

COAST GUARD SURVEILLANCE PROGRAM

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(The opinions expressed in this paper are the personal opinions of the author and do not necessarily reflect the official position of the U.S. Coast Guard or the Government of the United States.)

ABSTRACT

This paper will familiarize the reader with the functions of selected types of Coast Guard-employed surveillance. The objective is to give the reader a clearer understanding of the Coast Guard's surveillance program and Coast Guard intentions in terms of future surveillance requirements.

INTRODUCTION

Many of the Coast Guard's varied missions increasingly require the use of surveillance. For the mariner, this means a higher degree of safety on U.S. waterways; for the commercial fisherman, protection of his source of income; for the maritime criminal, fear of detection and arrest; for the nation, a cleaner environment; and for the recreational boater, increased probability of rescue when in distress. The Coast Guard has developed several surveillance techniques to aid the mariner, protect the fisherman and deter the criminal, preserve the environment, and assist the recreational boater. Radar and radio, infra-red video display and low-light level television, sea and air patrol, are but just a few.

Specifically discussed in this essay are the functions of these and other types of surveillances and surveillance techniques used or being considered seriously for use by the Coast Guard in its vessel management, law enforcement, pollution prevention, and search-and-rescue programs. Additionally, the ramifications of a policy of maritime

surveillance are discussed, in terms of effect on both the domestic and international communities, and the impact on the Coast Guard as the predominant Federal maritime police force. Finally, the future of the Coast Guard's surveillance program is examined.

Types of Coast Guard Surveillance

In its overall surveillance effort, the Coast Guard has several surveillance functions designed to accomplish a variety of objectives. Four functions where surveillance is most actively employed by the Coast Guard, and where the general public would have the greatest opportunity to encounter them, are explained below.

For the purpose of this essay, "surveillance" is defined, in terms of maritime operations, as that function the objective of which is to detect, locate, identify, observe, or monitor.

Vessel Traffic Management

Perhaps in no other area of Coast Guard operations is there such a concentration of different surveillance devices used for a single objective--vessel traffic management. As the size and number of vessels transiting U.S. ports has steadily increased in the past decade, so too has the need for a shoreside facility to collect, interpret, and disseminate necessary information to the mariner. In pursuit of its traffic management objectives--port and vessel safety--the Coast Guard has developed the Vessel Traffic Service (VTS). A VTS is composed of a shoreside vessel traffic center and a combination of one or more of the following: Radar, low-light level television, vessel-tracking computers and visual observation. The vessel traffic center is manned by Coast Guard personnel who monitor vessel movements within the VTS area and disseminate appropriate information to the mariner as necessary. The key to a successful VTS however is the use of a Vessel Movement Reporting System (VMRS). As vessels travel through a VTS, they report at certain pre-designated points their

position by radio to the vessel traffic center. The information is vital to the vessel traffic center, for it provides positive identification of the vessel and movement information in areas lacking surveillance, and verifies what has been observed on the radar scope and television screen. These reporting points also offer both the vessel and the traffic center an opportunity to request and/or forward pertinent information.

One way to provide easier identification of vessels while they operate within a VTS is through the use of another form of surveillance--the Loran-C position transmitting system. Basically this system, which is under consideration for VTS use by the Coast Guard, would use a Loran-C signal that, when received by a vessel would be automatically processed and transmitted back to the vessel traffic center, providing identification and position data.

There are currently five coastal and three inland VTS in operation. An additional VTS may become operational in 1982 in New York harbor. In 1983, the Coast Guard will begin a systematic port-by-port analysis which will seek to identify those areas in U.S. waters that require a VTS to enhance navigation safety.

Enforcement of Laws and Treaties

In order to promote orderly, safe and environmentally sound operations within the marine community, the Coast Guard has developed a law enforcement program with the goals of maintaining order, enforcing Federal laws and regulations, protecting the environment and conserving resources.

Systematic boarding of vessels, both recreational and commercial, is a vital surveillance part of the overall law enforcement program. In terms of recreational vessels, boardings are conducted almost entirely for marine safety purposes--to check for proper safety equipment, proper construction, proper use of boat and equipment. Commercial vessels are normally boarded for enforcement of conservation laws, international treaties, and marine safety laws.

Another segment of the boarding program is for enforcement of customs laws. Although the Coast Guard most frequently makes headlines when seizing a vessel laden with smuggled marijuana, the entire spectrum of customs laws is actively enforced. In the area of customs law enforcement, the Coast Guard conducts surveillance operations in close cooperation with the Drug Enforcement Administration and the U.S. Customs Service.

Although seizure of a vessel and/or cargo as a result of a boarding is rare, this

boarding program does provide the Coast Guard an opportunity to conduct surveillance operations over all vessels in U.S. navigable waters.

A very large and extremely important part of the overall law enforcement program is that part dealing with the enforcement of the Fishery Conservation and Management Act of 1976. This law provided the United States with exclusive fishery management authority over most fish within the 200-mile "fishery conservation zone," plus Continental Shelf fishing resources and anadromous species beyond that zone. Coast Guard surveillance functions under the FCMA involves close monitoring of fishing vessels to gather detailed information required to assess the vessel's compliance with specific fishery conservation and management measures. Surveillance includes close inspection of fishing vessels by Coast Guard aircraft and cutters, and boarding of fishing vessels whenever practicable.

Pollution Surveillance

The Coast Guard is tasked with enforcing, either solely or jointly with other Federal agencies, most of the Federal laws designed to limit or prohibit water pollution. These laws include, but are not limited to, the Federal Water Pollution Control Act, the Oil Pollution Act of 1961, the Refuse Act, and the Ports and Waterways Safety Act.

A pollution surveillance system has been designed to help enforce these laws. The four basic objectives of this surveillance system are to: (1) detect discharges of oil and hazardous substances; (2) assess the dimensions and quantify the amount discharged for both enforcement and response purposes; (3) predict the movement of the discharge to facilitate cleanup efforts; and (4) identify the source of the pollutant and document sufficient evidentiary material to support enforcement action.

The Coast Guard's basic tool for pollution surveillance is the aerial patrol. Aircraft are assigned to patrol the coastal waters in search of pollutants already in the water, or of vessels in the process of disposing oil and/or hazardous substances. Primary emphasis of these surveillance flights is the coastal waters within the 12-mile contiguous zone, although occasionally flights are conducted further seaward. These pollution surveillance patrols differ in frequency and size of areas, varying from two per month over Valdez Harbor, Alaska to almost one per day over New York Harbor.

A primary component of the pollution surveillance system is the marine safety patrol. This patrol is a personnel unit that

covers a port area either by foot, vehicle or boat, seeking to detect, deter and prevent unsafe marine practices and conditions which could result in a discharge of pollutants. These patrols are conducted each work day by two or more individuals, usually during the prime hours of marine activity.

Harbor patrols are another important tool of the pollution surveillance system. The duties of the harbor patrol are similar to those of the aerial and marine safety patrols combined. Harbor patrols are employed to survey anchorage and restricted water areas and the waterside of piers and wharfs. Patrols are normally operated twice daily, once during daylight hours and once during evening hours.¹

A large segment of the Coast Guard's pollution surveillance system is the Federal ocean dumping program. Although administration of the ocean dumping program rests primarily with EPA, the Coast Guard has responsibility for surveillance and other enforcement activities to prevent unlawful dumping or illegal transportation of material for dumping.

Coast Guard surveillance, in terms of the ocean dumping program, include but are not limited to:

1. Monitoring of actual dumps;
2. Escorting or riding on dumping vessels;
3. Surveillance over transportation routes and disposal sites;
4. Obtaining radio reports of dumping vessel's position and activity;
5. Verifying vessel logs and reports;
6. Obtaining samples of materials to be dumped;
7. Checking for valid permits; and
8. Utilizing electronic methods such as radar.²

The Coast Guard uses several methods of surveillance to carry out the activities outlined above. Among some of the options, Coast Guard vessels and/or aircraft can be assigned to intercept and/or escort transporting vessels to the dump site, and vessels and/or aircraft can be assigned to patrol dump vessel routes. Other options include assigning a Coast Guard shiprider to ride the dumping vessel to the dump site or employing radar coverage of the site. Other practices include actual boarding of dump vessels before departure to verify documentation.

A now-defunct program, labeled the Ocean Dumping Surveillance System (ODSS), would have automatically provided the Coast Guard with detailed information. This system was designed so that vessels intending to discard waste in specified offshore areas would be required to have onboard some form of elec-

tronic surveillance equipment to provide recorded navigation data, disposal mission identification and actual dumping information.

The ODSS was scrapped by the Coast Guard for several reasons. The system was electronically very sophisticated, but could have been easily subverted. There was also a lack of interest within the electronics industry to develop such a system. At a time when ocean dumping activity is declining, the Coast Guard reconsidered its proposal and decided not to implement the system.

Search and Rescue

The Coast Guard maintains a wide variety of vessels, aircraft and communications networks to meet its responsibilities concerning search and rescue (SAR).

In the vessel category, the Coast Guard has high-endurance and medium-endurance cutters as well as patrol boats with SAR as their primary operational mission. Most of the high- and medium-endurance cutters are equipped with helicopter flight decks and aircraft services equipment. Nearly all are capable of operating at sea up to 30 days without replenishment. Many have air and surface search radar, transponders, radio direction finders and sonar. The newer high- and medium-endurance cutters are the most advanced SAR vessels in the world.

An array of Coast Guard small boats and aircraft are also SAR oriented. Small utility and motor lifeboats are especially designed for SAR operations at short ranges. Aircraft include long-range and short range fixed wing aircraft, and single and double engine amphibious helicopters.

Strategically located along the coastlines, the Great Lakes and the inland waterways are numerous Coast Guard stations designed especially for SAR operations. A primary function of these stations is early detection of a situation where SAR assistance is necessary. SAR stations are equipped with specially-designed SAR lifeboats and with abundant communications capabilities.

In addition to the above SAR surveillances, which comprise the best, most comprehensive SAR capability in the world, the Coast Guard operates an encompassing ship-tracking system to help assist any vessel in distress, anytime, anywhere between latitudes 80°N and 80°S. Called AMVER (Automated Mutual Assistance Vessel Rescue System), this computerized surveillance system relies primarily on merchant vessels to voluntarily send movement reports and periodic position reports to the AMVER center in New York. Information from these reports is entered into a computer which generates and maintains dead

reckoning positions for the vessel during its voyage. Vessel characteristics, SAR and medical capabilities are also stored in the AMVER computer.

Should a vessel become distressed anywhere within the AMVER operating area, the AMVER center in New York can deliver to the appropriate SAR coordinator, within a matter of minutes, information as to where the distressed vessel should be, and what other vessels, if any, are in the area and could render assistance. Approximately 30% of all merchant vessels worldwide, foreign as well as domestic, participate in AMVER.³

Ramifications of the Coast Guard Surveillance Program

The amount of Coast Guard surveillance that now permeates the entire spectrum of maritime activity has had profound ramifications on the service. The Coast Guard image--the public perception--has changed greatly over the past decade. Recruiting officers used to refer to the service as "The Lifesavers." Now they refer to it as "The Law on The Sea." The cause of this abrupt change over a relatively short period of time is twofold: Initially, the Coast Guard grasped for additional responsibilities in the regulatory and law enforcement areas as other operational areas required less resources. Many of the Coast Guard's previous operational functions, such as manning of lightships and weather stations, had become obsolete due to technological advancement. Secondly, the Coast Guard has had heaped upon it by Congress duties mandated through various Federal safety and anti-pollution laws during the 1970's.

The Coast Guard's proliferating surveillance program has not won overwhelming endorsement, either from within or outside of the service. Some personnel, who had expected to act in a lifesaving, "peaceful" capacity are not endeared to careers as drug chasers and fishing inspectors. Other personnel fear the Coast Guard is becoming a uniformed bureaucracy. The merchant marine industry, especially since the election of President Reagan, are ever-vigilant in their efforts to restrain, or control, Coast Guard "interference" in their operations. Recreational boaters sometimes feel harassed by Coast Guard personnel who board their boat under the guise of a safety inspection, obviously looking for contraband and narcotics. For example, a Coast Guard vessel quietly will stalk a recreational boater, until, when close by, a huge, high-intensity spotlight is focused on the unsuspecting, and now frightened-to-death, vacationer.⁴ Likewise, mariners dislike Coast Guard vessels that prowl the seas in completely darkened vessels searching for illegal fisherman and smugglers.

Internationally, the Coast Guard is generally held in high regard, recognized as the leader in maritime safety matters. The Coast Guard's expertise in surveillance techniques for ports and maritime safety and security, and in law enforcement, is a sought after commodity among foreign nations. Several countries developing a coast guard of their own have requested and received direct assistance in surveillance planning and operations.

Concrete benefits resulting from the Coast Guard's surveillance program are mixed at best. Internationally, it has helped the Coast Guard to assume a position of leadership, and has also permitted it to be used as an overall foreign policy tool by the United States. Domestically, benefits are more difficult to immediately realize. The benefits of VTS are currently a topic of debate among mariners, politicians, and others concerned with port and vessel safety. The Coast Guard itself estimates that, at most, 20% of those vessels attempting to smuggle narcotics into the U.S. are apprehended. Initially elated over establishment of a 200-mile fisheries economic zone, American fisherman now complain that Coast Guard enforcement efforts over domestic fishing vessels, as mandated by law, have adversely affected their livelihood.

As its surveillance program becomes more prominent, the Coast Guard will evaluate and re-evaluate expected results in an attempt to attain that delicate balance between vigorous enforcement and protection, and unproductive surveillance policies.

Future of Coast Guard Surveillance Program

Surveillance functions such as vessel traffic management, pollution monitoring and maritime law enforcement reflect a marked change of the traditional Coast Guard image. And the Coast Guard is changing its image in a vigorous fashion. The Commandant of the Coast Guard, Admiral John B. Hayes, has committed his service to assuming the role of a maritime police force. In his bi-annual policy document "Commandant's Long Range View," Admiral Hayes states that the Coast Guard: (1) Will develop necessary traffic management systems to exercise greater control over the navigation of vessels, particularly those carrying hazardous cargoes, in order to reduce the increase of vessel accidents associated with growing activity on the Outer Continental Shelf; (2) Will seek new means to deter violations that adversely affect the environment; (3) Will maintain a strong presence on and over the sea to enforce laws, deter conflict, and settle disputes; and (4) Will continue to pursue coordination of surveillance and intelligence gathering and analysis systems.⁵

Admiral Hayes estimates that operational law enforcement will represent the most significant demand for Coast Guard resources through the remainder of the century.⁶ He believes that the Coast Guard has Congressional backing to increase funding for various resources, but cites a severe lack of support from the executive branch (specifically, OMB). Admiral Hayes expresses the hope that the public will recognize the Coast Guard's importance to the nation and will sufficiently pressure the Executive branch to increase budgetary support.⁷

Even though expansion of Coast Guard surveillance capability in the future is a constant theme among the service's higher echelon, pitfalls are appearing. Some proposals to institute electronic surveillance systems to monitor ocean pollution, such as the ODSS, have met with reluctance from within the electronics industry to develop such systems. Additionally, the environmental benefits and economic feasibility of such a program are debatable. Another example of the Coast Guard requiring a sophisticated electronics package for surveillance purposes is at VTS New York. Here also, the electronics industry could not, or would not, meet Coast Guard specifications. Originally scheduled to be operational in 1977, these problems with surveillance equipment now make it unlikely that VTS New York will begin actually functioning until late in 1982.

Together with any discussion of future Coast Guard surveillance activities is the possibility that part of the present Coast Guard organization could become "civilianized," especially the marine safety function. Although not mentioned previously, the Coast Guard has an extensive commercial vessel safety program. Its mission is primarily regulatory, but it does have vessel inspection and casualty investigation functions. These functions are, in effect, a form of surveillance. The Carter administration discussed the possibility of creating a Department of Oceans, of which the Coast Guard would be a member agency, but leaving the regulatory aspect (commercial vessel safety) in the Department of Transportation (DOT). This obviously did not materialize, but the Reagan administration is discussing the possibility of moving the Maritime Administration (MARAD) into DOT. The Coast Guard could lose some of its functions if this were to occur. Additionally, transferring responsibility of one of the Coast Guard's most important surveillance capabilities, that of VTS, to a civilian agency or organization has been discussed. (Approximately one half of the VTS throughout the world are operated by civilians, often examiners with vast seagoing experience.)

In reaction to these and other problems, the Commandant, and others in decision-making positions, realize that a re-evaluation of the Coast Guard surveillance capabilities is necessary to insure society's desired results of a safe maritime industry, clean environment, and a proper execution of Federal law. When he labeled the 1980's a "Decade of the Oceans" Admiral Hayes said he "remained committed to a strategy that will prevent the stripping of our capability to respond operationally." He believes the Coast Guard is the most experienced, most able, and best equipped agency to fulfill Federal surveillance and law enforcement requirements over the maritime community.⁸

A definite expansion of industrial maritime activity from the shore outward--especially over the outer continental shelf and in fisheries areas out to the 200-mile limit of the economic zone, is inevitable. Consequently, even with the problems discussed above, most signals point to greater Coast Guard surveillance activity in the years ahead.

CONCLUSION

The Coast Guard's surveillance program is a multi-faceted approach to accomplish a variety of objectives. Vessel traffic management, enforcement of laws and treaties, pollution surveillance, and search-and-rescue are four major areas that employ various surveillance techniques, with each technique tailored to the particular program area.

The proliferation of surveillance has been a primary force behind the Coast Guard's changing role from lifesaver to policeman. Domestically, overwhelming acceptance of this new role has not been forthcoming, either from within or outside of the Coast Guard. Internationally however, the Coast Guard is a recognized leader in maritime safety and security, and their assistance is frequently courted by foreign nations.

The Coast Guard's surveillance program will expand rapidly in the future as law enforcement activities demand ever increasing amounts of resources. Surveillance activity will become more prominent as maritime activity extends out over the outer continental shelf and further into fisheries areas.

Roadblocks to this expansion will arise both from within the Federal government, due to budget restraints and proposed organizational changes, and from within the logistics industry, due to a lack of will or lack of ability.

The Coast Guard realizes the problems associated with its increased responsibilities in the surveillance area, and continually evaluates and re-evaluates its surveillance program to insure that performance meets demand. In spite of these problems, the author does not foresee a reduction of surveillance responsibilities in the future. On the contrary, due to an expansion of industrial and commercial activities in the maritime community, Coast Guard surveillance efforts will continue to grow in the years ahead.

FOOTNOTES

¹U.S. Coast Guard, Marine Safety Manual, (CG-495), 17 October 1977, vol. 2, p. 80-2:2.

²Ibid. p. 84-3:1.

³U.S. Coast Guard, National Search and Rescue Manual, (CG-308), 1 July 1973, p. 3-14.

⁴LCDR Michael R. Adams, "Torpedoing the Coast Guard's Good-Guy Image," Proceedings, U.S. Naval Institute, October, 1980, pp. 137-139.

⁵"Commandant's Long-Range View," Commandant Instruction 16014.1, 22 August 1979, pp. 15-22.

⁶Ibid. p. 21.

⁷"The Desperate Straits We're In," Proceedings, U.S. Naval Institute, October, 1980, pp. 18-28.

⁸Admiral John B. Hayes, "State of the Coast Guard Address," Washington, D.C., 15 January, 1981.

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