this report appears as appendix I.

BACKGROUND INFORMATION

GENERAL

As of July 1, 1964, the United States Coast Guard had 36 high-endurance vessels (also referred to as major cutters). These vessels are used primarily for carrying out the Coast Guard's responsibilities for ocean-station duty, search and rescue (SAR), and training of Coast Guard reservists.

The Coast Guard is authorized, under 14 U.S.C. 2 and 14 U.S.C. 88, to perform any and all actions necessary to rescue and aid persons and protect and save property on the high seas and waters

subject to the jurisdiction of the United States. Such aid may be rendered at any time or any place at which Coast Guard facilities and personnel are available and can be utilized.

The act of June 22, 1948, as amended (14 U.S.C. 90), authorized the Coast Guard to operate and maintain floating ocean stations for the purpose of providing search and rescue, communication, and air navigation facilities, and meteorological services in ocean areas regularly traversed by aircraft of the United States. The Coast Guard is currently manning four ocean stations in the North Atlantic Ocean--designated as Bravo, Charlie, Delta, and Echo--and two stations in the Pacific Ocean--designated as Victor and November--pursuant to the North Atlantic Ocean Station Agreement of the International Civil Aviation Organization and an agreement between the United States and Canada. The ocean stations are small ocean areas, 210 miles square, which are located along major air routes over the North Atlantic and Pacific Oceans and are continuously patrolled by Coast Guard high-endurance vessels.

VESSEL REPLACEMENT PROGRAM

The Coast Guard's fleet of high-endurance vessels consists of three types: 255-foot gunboats, 311-foot seaplane tenders, and 327-foot gunboats. The average age in service of the high-endurance vessels is about 21 years. The Coast Guard is planning to replace these vessels because of increasing maintenance costs and limitations in their speed, endurance, and other capabilities. Existing machinery and equipment are considered obsolete and accommodations substandard.

In November 1959, an Ad Hoc Committee on Coast Guard Floating Unit Requirements, consisting of seven senior Coast Guard officers (see appendix II), submitted to the Commandant of the Coast Guard a report on the requirements for Coast Guard vessels (hereafter

referred to as the Vessel Report). The Vessel Report, which outlined vessel replacement plans for the period 1962-70, envisioned a program of replacement under which the Coast Guard fleet would contain no obsolete vessels by 1971. The program also called for augmenting the fleet with additional vessels and was expected to cost about \$750,000,000.

In 1962, the Vessel Report was amended by the Coast Guard and approved in principle by the Secretary of the Treasury. The Secretary stated that, although he was in accord with the implementation of the first phase (covering fiscal years 1962-64), he was concerned about the time schedule proposed for accomplishing the entire program, and he requested that the Coast Guard consider extending the program somewhat beyond 1970.

The Coast Guard considered alternative schedules for completing the replacement program, and in December 1962 the Commandant recommended a plan which extended the program to 1974. The new plan provided for average annual funding of about \$100,000,000 during the period 1965-74, with funding of about \$128,000,000 deferred beyond 1974, and was approved by the Secretary of the Treasury. The following tabulation shows the amounts appropriated for acquisition, construction, and improvement purposes during fiscal years 1962-64 which were applied to the vessel replacement program and the amounts planned to be used during fiscal years 1965-74 for procurement of high-endurance vessels and all types of vessels.

Phase	Fiscal year	High-endurance vessels to be procured		Amount for procuring all types of vessels
		Number	Cost	
————(000 omitted)————				
I	1962	0	\$ -	\$ 14,300
	1963	0	-	9,430
	1964	1	14,000	26,000
II	1965	3	42,000	87,690
	1966	3	42,000	93,100
	1967	3	42,000	94,700
III	1968	4	56,000	105,400
	1969	4	56,000	102,150
	1970	4	56,000	104,150
IV	1971	6	84,000	103,400
	1972	3	42,000	104,400
	1973	4	56,000	103,400
	1974	<u>3</u>	<u>42,000</u>	<u>103,350</u>
Total		<u>38</u>	<u>\$532,000</u>	<u>\$1,051,470</u>

The Secretary's decision to delay the completion of the replacement program until 1974 necessitated a collateral decision to implement a vessel rehabilitation and modernization (VRAM) program for the Coast Guard's six 327-foot cutters. The VRAM program is intended to extend the useful life of these vessels for about 10 years. Since the actual replacement of the vessels is expected to lag as much as 3 years behind the date that funds are appropriated, the high-endurance vessel replacement program is not expected to be completed until late in the 1970's and the Coast Guard believes that the VRAM program is necessary to maintain a satisfactory operating level of high-endurance vessels. The Coast Guard plans to proceed with the VRAM program in fiscal year 1966. The VRAM program is scheduled to be completed in fiscal year 1969 at an estimated cost of \$15,600,000 or \$2,600,000 for each of the six vessels.

During hearings on the 1964 appropriation bill for the Treasury and Post Office Departments and the Executive Office, the Commandant of the Coast Guard presented the long-range financial plan to the Subcommittee of the House Committee on Appropriations. In House Report 179, Eighty-eighth Congress, the House Committee on Appropriations stated that it felt that the replacement program was slightly too ambitious and that the Coast Guard should stretch the program out over at least 5 additional years so that the annual cost would not be prohibitive.

The Commandant advised the Assistant Secretary of the Treasury, in June 1963, that an evaluation of a further extension of the program to 1979 had revealed no justification for such a move. Accordingly, the Commandant recommended that every effort be made to bring to the attention of the Congress the deplorable state of the vessel plant and the need to proceed with replacement and augmentation plans.

The Vessel Report specified the characteristics which the high- and medium-endurance vessels are required to have in order to accomplish the tasks that they are intended to perform. A new 378-foot high-endurance vessel and a new 210-foot medium-endurance vessel have been designed by the Coast Guard to meet these requirements. A summary of the costs and the design characteristics of these vessels is shown as appendix III to this report.

Fiscal year 1964 appropriations for the Coast Guard included \$14,000,000 for the procurement of one high-endurance vessel. The contract for the construction of the vessel was awarded January 16, 1964, in the amount of \$10,151,000. The contract for the vessel's propulsion plant was let on January 9, 1964, in the amount of \$2,942,641. Fiscal year 1965 appropriations for the Coast Guard included approximately \$14,000,000 for the procurement of a second high-endurance vessel.

VESSEL COMPLEMENT OF THE EASTERN AREA

As of July 1, 1964, 23 of the high-endurance vessels were assigned to five districts (First, Third, Fifth, Seventh, and Eighth) of the Eastern Area, United States Coast Guard. An additional high-endurance vessel was assigned to the Cape May Receiving Center and used exclusively for the afloat training of Coast Guard reservists.

Our comments in this report relate to the utilization of the 23 vessels assigned for district and area operations and to the plans for their replacement. A list of the high-endurance vessels assigned to the Eastern Area districts is shown as appendix IV.

It is the Coast Guard's policy to utilize all available high-endurance vessels for ocean-station duty but to assign them at regular intervals to other duty. Thus, the available high-endurance vessels form a pool of ships for both SAR and ocean-station operations. During fiscal years 1961-63, 21 vessels assigned to the First, Third, and Fifth Districts participated in the ocean-station program in the North Atlantic Ocean and 2 vessels stationed at Miami Beach, Florida, and Mobile, Alabama (Seventh and Eighth Districts), were assigned to district operations.

The Vessel Report justified the 23 high-endurance vessels in the Eastern Area on the need for 16 vessels for the Atlantic ocean-station program (4 for each station), 6 vessels for long-range assistance duties, and 1 vessel for the reserve training program. The following tabulation shows the deployment of high-endurance vessels in the Eastern Area as of July 1, 1964, and the deployment as proposed in the Vessel Report. As shown in the tabulation, the Vessel Report concludes that no high-endurance vessels are required in the Seventh and Eighth Districts.

<u>District</u>	Deployment as of July 1, 1964	Deployment proposed in Vessel Report			<u>Total</u>
		<u>Ocean- station program</u>	<u>Long- range assis- tance duties</u>	<u>Reserve training</u>	
First (Boston)	11	8	2	-	10
Third (New York)	7 ^a	4	2	1	7
Fifth (Portsmouth)	4	4	2	-	6
Seventh (Miami)	1	-	-	-	-
Eighth (New Orleans)	<u>1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total	<u>24</u>	<u>16</u>	<u>6</u>	<u>1</u>	<u>23</u>

^aIncludes one vessel (UNIMAK, 311-foot) assigned to the Cape May Receiving Center and used for the training of Coast Guard reservists.

The Coast Guard fleet also includes medium-endurance vessels, patrol craft, buoy tenders, harbor tugs, and miscellaneous vessels of other types. This report does not concern itself with the utilization and replacement of vessels of these types.

THE ATLANTIC MERCHANT VESSEL REPORT SYSTEM

In addition to providing direct SAR assistance with Coast Guard vessels, the Coast Guard operates the Atlantic Merchant Vessel Report (AMVER) system, which is a maritime mutual assistance program that provides important aids to the development and coordination of SAR efforts in the offshore areas of the North Atlantic Ocean, the Caribbean Sea, and the Gulf of Mexico. Appropriate sailing and position data, voluntarily transmitted by merchant vessels of many nations to the AMVER Center at the Coast Guard's Third District, are entered into an electronic computer which generates and maintains dead-reckoning positions for the vessels while they are within the plotting area. The information is made available

upon request to recognized SAR agencies of any nation, or persons in distress, for use during an emergency.

Since there are about 800 merchant vessels sailing these waters and on plot at the AMVER Center at any one time, the AMVER system provides a highly significant contribution during maritime emergencies requiring SAR assistance. The AMVER system makes it possible for the Coast Guard SAR controller to know almost instantly whether any merchant vessels are near the scene of distress and, if so, their position and SAR capabilities. The SAR controller can then ask those vessels in a position to assist to do so. We were informed by officials at the AMVER Center, New York, N.Y., that, although participation in the AMVER system is voluntary, participating vessels have assisted in about 99 percent of the cases in which their assistance was requested.

FINDINGS AND RECOMMENDATIONS

REQUIREMENTS FOR HIGH-ENDURANCE VESSELS CAN BE REDUCED WITH SIGNIFICANT SAVINGS IN REPLACEMENT AND OPERATING COSTS

Our review of the United States Coast Guard's plans for replacing 22 high-endurance vessels assigned to the Eastern Area has shown that the stated requirements can be reduced, thereby saving about \$55,000,000 in construction costs and about \$3,800,000 annually in vessel operating costs. The belief that the requirements for high-endurance vessels are overstated is based on our review of operating experience of the present fleet of high-endurance vessels in the Eastern Area during fiscal years 1961-63. The Coast Guard did not consider actual operational data in developing its replacement plans.

The actual utilization during fiscal years 1961-63 of high-endurance vessels in the Eastern Area was substantially below the standard of 180 days established by the Coast Guard as a maximum for the annual operation of the vessels. Also, most of the search and rescue missions and many other missions which were performed by the high-endurance vessels were of a type that, according to Coast Guard criteria relating to vessel capabilities, can be carried out as effectively by the smaller and less costly new medium-endurance vessels. If the Coast Guard increased the utilization of high-endurance vessels to more nearly approximate the maximum annual usage standard and diverted most of the SAR assistance missions and many other missions to the new medium-endurance vessels, the duties being performed with the present fleet of high-endurance vessels could be performed with 17 high-endurance vessels and 4 new medium-endurance vessels.

The Coast Guard has estimated the cost of constructing the new high-endurance (378-foot) vessel at \$14,000,000, as compared with the \$3,750,000 construction cost for the new medium-endurance (210-foot) vessel. Therefore, by substituting four new medium-endurance vessels for the same number of high-endurance vessels to perform those missions which require only the capabilities of medium-endurance vessels, the cost of the replacement program could be reduced by \$41,000,000. In addition, by increasing the utilization of high-endurance vessels to closely approximate the maximum annual usage standard of 180 days, the replacement requirement for one high-endurance vessel could be eliminated, thus further reducing the cost of the vessel program by \$14,000,000.

Operating costs are estimated by the Coast Guard at \$1,191,000 annually for each of the new high-endurance vessels and at \$519,000 for each of the new medium-endurance vessels. By replacing four high-endurance vessels with new medium-endurance vessels and by eliminating the requirement for one high-endurance vessel, the related operating costs would also be reduced by about \$3,800,000 annually.

Coast Guard did not use actual operational data in determining requirements for high-endurance vessels

The Coast Guard did not use actual operational data in determining its requirements for high-endurance vessels as set forth in the Vessel Report. Although the Coast Guard has provided ocean-station patrols and SAR assistance for many years and has maintained actual operational and SAR data during this time, it did not use these data in determining the number and type of vessels needed to replace the current fleet of high-endurance vessels.

The Coast Guard predicated its estimate of the number of ocean-station vessels required on the assumption that each vessel

would spend one third of its time at sea. Therefore, if it were possible for one ship to sail on the same day that another returned to port, three ships would be needed for each station occupied. The Vessel Report stated that this was not possible, since vessels on ocean-station patrol relieve each other at sea, on station, and the cruising time to and from the station adds at least 1 week to the 3 weeks spent on ocean station. In other words, vessel requirements are one third higher than the theoretical three-ships-per-station figure. The report concludes therefore that, for each ocean station occupied, a minimum of 4 vessels must be available--a total of 16 vessels for the four ocean stations in the North Atlantic Ocean area.

In determining the SAR needs, the Coast Guard concluded that, on the basis of the following three factors, it is possible to establish the number of high-endurance vessels that must be assigned to each principal port area for long-range assistance:

1. A high-endurance vessel should be provided to handle distress incidents occurring 500 to 1,000 miles from port.
2. The vessel should be at the distress scene within 3 days from the time the first call for assistance goes out.
3. To insure an adequate reserve for handling any other case that might arise at the same time, a second vessel should be ready to proceed within not more than 12 hours after a new distress incident arises requiring the use of the vessel.

Within the combined limits of these factors--distance of 500 to 1,000 miles, time of 3 days, and readiness of a second vessel in 12 hours--the Vessel Report concluded that in computing requirements for high-endurance vessels, it is correct to use a planning factor of 4 to 1 in each of the three principal operating

localities under consideration, that is, the New England, New York, and Hampton Roads areas. Therefore, in order to satisfy basic North Atlantic Ocean SAR assistance requirements, four high-endurance vessels must be assigned to each district within each of these three principal port areas--the First, Third, and Fifth Coast Guard Districts.

The report further stated that, to provide rounded experience for each vessel and equitable distribution of duties between vessels, it is highly desirable to utilize all high-endurance vessels in the ocean-station program, assigning them at regular intervals to other duties. Thus, the available high-endurance vessels form a pool of ships for both SAR assistance and ocean-station purposes. This arrangement, according to the report, provides an important advantage. Ocean-station vessels are actually available for assistance purposes while at sea, and they thus reduce the requirements for offshore assistance protection which must be provided from continental bases.

While this mutual support is not precisely measurable, the Coast Guard estimated that the high-endurance vessel requirement for SAR assistance purposes in each of the three North Atlantic Ocean districts may be lowered from four ships to two by virtue of the assistance support available from vessels already in position at ocean stations. Therefore, the Coast Guard finally concluded that 22 high-endurance vessels were required in the North Atlantic Ocean area--2 vessels in each of the First, Third, and Fifth Districts for assistance purposes and 4 vessels for each of the four ocean stations.

Actual operational data indicate that requirements for high-endurance vessels can be reduced

Our review disclosed that the actual utilization of the high-endurance vessels in the Eastern Area during fiscal years 1961-63 was substantially below the maximum annual usage standard of 180 days established by the Coast Guard and that the high-endurance vessels performed many functions of a type that, according to Coast Guard criteria for vessel capabilities, can be accomplished by the new medium-endurance vessels. The following table summarizes our analysis of the utilization of the 23 high-endurance vessels in the Eastern Area; the annual averages are based on operations during fiscal years 1961-63.

	<u>Average annual use</u>	<u>Average annual use per vessel</u>
	(vessel-days)	
Operations requiring vessels with high-endurance capabilities:		
Ocean-station patrols, including oceanographic research	2,183	
Cadet and reserve training cruises	332	
Miscellaneous duties	119	
SAR related to above activities	43	
SAR, from continental bases and Bermuda	<u>5</u>	117
Operations within the capabilities of the new medium-endurance vessels:		
SAR, from continental bases and Bermuda	369	
SAR, while on Bay of Campeche Patrol	14	
General duty and regatta patrols	154	
Public relations and miscellaneous duties	<u>40</u>	25
Operations relating to the support and servicing of the vessel and training of the crew	<u>467</u>	20
Total operational time	3,726	162
Standby time	1,978	86
Maintenance time	<u>2,691</u>	<u>117</u>
Total time accounted for	<u>8,395</u>	<u>365</u>

As shown above, the 23 high-endurance vessels assigned to the Eastern Area were operated an average of 162 days annually for all types of missions during the period covered by our review, as compared with the maximum annual usage standard of 180 days. The Commander of the Eastern Area and Third Coast Guard District

generally agreed that the utilization of high-endurance vessels of the Eastern Area districts for fiscal years 1961-63 was substantially below the Coast Guard's maximum usage standard. Maintenance required 117 of the remaining 203 days of the year, and 86 days represented standby time. A graphic presentation of the average annual operational, maintenance, and standby days is shown as appendix V.

The 162-day average annual operational time for each high-endurance vessel in the Eastern Area included only 117 days for missions such as ocean-station patrols, cadet and reserve training cruises, and those SAR activities which actually required high-endurance vessel capabilities. About 25 days were spent for work, such as search and rescue, general duty patrols, and regatta patrols, which did not generally require high-endurance vessel capabilities. Our analysis indicates that, on the basis of Coast Guard criteria, the latter operations were within the capabilities of the new medium-endurance vessel. (See pp. 15 to 22.) The remaining 20 days were spent for support and servicing of the vessel and training of its crew.

Our application of the Coast Guard criteria for new high-endurance and medium-endurance vessel capabilities and operating time to the actual operating experience of the present fleet of 23 high-endurance vessels indicates that the work now being performed by these high-endurance vessels could be accomplished by 17 new high-endurance vessels and 4 new medium-endurance vessels. We have estimated that each high-endurance vessel could be available 160 days annually for actually accomplishing the required workload. This estimated availability time is based on the maximum annual usage standard of 180 days set by the Coast Guard less the 20 days required for support, servicing, and training. Of the

total operational time, 2,682 days related to operations requiring high-endurance capabilities. Thus, by dividing 2,682 days by 160 days, we estimate that 17 new high-endurance vessels can perform the duties requiring high-endurance vessel capabilities. In addition, by dividing 577 days--the number of days related to operations within the capabilities of the new medium-endurance vessels --by 160 days, we estimate that four new medium-endurance vessels could perform the operations within the capabilities of this type of vessel. (See p. 13.)

Most search and rescue missions can be performed by new medium-endurance vessels

Although the Vessel Report concluded that long-range, offshore assistance from continental bases required six high-endurance vessels, in addition to the ocean-station requirements, Coast Guard operational data show that comparatively little SAR work of any type, with only a negligible amount of long-range SAR work, was performed by the high-endurance vessels during the period covered by our review. The report contemplates that the new medium-endurance vessels can perform missions within an intermediate zone of 1 to 500 miles and that the speed characteristics of these vessels will generally enable the Coast Guard to render assistance within 24 hours. On the basis of such range and speed capabilities, virtually all the missions reviewed are of a type which can be performed by the new medium-endurance vessels.

Our review of Coast Guard records disclosed that, when distress incidents occur offshore, the Coast Guard may provide assistance by (1) sending Coast Guard vessels and/or aircraft from a continental base or from a district patrol, (2) diverting Coast Guard vessels and/or aircraft on other assignments, or (3) alerting merchant vessels participating in the AMVER system in the same

ocean area (see p. 7) or by any combination of the three. Coast Guard aircraft used primarily for search and rescue on and over water include land planes, amphibious planes, and helicopters.

Because of the time element involved when distress incidents arise more than 500 miles offshore, it is usually more practical to request assistance from vessels already at sea than to send a vessel from a continental base. Generally, when the Coast Guard provides direct assistance for distress incidents occurring this far from shore, Coast Guard vessels already at sea on other missions are diverted to the distress scene to provide assistance.

Capabilities of the new medium-endurance vessels--The design characteristics of the new high-endurance and medium-endurance vessels show that the facilities to be installed for SAR purposes are virtually identical for both types of vessel. These facilities include rubber rafts, salvage pumps, surface search radar, four high-altitude parachute flare projectors (two for the medium-endurance vessel), echo depth sounder, high-speed wire whip boat hoisters, two gas turbine-powered motor rescue boats, and a helicopter deck. The design characteristics provide also that both types of vessel will have good towing capability.

The basic difference between these two vessels, as far as SAR assistance is concerned, appears to be in the areas of speed (how rapidly a vessel can get to a distress scene) and endurance (maximum cruising range on the high seas in an extended SAR effort). The Vessel Report states that the sustained speeds for the new vessels should be 25 knots for the high-endurance vessels and 18 knots for the medium-endurance vessels. While the endurance of each vessel at maximum speeds is the same--2,000 miles--the endurance at cruising speed is 9,600 miles for the new high-endurance vessel and

5,000 miles for the new medium-endurance vessel. (See appendix III.)

The speed characteristics of the new medium-endurance vessels compare favorably with the speed characteristics of the high-endurance vessels currently in the Coast Guard fleet. The new medium-endurance vessels are being designed to travel as fast as, and in some cases faster than, the current high-endurance vessels.

Capabilities required for SAR missions--We reviewed the 334 SAR assistance missions accomplished during fiscal years 1961-63 by high-endurance vessels dispatched from continental bases and from Bermuda and those on patrol in the Bay of Campeche (part of the Gulf of Mexico) to determine whether such assistance was within the range capabilities of the new medium-endurance vessels. Those SAR missions performed by high-endurance vessels while the vessels were on ocean-station duty, reserve cruises, cadet cruises, or refresher training cruises are not included in our analysis because these functions require the capabilities of a high-endurance vessel and the SAR missions were performed while the vessel was underway for these functions.

Our analysis disclosed that, for all but 1 of the 334 SAR assistance missions, the actual underway miles (travel to and from the distress area and search distances involved) were within the 2,000-mile maximum speed range of the new medium-endurance vessel. There were no missions for which the actual underway miles exceeded the 5,000-mile cruising range of the new medium-endurance vessels.

During our review of the 334 SAR missions, we determined also whether the distress incidents occurred within the 1-to-500-mile zone to be covered by the new medium-endurance vessels. The Coast Guard Vessel Report states that the main function of the high-endurance vessels is to assist other vessels and aircraft in an

outer sea belt extending from 500 to 1,000 miles offshore. Our comments and tabulations pertaining to the 334 SAR missions performed during the 3 years and the approximate distances involved are presented below. These data are shown in graphic form in appendix VI.

SAR missions performed by vessels deployed from continental bases and Bermuda--High-endurance vessels were utilized an average of 369 operational days annually during the period covered by our review to carry out 199 of the 202 SAR missions performed from continental bases and Bermuda. About 330 days of this time related to the Bermuda SAR assignments. It is the practice of the Coast Guard to assign high-endurance vessels in the Eastern Area to Bermuda throughout the year for periods of approximately 3 weeks. Each vessel assigned to Bermuda is maintained at St. Georges and participates in any SAR incidents arising in the area during that period. The 330 days comprise the time related to the travel to and from Bermuda, the time in port at Bermuda, and the time required for actually accomplishing assistance missions from Bermuda. The following tabulation shows the distances from continental bases or Bermuda within which the distress incidents occurred.

<u>District</u>	Number of high-endurance <u>vessels</u>	Number of SAR cases and distances from port			
		<u>Total</u>	<u>0-249</u> <u>miles</u>	<u>250-499</u> <u>miles</u>	<u>500-850</u> <u>miles</u>
First	11	81	75	6	-
Third	6	38	25	11	2
Fifth	4	25	22	2	1
Seventh	1	46	40	6	-
Eighth	<u>1</u>	<u>12</u>	<u>11</u>	<u>1</u>	<u>-</u>
Total	<u>23</u>	<u>202</u>	<u>173</u>	<u>26</u>	<u>3</u>

The schedule shows that only three missions in this category involved distances falling within the 500-to-1000-mile criterion established for the use of high-endurance vessels. We have classified the annual average of 5 operational days required for the three missions as time for operations requiring vessels with high-endurance capabilities. (See p. 13.)

SAR missions performed by vessels while on Campeche Patrol--
The Coast Guard continuously patrols the Bay of Campeche (part of the Gulf of Mexico) to provide SAR assistance and to prevent United States shrimp-fishing boats from violating Mexican territorial waters. Although the Vessel Report states that no high-endurance vessels are required in the Seventh and Eighth Districts to meet the criteria set forth in the report for rescue coverage, both high-endurance and medium-endurance vessels from these districts were used for the Campeche Patrol during the period of our review.

Our analysis of operational data for fiscal years 1961-63 shows that 132 SAR cases were handled by the high-endurance vessels from the Seventh and Eighth Districts while on Campeche Patrol and that such cases required an average of 14 days each year. Operational time while on Campeche Patrol that was not directly related to an SAR mission is classified as general duty patrol. (See p. 21.) The following tabulation shows the distances that the vessels were required to travel from the patrol area to the distress scene.

<u>District</u>	<u>Total</u>	<u>Number of SAR cases and distances from patrol area</u>	
		<u>0-249 miles</u>	<u>250-405 miles</u>
Seventh	13	12	1
Eighth	<u>119</u>	<u>117</u>	<u>2</u>
Total	<u>132</u>	<u>129</u>	<u>3</u>

It should be noted that, upon receiving a call for assistance, the vessels were not required to travel from their home ports, but rather from the patrol area which is about 600 to 700 miles from the home ports. Although the distance from the home ports exceeded 500 miles in most cases, no cases required travel of more than 405 miles from the patrol area. It should be further noted that the distances from the home ports were still well within the 5000-mile cruising range of the new medium-endurance vessels.

- - - -

In terms of SAR demands and the SAR coverage that the Coast Guard specifies for the new medium-endurance vessels, it appears that virtually all SAR incidents in the Eastern Area during the period covered by our review could have been handled by the new medium-endurance vessels.

The use of 17 high-endurance vessels primarily for ocean-station duties, reserve cruises, cadet cruises, and operational training for the vessels' personnel would still leave substantial time for each of those 17 vessels to be available for SAR emergency situations which require a high-endurance vessel. By taking into account the annual average of approximately 117 days spent in a maintenance status during fiscal years 1961-63 and the 180-day maximum annual usage standard for actual operations, we found that each high-endurance vessel would be in a standby status for approximately 68 days a year. When the present fleet is replaced with new vessels, the time required for maintenance should decrease considerably, thereby allowing an increase in standby and operational time. While in a standby status, the vessels would be available to provide coverage for any SAR incidents requiring the capabilities of high-endurance vessels.

The Commander and the Chief of Staff of the Eastern Area and Third Coast Guard District generally agreed with our conclusion that SAR missions out of home ports and from Bermuda could be effectively handled by the new medium-endurance vessels. They added that, in their opinion, the new medium-endurance vessel will generally be able to navigate under the same weather conditions as those under which the high-endurance vessels can travel and will be able to perform almost any kind of assistance mission that a high-endurance vessel can perform. These officials stated that the main difference between the new medium-endurance and high-endurance vessels is in the range capabilities.

Many other missions can be performed
by new medium-endurance vessels

During the 3-year period covered by our review, substantial operating time of high-endurance vessels was related to activities (other than search and rescue) of a type which also can be handled by the new medium-endurance vessels. The nature and extent of these activities are discussed below.

General duty and regatta patrols--Our review disclosed that both high-endurance and medium-endurance vessels performed various general duty and regatta patrols. General duty patrols are made primarily to provide SAR coverage in areas of heavy maritime traffic. Law enforcement duties may also be performed in conjunction with the general duty patrols. Regatta patrols are made to provide assistance to racing crews in case of emergency and to enforce local regulations. High-endurance vessels are being used as fill-ins for smaller vessels for general duty patrols in some districts, although medium-endurance vessels are used for general duty patrols in most districts. Also, Coast Guard officials informed us that the new medium-endurance vessels have the capability to perform the

regatta patrols performed by high-endurance vessels. During the 3-year period reviewed, the high-endurance vessel operations related to these patrols averaged 154 days annually, excluding the time actually related to SAR missions. (See p. 13.)

The SAR missions performed and the related operational time were categorized as (1) SAR missions from continental bases and Bermuda and (2) SAR missions while on Campeche Patrol. These missions are described on pages 18 to 20 of this report.

Public relations activities and miscellaneous duties--High-endurance vessels were used on several missions during fiscal years 1961-63 for public relations activities and miscellaneous duties. Public relations activities included participation in an azalea festival, participation in an American Legion convention, Memorial Day cruises, special cruises for visitors and prospective cadets, and participation in Armed Forces Week observances. Miscellaneous duties included surveillance of Air Force Texas Towers, aids to navigation duties, and inspection of offshore oil rigs.

Our examination of the records and our discussions with Coast Guard officials indicated that missions of this type do not require vessels with high-endurance capabilities. During the period covered by our review, the high-endurance vessel operations related to these missions averaged 40 days annually. (See p. 13.)

Coast Guard comments and our evaluation

The Commandant of the Coast Guard commented on our findings in a letter dated August 20, 1964, wherein he stated that "*** considering all factors, we feel that the 'Vessel Plan' [Report on the Requirements for Coast Guard Vessels] represents an acceptable balance between the economic considerations and the operating requirements." The Commandant's specific comments on our report, together with our evaluation, are summarized below.

1. "The first significant area developed in the draft report is actual operating data as it relates to the so-called 180-day operating 'standard' mentioned in Commandant Instruction 5441.2 of 7 November 1962.

*** The 180 days, or fifty percent (50%) operating time for our vessels, was intended to establish a point of limitation, based on personnel and mechanical endurance, at which the District Commander could resist the assignment of a given unit where such duties might be helpful, but not absolutely essential.

*** Planning factors in the Vessel Plan envisioned an operation at about 122 days as an optimum. However, our experience since the promulgation of the plan shows that the optimum is probably unattainable since our current average operating days are approximately 165 days per year and tending upward. In terms of personnel and mechanical endurance, we consider this average too high."

Commandant Instruction 5441.2 established the standard for annual operation of ocean-station vessels (high-endurance vessels) at a maximum of 180 days. The instruction indicates that the purpose of the maximum usage standard is to provide a mechanism for relating missions to requirements for facilities. The instruction states that a measure of what might be required for these missions would logically be based on a fixed standard of workload for existing facilities.

An official of the Office of the Chief of Naval Operations, Department of the Navy, advised us that a 50-percent time-at-sea and a 50-percent time-in-port are considered desirable by the Navy for its vessels comparable in size to the Coast Guard's high-endurance vessels. He added, however, that Navy vessels generally operate at sea more than 50 percent of the time.

Generally, the longest continuous period of time that Coast Guard high-endurance vessels spent at sea, during the time covered by our review, was approximately 5 weeks while en route to, on, and returning from ocean-station patrols. On the other hand, we were informed that Navy vessels often spend months on the high seas before putting in to a port, which may not even be their home port. Generally, Coast Guard high-endurance vessels leave from and return to their home port after each ocean-station patrol.

It should be noted that the new high-endurance vessels, as compared with the current vessels, will be considerably greater in length (378 feet vs 255, 311, and 327 feet) and will have much better accommodations for the crews. Furthermore, while many of the current high-endurance vessels are converted Navy ships, the new high-endurance vessels have been designed specifically for Coast Guard operations.

In view of the above, we believe that the maximum annual usage standard of 180 days, established by the Coast Guard, is reasonable and is proper for inclusion in the computation to determine the number of high-endurance vessels needed to accomplish the primary missions of ocean-station patrols and search and rescue on the high seas.

2. "This tendency for utilization to creep upwards is further reflected in what we know of recent and future added requirements. For example, as a result of new

legislation and international developments, we are now directed to conduct such oceanographic research as may be in the national interest. P.L. 88-308 puts teeth in the prohibition against encroachment of our territorial waters, and for some species, to the limit of the continental shelf, by foreign fishermen. In the next few years the limits of our territorial waters may well be extended. A bill (H.R. 10492) to accomplish this is now pending in Congress. Although the full implications involved are still unknown, these developments would increase areas of jurisdiction in which federal maritime laws must be enforced. Also, the Navy has suggested that time in military readiness training be increased. This expansion of demand is typical of the experience on which the 'Vessel Plan' was based. All of these added responsibilities impose greater burdens upon our HEV's [high-endurance vessels] and their personnel."

We recognize that each of these developments may result in increased Coast Guard responsibilities. We recognize also that, if and when future increases in workload affect the requirements for high-endurance vessels, it may be necessary to amend the replacement plans to take such increases into account. Information currently available, however, indicates that the developments cited above may not affect Coast Guard's requirements for high-endurance vessels.

For example, we found evidence indicating that new high-endurance vessels may not be needed for increased oceanography work. The legislative history of the act of October 5, 1961 (Public Law 87-396), which directs the Coast Guard to conduct such oceanographic research as may be in the national interest, indicates that Coast Guard high-endurance vessels would be used for the oceanographic research primarily while on ocean-station patrols and that special oceanographic equipment would be installed on existing vessels to carry out the oceanographic research. The legislative

history indicates also that icebreakers and offshore light towers would be used in oceanographic research. (See H. Rept. 403, 87th Cong.) The Coast Guard presently has one vessel, the EVERGREEN (a 180-foot seagoing buoy tender in the First District) which is designated specifically as an oceanographic vessel and is employed for special oceanographic patrols. The Coast Guard's Vessel Report provides that the replacement for the EVERGREEN will be a medium-endurance vessel modified for oceanographic research duties.

Regarding the prohibitions against encroachment of our territorial waters by foreign fishermen, contained in the act of May 20, 1964 (Public Law 88-308), we noted that the legislative history of the act indicates that the new medium-endurance vessels will be assigned the task of law enforcement in connection with fishing activities. We noted also that fiscal year 1965 appropriations provided funds for the procurement of a medium-endurance vessel to carry out surveillance and provide protection for American interests in connection with fishing activities.

With regard to the Navy's suggestion that the Coast Guard's military readiness training time be increased, we note that the Coast Guard did not state that such an increase is actually contemplated. In any event we believe that, if additional high-endurance vessels for the Coast Guard are required for increased military readiness training, the Coast Guard should justify the vessels on this basis to the Congress. The Coast Guard's Vessel Report does not provide for any vessels for military readiness training, but rather that the vessels required for peacetime operation also be equipped for operations with the Navy in time of war.

3. "Off Bermuda there may be a past history of incidents showing that an MEV would have been satisfactory, but with the traffic in this important area, the 'fire-house' philosophy must be employed and potential must be available for whatever materializes, be it a large job or small. Without air search radar, extensive communications facilities, and capability to proceed in the foulest of weather, an MEV would be without the potential for mounting the kind of large-scale search we encounter. In one recent case an HEV had to coordinate simultaneously the services of seven aircraft, one submarine, and two other surface vessels. This case could not have been undertaken with an MEV. As with the fire engines, if no incidents occur, hindsight gives the impression that the scale of potential was too great."

As noted on page 20, the use of 17 high-endurance vessels primarily for ocean-station duties, reserve cruises, cadet cruises, and operational training for the vessels' personnel would still leave substantial time for each of the 17 high-endurance vessels to be available for SAR emergency situations which require a high-endurance vessel. By taking into account the annual average of approximately 117 days spent in a maintenance status during fiscal years 1961-63 and the 180-day standard for actual operations, we found that each of the 17 high-endurance vessels would be in a standby status for approximately 68 days a year. While in a standby status, the vessels would be available to provide coverage for any SAR incidents requiring the capabilities of high-endurance vessels.

Furthermore, the Coast Guard now has available a vast potential for maritime assistance through the Atlantic Merchant Vessel Report system. (See p. 7.) It is significant to note that the Coast Guard's study of requirements for vessels did not recognize the potential benefits of the AMVER system as it relates to the requirements for vessels. Since the AMVER system makes it possible

for the Coast Guard SAR controller to know almost instantly the position and SAR capabilities of any merchant vessels near the scene of distress, we believe that the "firehouse" capability available from over 800 merchant vessels on plot at any given time has a significant effect upon the requirements for Coast Guard vessels to perform long-range SAR assistance.

In addition, a further "firehouse" capability is available from the high-endurance vessels on ocean-station patrols and en route to and from ocean stations. In fact, the specific SAR incident cited by the Commandant occurred about 270 miles northeast of Norfolk, Virginia, and was handled by a high-endurance vessel returning from an ocean-station patrol.

4. "A further consideration in evaluating ultimate HEV requirements is the fact that this class of vessel provides an excellent platform for antisubmarine warfare operation in time of war. This collateral feature, which is essential to the national defense posture, must not be overlooked in discussing either the immediate or long-term use of major Coast Guard vessels. When the 'Vessel Plan' was submitted to the Bureau of the Budget by the Treasury Department, the Director of the Bureau transmitted the report to the Secretary of Defense for comment. The following applicable paragraph is taken from his reply:

'The characteristics of the new high-endurance ships make them suitable for naval use in augmentation of the Navy's escort and patrol forces employed in antisubmarine warfare. No attempt has been made to evaluate the Coast Guard's justification of the number of these ships required in peacetime, but there is a mobilization requirement for more than the number proposed to assist the Navy in meeting its ASW requirements in time of war.'"

It should be noted that the Secretary of Defense's comments indicate that he made no evaluation of the number of these vessels

required in peacetime. We were advised by an official of the Office of the Chief of Naval Operations, Department of the Navy, that the Navy does not attempt to require the Coast Guard to have any specific number of vessels for naval use in time of war.

Furthermore, the Coast Guard's medium-endurance vessels also have a capability for antisubmarine warfare. The Coast Guard's design characteristics for the new medium-endurance vessel provide that antisubmarine warfare weapons and sonar equipment will be installed on these vessels.

Conclusion

We believe that the Coast Guard's plans for replacing 22 high-endurance vessels in the Eastern Area primarily for ocean-station patrols and search and rescue missions were based upon excessive requirements for vessel capabilities in relation to past experience. Our review of the operations of the 23 high-endurance vessels in the Eastern Area has shown that, by increasing the utilization of high-endurance vessels to more nearly approximate the Coast Guard-established maximum annual usage standard of 180 days and by diverting most SAR assistance and many other missions to the new medium-endurance vessels, the Coast Guard could effectively satisfy its primary responsibilities for the ocean-station program and for SAR assistance with only 17 high-endurance vessels and 4 new medium-endurance vessels. Furthermore, the annual employment of only 17 high-endurance vessels would still leave each vessel in an SAR standby status for about 68 days a year, thereby making such vessels available for any emergency situation requiring the use of high-endurance vessels.

Our belief that the replacement requirements for the high-endurance vessels in the Eastern Area can be reduced is based on (1) an analysis of operational time for the high-endurance vessels

in the Eastern Area for fiscal years 1961-63, (2) a comparison of the actual operational time with the maximum annual usage standard of 180 days established by the Coast Guard, (3) a review of the reports of assistance missions performed by the high-endurance vessels during fiscal years 1961-63, (4) a review of the capabilities of the new medium-endurance vessels, and (5) a review of the actual missions accomplished by the high-endurance vessels and the criteria established by the Coast Guard for determining vessel requirements.

Recommendation

We believe that the Coast Guard can effect savings of about \$55,000,000 for construction costs and about \$3,800,000 annually thereafter in operating costs by reducing planned acquisitions of high-endurance vessels from 22 to 17 and by increasing requirements for new medium-endurance vessels by 4. Accordingly, we recommend that the Commandant of the Coast Guard reexamine the planned replacement program for high-endurance vessels in the Eastern Area and consider reducing the proposed acquisitions so that they conform more closely to needs, as indicated by actual utilization data and current operating standards.

NEED FOR THE VESSEL REHABILITATION AND
MODERNIZATION PROGRAM SHOULD BE RECONSIDERED

Our review also showed that the Coast Guard should reconsider, in the light of any reduction in requirements for high-endurance vessels, the need for rehabilitating and modernizing its high-endurance vessels of the 327-foot class at an estimated cost of \$2,600,000 each. The Coast Guard has six vessels of the 327-foot class in its entire fleet, five of which are assigned to Eastern Area districts.

If the replacement requirements for high-endurance vessels in the Eastern Area were reduced and four new medium-endurance vessels were substituted for the same number of high-endurance vessels, as proposed in this report, the resultant savings would enable the Coast Guard to accelerate the replacement of high-endurance vessels and possibly eliminate the need for the rehabilitation and modernization program which was predicated upon an extended replacement schedule.

The Coast Guard decided to implement the VRAM program for some of its high-endurance vessels as a result of the Secretary of the Treasury's decision to delay completion of the 1962-70 replacement plan for these vessels until 1974. By a memorandum dated June 19, 1963, the Commandant of the Coast Guard advised the Assistant Secretary of the Treasury that the decision to delay completion of the 1962-70 replacement plan until 1974 would require the Coast Guard to continue to operate some of its overage vessels and to implement a program to extend the useful life of some of the high-endurance vessels.

The Coast Guard estimates that the actual replacement of the high-endurance vessels will lag as much as 3 years behind the date

that funds are appropriated and that the actual replacement of the vessels will not be completed until late in the 1970's. The service concluded that, even with the replacement program proceeding at the scheduled rate (see p. 4), the useful life of some of the vessels must be extended to maintain a satisfactory operating level of ocean-station vessels.

A study was made by the Coast Guard of the condition of high-endurance vessels in the 255-foot gunboat class and the 327-foot gunboat class to determine which class of vessels would lend itself most readily to a rehabilitation and modernization program. On the basis of this study, the six vessels in the 327-foot class were selected for the VRAM program.

The Coast Guard estimates that the modernization program will extend the useful life of these vessels for 10 years. It plans to carry out the VRAM program during fiscal years 1966-69 at an estimated cost of \$2,600,000 for each of the six vessels. The following schedule shows the cost of the program by segment:

<u>Segment</u>	<u>Cost</u>
Install new auxiliary machinery	\$ 650,000
Replace as necessary present wiring, piping, insulation, and ventilation/air conditioning	550,000
Rearrange compartments to support changing mission of ship and provide improved facilities	500,000
Improve living conditions (habitability)	200,000
Improve readiness	400,000
Design services	<u>300,000</u>
Total cost per vessel	<u>\$2,600,000</u>

Our review disclosed that the extension of the 1962-70 replacement plan until 1974 deferred the replacement of only four high-endurance vessels beyond the period of the original plan. Thus, if

the Coast Guard reduced its requirements for high-endurance vessels in the Eastern Area districts and substituted four medium-endurance vessels for the same number of high-endurance vessels within the period of the original replacement schedule, the effect of the Secretary's extension would be eliminated.

Coast Guard comments and our evaluation

The Commandant of the Coast Guard commented on our finding in a letter dated August 20, 1964, wherein he stated that:

"The draft report considers the Vessel Rehabilitation and Modernization (VRAM) Program and suggests substituting an MEV costing \$3.75 million for each of four existing 327' cutters eventually being scheduled for VRAM ***. ***this program [VRAM] will rehabilitate and modernize these major cutters to give effective HEV service for a number of years. This class has a sturdier hull than our other HEV's which were built during World War II, which structurally, are becoming progressively less sound. The program becomes worthwhile since it will be necessary to retire many of our World War II vessels well before the sound pre-war cutters. This then becomes a matter of modernization and extending the life of select vessels in the present fleet as slippage and amendment of the 'Vessel Plan' stretches replacement further into the future. At the present rate of funding, the vessel replacement plan cannot be completed by 1974 since budget slippage is usually not compensated for within the time frame of a long range plan. For instance, through fiscal year 1965 the plan schedules funds for four HEV's. Funds have actually been appropriated for only two HEV's."

We recognize that further delays in funding for vessel replacements may eventually require implementation of a VRAM program. As indicated by the Commandant, however, the current budget "slippage" has affected the construction of only two high-endurance vessels in the Coast Guard's replacement program. In view of the feasibility of reducing the planned procurement of high-endurance

vessels by five, as demonstrated in this report, we believe that the delay in funding is not now an appropriate reason for generating the VRAM program.

Conclusion and recommendation

We believe that the decision to proceed with the VRAM program in fiscal year 1966 should be reconsidered in view of (1) the indicated overstatement of the requirements for high-endurance vessels in Eastern Area districts, (2) the feasibility of substituting four new medium-endurance vessels for the same number of high-endurance vessels scheduled for replacement, and (3) the possibility of obtaining authority and funds to accelerate the procurement of new medium-endurance vessels.

Accordingly, we recommend that the Commandant of the Coast Guard reconsider the need for rehabilitating and modernizing the 327-foot vessels during fiscal years 1966-69.

SCOPE OF REVIEW

In our review of the utilization of, and the requirements and replacement plans for, high-endurance vessels in the Eastern Area of the United States Coast Guard, we considered (1) the extent to which the vessels were being used within established standards, (2) the extent to which certain operations could be as effectively performed by new medium-endurance vessels, (3) vessel replacement needs, and (4) the Coast Guard's plans for rehabilitating and modernizing high-endurance vessels.

We reviewed legislation, regulations, instructions, vessel characteristics and capabilities, and other data applicable to vessel utilization and replacement requirements. We reviewed the vessel-operating records and reports relating to the First, Third, Fifth, Seventh and Eighth Coast Guard Districts for the fiscal years 1961 through 1963. Cost data were obtained from the Coast Guard and used, without verification by us, to illustrate the significance of the matters discussed in our report. Our review was performed primarily at Coast Guard Headquarters in Washington, D.C., and at the Eastern Area and Third District offices, New York, N.Y.

APPENDIXES

PRINCIPAL OFFICIALS RESPONSIBLE FOR
ACTIVITIES DISCUSSED IN THIS REPORT

<u>Tenure of office</u>	
<u>From</u>	<u>To</u>

TREASURY DEPARTMENT

SECRETARY OF THE TREASURY:

Douglas Dillon	Jan. 1961	Present
Robert B. Anderson	July 1957	Jan. 1961

ASSISTANT SECRETARY OF THE TREASURY:

James A. Reed	Dec. 1961	Present
A. Gilmore Flues	Dec. 1957	Dec. 1961

UNITED STATES COAST GUARD

COMMANDANT:

Admiral E. J. Roland	June 1962	Present
Admiral A. C. Richmond	June 1954	May 1962

ASSISTANT COMMANDANT:

Vice Admiral William D. Shields	July 1964	Present
Vice Admiral D. McG. Morrison	June 1962	June 1964

CHIEF OF STAFF:

Rear Admiral Paul E. Trimble	June 1964	Present
Rear Admiral James A. Alger, Jr.	July 1962	June 1964
Rear Admiral D. McG. Morrison	June 1962	June 1962
Vice Admiral E. J. Roland (note a)	Feb. 1962	May 1962
Vice Admiral J. A. Hirshfield (note a)	June 1954	Jan. 1962

CHIEF, OFFICE OF OPERATIONS:

Rear Admiral William W. Childress	June 1964	Present
Rear Admiral William D. Shields	Oct. 1963	June 1964
Rear Admiral Richard D. Schmidtman	June 1962	Sept. 1963
Rear Admiral D. McG. Morrison	June 1961	May 1962
Rear Admiral Joseph A. Kerrins	May 1960	June 1961

^aConcurrently occupied position of Assistant Commandant.

PRINCIPAL OFFICIALS RESPONSIBLE FOR
ACTIVITIES DISCUSSED IN THIS REPORT

<u>Tenure of office</u>	
<u>From</u>	<u>To</u>

UNITED STATES COAST GUARD (continued)

EASTERN AREA COMMANDER (also Third District Commander):

Rear Admiral C. L. Harding	June 1964	Present
Rear Admiral Richard M. Ross	Apr. 1962	June 1964
Captain J. D. Craik (Acting Commander)	Jan. 1962	Apr. 1962
Rear Admiral E. J. Roland	June 1960	Jan. 1962

EASTERN AREA DEPUTY COMMANDER (also Third District Chief of Staff):

Captain Frank V. Helmer	June 1964	Present
Captain J. H. Wagline	June 1963	June 1964
Captain J. D. Craik	June 1961	June 1963
Captain C. Arrington	May 1960	June 1961

FIRST DISTRICT COMMANDER:

Rear Admiral James A. Alger, Jr.	June 1964	Present
Rear Admiral C. L. Harding	June 1960	June 1964

FIFTH DISTRICT COMMANDER:

Rear Admiral Oscar C. Rohnke	June 1964	Present
Rear Admiral Henry J. Wuensch	July 1961	June 1964
Rear Admiral P. V. Colmar	Feb. 1959	June 1961

SEVENTH DISTRICT COMMANDER:

Rear Admiral I. J. Stephens	July 1962	Present
Rear Admiral T. J. Fabik	Aug. 1961	July 1962
Captain Leonard T. Jones (Acting Commander)	May 1961	Aug. 1961
Rear Admiral G. A. Knudsen	June 1960	May 1961

EIGHTH DISTRICT COMMANDER:

Rear Admiral J. D. Craik	June 1963	Present
Rear Admiral C. B. Olsen	Aug. 1958	June 1963

MEMBERS OF THE AD HOC COMMITTEE ON
COAST GUARD FLOATING UNIT REQUIREMENTS

UNITED STATES COAST GUARD OFFICERS

Captain Walter C. Capron

Captain Verne C. Gibson

Captain Donald McG. Morrison

Captain George D. Synon

Captain Oscar C. B. Wev

Commander Cornelius G. Houtsma

Commander John B. Speaker, Jr.

Note: Members' ranks are as of November 20, 1959, the date on which all members approved the Vessel Report.

COSTS AND CHARACTERISTICS
OF NEW HIGH- AND MEDIUM-ENDURANCE VESSELS

	<u>High-endurance vessel</u>	<u>Medium-endurance vessel</u>
CONSTRUCTION COST (estimated)	\$14,000,000	\$3,750,000
ANNUAL OPERATING COST (estimated)	\$ 1,191,160	\$ 519,000
GENERAL DESCRIPTION:		
Length (waterline)	350 feet	200 feet
Length (overall)	378 feet	210 feet
Beam	42 feet	34 feet
Superstructure, hull	Aluminum with all welded steel hull	All welded steel hull with aluminum pilothouse
Compartmentation	Two-compartment floodable length	Two-compartment floodable length
Endurance:		
At maximum speed	2,000 miles	2,000 miles
At cruise speed	9,600 miles	5,000 miles
PERSONNEL:		
Officers	15	7
Chief petty officers	14	5
Enlisted men	130	53
Oceanographic and aerology personnel	6	-

Note: The above information was obtained from Coast Guard records.

HIGH-ENDURANCE VESSELS ASSIGNED TO
EASTERN AREA DISTRICTS, UNITED STATES COAST GUARD

JULY 1, 1964

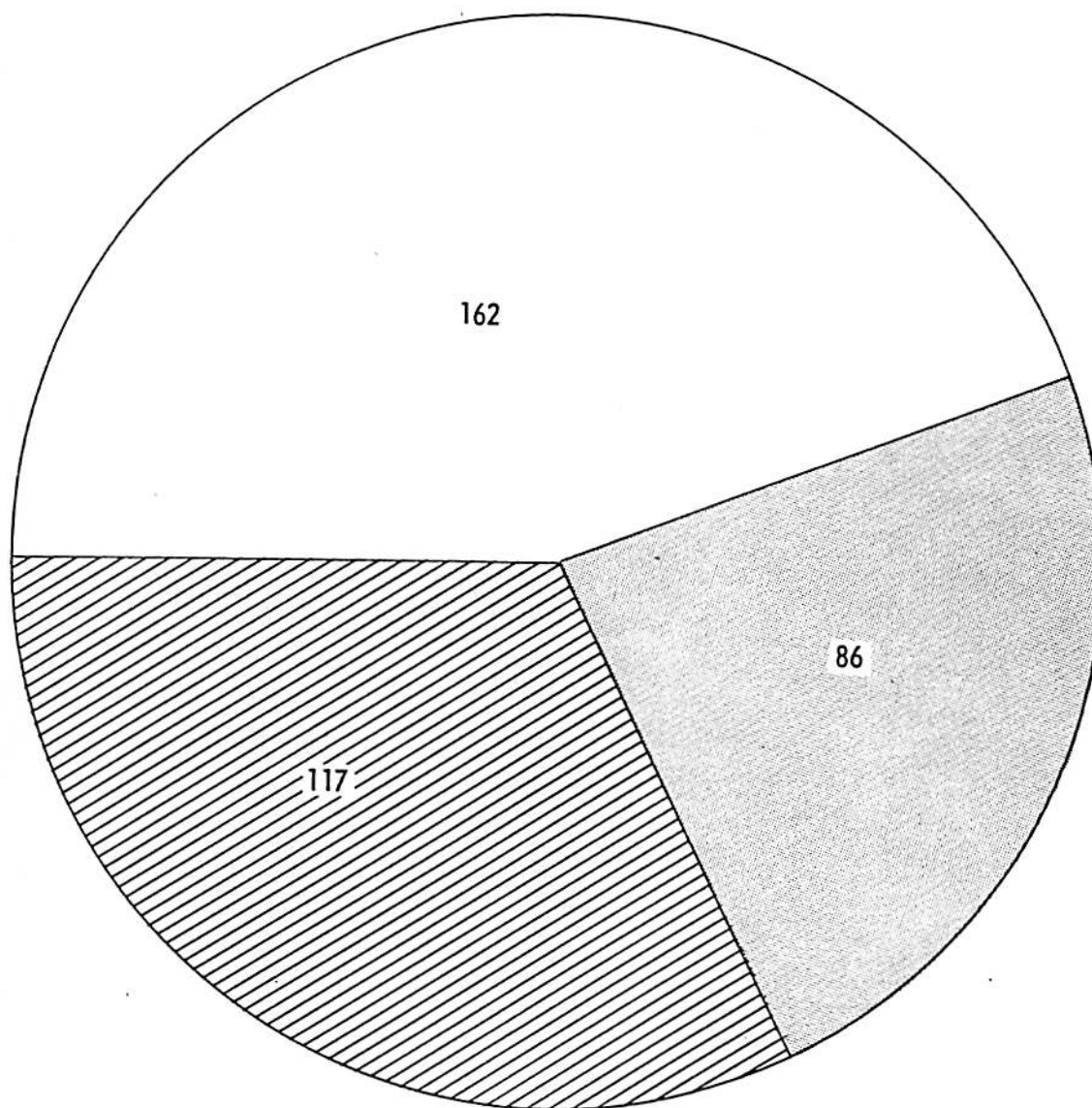
<u>Name of vessel</u>	<u>Type</u>	<u>Size (in feet)</u>	<u>Year built</u>
First District--			
Boston, Mass.:			
ESCANABA	WPG, gunboat	255	1946
BARATARIA	WAVP, seaplane tender	311	1943
COOK INLET	WAVP, seaplane tender	311	1944
COOS BAY	WAVP, seaplane tender	311	1942
CASCO	WAVP, seaplane tender	311	1941
CASTLE ROCK	WAVP, seaplane tender	311	1944
HUMBOLDT	WAVP, seaplane tender	311	1941
McCULLOCH	WAVP, seaplane tender	311	1943
YAKUTAT	WAVP, seaplane tender	311	1942
BIBB	WPG, gunboat	327	1937
DUANE	WPG, gunboat	327	1936
Third District--			
New York, N.Y.:			
OWASCO	WPG, gunboat	255	1946
HALF MOON	WAVP, seaplane tender	311	1942
MACKINAC	WAVP, seaplane tender	311	1941
ROCKAWAY	WAVP, seaplane tender	311	1942
CAMPBELL	WPG, gunboat	327	1936
SPENCER	WPG, gunboat	327	1936
Fifth District--			
Portsmouth, Va.:			
MENDOTA	WPG, gunboat	255	1946
ABSECON	WAVP, seaplane tender	311	1942
CHINCOTEAGUE	WAVP, seaplane tender	311	1942
INGHAM	WPG, gunboat	327	1936
Seventh District--			
Miami, Fla.:			
ANDROSCOGGIN	WPG, gunboat	255	1946

HIGH-ENDURANCE VESSELS ASSIGNED TO
EASTERN AREA DISTRICTS, UNITED STATES COAST GUARD




JANUARY 1, 1964 (continued)

<u>Name of vessel</u>	<u>Type</u>	<u>Size</u> <u>(in feet)</u>	<u>Year</u> <u>built</u>
Eighth District-- New Orleans, La.: SEBAGO	WPG, gunboat	255	1945

AVERAGE ANNUAL OPERATING, MAINTENANCE, AND STANDBY DAYS
FOR THE 23 HIGH-ENDURANCE VESSELS
ASSIGNED TO EASTERN AREA
FISCAL YEARS 1961-63

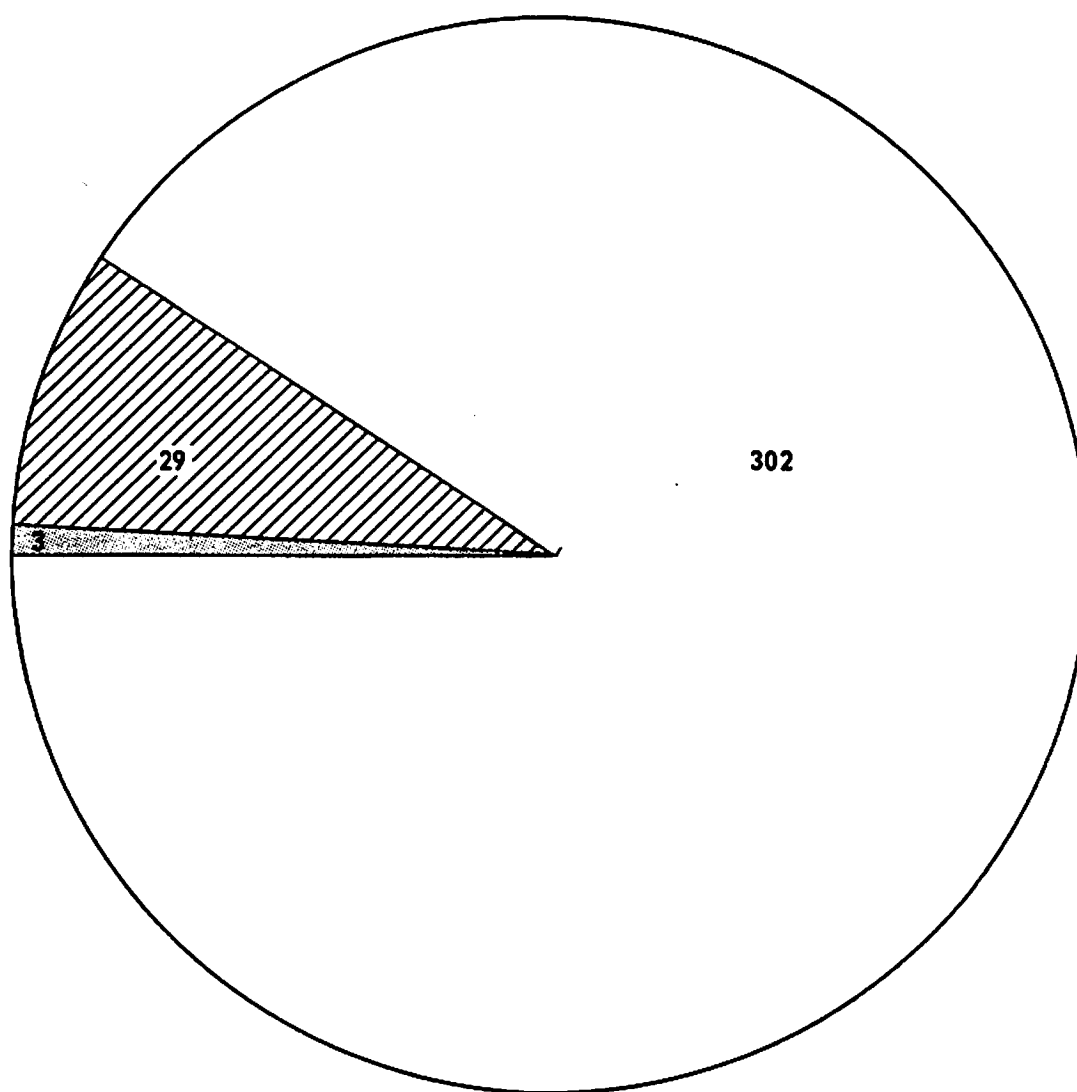


LEGEND:




Operating days	162	
Maintenance days	117	
Standby days	86	

Total 365

DISTANCES TRAVELED TO DISTRESS INCIDENTS
BY THE 23 HIGH-ENDURANCE VESSELS ASSIGNED TO EASTERN AREA
FOR 334 SEARCH AND RESCUE MISSIONS PERFORMED FROM
CONTINENTAL BASES, BERMUDA, AND THE CAMPECHE PATROL AREA
FISCAL YEARS 1961-63



LEGEND:

<u>Miles</u>	<u>Missions</u>	
0-249	302	
250-499	29	
500-850	3	
Total	<u>334</u>	