

United States Fire Administration



Technical Report Series

\$10 Million Marina Fire Bohemia Bay, Maryland



Federal Emergency Management Agency



**United States Fire Administration
National Fire Data Center**

\$10 Million Marina Fire Bohemia Bay, Maryland (January 6, 1989)

Investigated by: Randolph E. Kirby

This is Report 026 of the Major Fires Investigation Project conducted by TriData Corporation under contract EMW-88-C-2649 to the United States Fire Administration, Federal Emergency Management Agency.



Federal Emergency Management Agency



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U.S. Fire Administration Fire Investigations Program

The U.S. Fire Administration develops reports on selected major fires throughout the country. The fires usually involve multiple deaths or a large loss of property. But the primary criterion for deciding to do a report is whether it will result in significant "lessons learned." In some cases these lessons bring to light new knowledge about fire -- the effect of building construction or contents, human behavior in fire, etc. In other cases, the lessons are not new but are serious enough to highlight once again, with yet another fire tragedy report.

The reports are sent to fire magazines and are distributed at national and regional fire meetings. The International Association of Fire Chiefs assists USFA in disseminating the findings throughout the fire service. On a continuing basis the reports are available on request from USFA.

This body of work provides detailed information on the nature of the fire problem for policymakers who must decide on allocations of resources between fire and other pressing problems, and within the fire service to improve codes and code enforcement, training, public fire education, building technology, and other related areas.

The Fire Administration, which has no regulatory authority, sends an experienced fire investigator into a community after a major incident only after having conferred with the local fire authorities to insure that USFA's assistance and presence would be supportive and in no way interfere with any review of the incident they are themselves conducting. The intent is not to arrive during the event or even immediately after, but rather after the dust settles, so that a complete and objective review of all the important aspects of the incident can be made. Local authorities review USFA's report while it is in draft. The USFA investigator or team is available to local authorities should they wish to request technical assistance for their own investigation.

This report and its recommendations were developed by USFA staff and by TriData Corporation, its staff and consultants, who are under contract to assist the Fire Administration in carrying out the Fire Reports Program.

The U. S. Fire Administration appreciates the cooperation received from the Chesapeake City, Maryland Fire Department and Maryland State Fire Marshal's Office for this report. Particular thanks go to Fire Chief Donald Briscoe of the Chesapeake City Fire Department and Deputy Fire Marshal S. Richard Powell of the Maryland State Fire Marshal's Office.

\$10 MILLION MARINA FIRE

Bohemia Bay, Maryland, January 6, 1989

Investigated by: Randolph E. Kirby

**Local Contacts: Chief Donald Briscoe
Chesapeake City Fire Department
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322 Lindsey Avenue
Chesapeake City, Maryland 21915
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**S. Richard Powell
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Be1 Air, Maryland 21014
(301) 836-4844**

OVERVIEW

On Friday, January 6, 1989 at 0242, Cecil County, Maryland fire headquarters received a call from a resident located three-quarters of a mile across the river from the Bohemia Bay Marina. The caller thought he could see a fire at a marina around Bohemia Bay, but due to poor visibility caused by snowfall as well as the distance and time of night, he could not be certain as to its exact location. The fire dispatcher immediately contacted the state police.

The nearest officer was 18 miles from the marina and took 45 minutes to locate the fire, where he discovered at least 10 boats on fire. At 0327, he requested fire apparatus.

The first fire units arrived at 0349, approximately 67 minutes after first notification, and found 15 boats on fire. Several had broken loose from their moorings and drifted into other boats. Fuel from boats was burning on top of the water and flames were fanned by a six knot wind.

SUMMARY OF KEY ISSUES

Issues	Comments
Cause of Fire	Believed to have been accidental, originating on board one of the moored boats; however, arson has not been ruled out.
Delayed Discovery	Reported by resident living across the river from marina. He was uncertain as to the exact location of fire. State police officer assigned to investigate was 18 miles away and took 45 minutes to determine the exact location.
Delayed Response	Nearest fire departments were 10-20 miles away and had to travel in a snowstorm.
Fire Protection Equipment	No smoke or heat detectors installed in the covered boat areas. No sprinkler system. No standpipe system on pier where fire occurred.
Water Access	New roofed-over portions of the marina did not provide for emergency vehicle access to boat area; there was no suitable area to obtain water for fire fighting. Portable pumps and tankers had to be used.
Building and Dock Construction	Finger piers constructed of plastic panels supported by wood pilings burned early in the fire, limiting access to the boats.
Fire Code	Marina building completed in late 1986; was not required by code to have any type of fire detection or fire suppression equipment.
Weather Conditions	Snowfall hindered locating and responding to fire; river ice prevented use of mini-fireboat.

The first arriving units were unable to find a suitable area for drafting water and finally resorted to portable pumps and fire department tankers from neighboring jurisdictions.

The fire was under control in approximately two and one-half hours after totally destroying 16 boats, severely damaging three boats, and causing lighter damage to an additional 100 boats. Damage was estimated at \$10 million.

There were no deaths or injuries.

THE BOAT STORAGE STRUCTURE

The Bohemia Bay Marina consists of nine dock areas (shown in Appendices D, E, and F), three of which ('D', 'E', and 'F') are covered with a metal superstructure supported by wooden piers. Two of these covered boat areas are 110 feet wide x 350 feet long x 40 feet high. The third covered dock, F, the one involved in the fire, was 60 feet wide x 375 feet long x 45 feet high, and adjacent to the shore. This dock also had a metal addition constructed on the parking lot side which was designed as a carport area for the boat slips at 'F' dock

The finger piers throughout the marina are constructed of plastic panels used as walkways and supported by wooden piers. There is a complete air bubbler system in the water designed to prevent ice build-up throughout the boat storage areas.

Boats stored in the covered slip areas ranged from 40 feet to 65 feet. The overwhelming majority were constructed of fiberglass. They included both diesel and -gasoline powered vessels.

General storage practices for boats requires that fuel tanks be topped off to minimize water condensation. Electrical requirements include continuous battery charging to preserve the operation of battery systems.

The close proximity of the boats (approximately four feet between them) created a tremendous potential fire hazard.

FIRE PROTECTION CODES AND EQUIPMENT

There were no fire detection or sprinkler systems at Bohemia Bay. The marina structure was completed in October 1986. It was built under a Maryland code that did not require fire detection, fire sprinkler, or standpipe systems. In addition, there was no requirement for providing readily accessible areas for fire department drafting operations.

Portable fire extinguishers located on finger piers were the main fire protection equipment provided in the entire marina. As a result of persuasion by the local fire department, a two inch dry standpipe line running the length of docks 'D' and 'E' had been installed. (The adequacy of such standpipe lines should be questioned because of their small size and the location of hose outlets.) There was no standpipe on the pier with the fire.

A new Maryland code was adopted in 1987, which incorporated the 1987 edition of the B.O.C.A. code. The B.O.C.A. code adopts NFPA Standard #303, Protection to Marinas, and will require all future structures of this type and use to be equipped with fire protection, fire suppression, and standpipe systems. They must also provide reliable and accessible sources of water for fire fighting.

There are no provisions in the current code to retrofit existing similar structures unless they are significantly altered in some manner (such as will be the case for the reconstruction of the portion of the building on 'F' dock that had to be removed as a result of the fire).

THE FIRE

On January 6, 1989 at 0242 hours, a fire call was received by Cecil County fire headquarters from a citizen who resided at Hack's Point, Maryland, some three-quarters of a mile across the Bohemia River from the Bohemia Bay Marina. The caller told the dispatcher that he thought there was a fire at one of the marinas across the river but that he was unable to identify the particular marina involved due to snowfall which caused poor visibility.

Fire headquarters transferred the call to the northeast station of the Maryland State Police some 18 miles from the marina area, requesting that a unit be sent to the Bohemia Bay area to evaluate the situation. A police officer was dispatched at 0242 and roughly a half hour later he arrived at the Bohemia Vista Marina on Town Point Road, adjacent to the Bohemia Bay area, where he began an investigation. He detected smoke but was unable to locate the fire.

After several minutes of searching the entire Bohemia Vista Marina area, he drove approximately one mile to the Bohemia Bay Marina, arriving at approximately 0327. He located the fire and radioed headquarters that at least ten boats were on fire. He requested the dispatcher send fire fighting equipment immediately.

At 0344, the Chesapeake City Fire Chief and two other members of the Fire Department responded from their homes in private vehicles, arrived at the scene, and requested mutual aid. An engine from the Chesapeake City Fire Department was the first unit to arrive and was assigned the position of attacking the fire at slip 'F-9' so as to stop its spread toward the north of the 'F' dock area. This was accomplished by sinking a burning boat in the 'F-9' slip and creating a fire break.

By this time approximately 15 boats were ablaze and several were drifting out of their slips heading toward other boat storage areas.

As additional equipment arrived, a problem developed as to where to obtain water. There was virtually no place nearby where drafting water directly into the pumpers could be accomplished due to building construction and sloping terrain. The Chesapeake City Fire Chief ordered that two portable pumps be placed in service to supply tankers. The Hack's Point unit was assigned at the south end of 'F' dock along with its tanker. One-and-three-quarter-inch hand lines were used from all engines to control and extinguish the fire.

One boat dislodged from its moorings at 'F' dock, drifted while ablaze, and set fire to another boat located in a slip at the south end of 'E' dock. The Middle Town, Delaware units were assigned to this area. By this time considerable quantities of gasoline and diesel fuel were floating on the water. The fuel ignited and drifted toward 'C' dock. Manpower was deployed at the south end of 'D' and 'E' docks to control the fire and to afford some protection to 'C' dock.

Consideration was given to requesting that the mini-fireboat from Hack's Point be put into service, but it was determined that this was not possible due to river ice, and there was no suitable place to launch the boat within the Marina area.

The Fire Chief in charge of the operation realized that the burning boats were a total loss. As a result, primary tactics were directed to containment of the fires and protection of exposures. This action proved to be a very wise tactical maneuver as most of the damage was confined to the boats and areas where the Fire Department was initially confronted.

The engine from Cecilton was sent to the far side of the Marina and began drafting operation at the boat launching area, approximately 1,800 feet away from the fire origin. The unit then resupplied tankers.

The fire required the use of six engines, three tankers, and 28 firefighters. It was brought under control at approximately 0500 hours. Major damage was confined to the 'F' dock structure and connecting finger piers. (Damage is discussed below.) There were no deaths or injuries.

WEATHER CONDITIONS

The Chesapeake City Fire Chief stated that the temperature was 28 degrees when responding to the fire, and the firefighters had to cope with snowfall and a six knot southeast wind, making visibility and road conditions difficult. These factors accounted for some of the delay in apparatus reaching the scene. They also were another consideration in not requesting the mini-fireboat.

ORIGIN AND SPREAD OF FIRE

The fire is believed to have started on board one of the boats moored between slips 14 and 18, 'F' dock. Among the causes considered were a malfunction of a heater on board one of the boats and an electrical problem because of the need to continually charge batteries. Also, there was a possibility the fire was deliberately set. No cause was determined.

Because of the delays in detecting and finding the fire, it burned over an hour before suppression began, spreading from boat to boat. Flames were fanned by the six knot wind.

Once tie lines were burned, boats began moving out of their slips, affecting other parts of the Marina. It is estimated that approximately 6,000 gallons of fuel spread over the water. That, too, was burning and affecting boats on 'C' dock.

FIRE DEPARTMENT EQUIPMENT AND RESPONSE

Chesapeake City was aided in this fire by departments from Hack's Point, Cecilton, and Elkton, Maryland, and Middle Town, Delaware. They are all-volunteer units. Total equipment at the scene was six engines, three tankers and 28 firefighters. The Elkton unit was used for fill-in at Chesapeake City. The closest department to the Bohemia Bay Marina is Hack's Point, ten miles away. The other departments were from 10 to 20 miles away. These distances obviously create undesirable delays.

Hack's Point Fire Department has one 22-foot boat equipped with a 150 gallon per minute pump for boat fires. Some consideration was given to having it brought to the scene but, as discussed above, that was rejected because of weather and ice.

DAMAGE ASSESSMENT

Approximately two-thirds of the metal structure of 'F' dock (250 feet) had to be removed before any investigative or salvage operations could begin. Even though the structure itself did not burn, the foundation was weakened and could no longer be used because of supporting piers burning.

Most of the finger piers, pilings, and walkways between slips 9 and 23 on 'F' dock were destroyed. Sixteen vessels were sunk. One vessel located at 'F' dock received heavy damage and two at 'C' dock received substantial damage as a result of fuel burning on the water. Approximately 100 boats received light damage from soot and burning embers. Their cleaning proved much more difficult and expensive than first thought.

It is estimated that the loss to the vessels was \$8 million and damage to the structure, \$1 million. There were no casualties.

The possibility of surface fuel and burned debris reaching the river created an immediate need for a massive cleanup and containment operation. This operation involved containment ponds throughout the marina complex and daily maintenance of these ponds by several cleanup crews. Several weeks were required to complete the operation, which cost \$286,000.

The costs of the fire did not stop at the direct loss. There were logistical difficulties in conducting an effective investigation and salvage operation. In order to remove sunken vessels for investigation and harbor clearances, heavy cranes both on shore and on barges, assisted by many divers, had to be utilized. The total cost of the fire was estimated at close to \$10 million.

OTHER MARINA FIRES

The problem with roofed-over boat storage areas lacking fire detection and suppression equipment is not unique to the Bohemia Bay Marina fire incident. According to Maryland fire authorities, there are several marina operations located in various parts of the state that pose an equal or greater threat than was experienced in this incident.

There have been several major marina fires in Maryland since the early 1980's, all of which resulted in large fire losses.:'

Mears Point Marina, Kent Island, 1988, \$500,000 loss
Great Oak Marina, Chestertown, 1988, \$800,000 loss
Great Oak Marina, Chestertown, 1983, \$1 million loss
McDaniels Marina, North East, 1980, \$300,000

Several of the factors causing high losses were similar to the Bohemia Bay fire: delayed alarm, delayed detection, lack of built-in fire suppression equipment, and inadequate fire department access. Unfortunately, the codes that are in existence today will not have an impact on these existing facilities unless they are made retroactive.

LESSONS LEARNED

1. Retroactive codes needed for marinas.

Present day building and fire protection codes enable emergency services to effectively deal with a large part of the marina fire problem. Had the very minimum of fire protection equipment, such as an automatic fire detection system, been installed in the covered slip area, the outcome most probably would have been drastically different. Fire service personnel who were actively engaged in this incident unanimously agree that such a tool is urgently needed, especially when one considers that there are many similar facilities in Maryland as well as elsewhere.

2. Public fire education needed for marinas and boat owners.

Regardless of whether codes require fire protection systems, the marina owners and users still should be advised of the need to have early detection and automatic suppression. This marina fire makes it clear that operators and users of facilities such as this must take an active role in recognizing and addressing the fire hazards that confront them. It makes little sense to invest hundreds of thousands of dollars in a vessel that is left virtually

¹ Maryland State Fire Marshal's Office

unprotected from the hazards of fire throughout a large portion of the year. The hazard is probably not adequately recognized. Marina owners, operators, and users should be made the target of a special education campaign to rectify this situation.

3. Fire department planning needed for special hazards.

This fire further illustrates the need for fire service personnel who serve areas such as this marina' to aggressively pursue and develop comprehensive emergency operation plans. Included in the plans would be identification of reliable sources of water for fire fighting purposes during all seasons of the year. In the case of this marina, consideration was given to an air bubbler system around the boats; however, no consideration was given toward identifying a suitable year-round site for fire department drafting operations, not to mention other fire protection equipment shortcomings. A pre-fire plan also should include the mutual aid companies which most likely would be an integral part of the overall operation.

4. Physical security needed to protect high-value marinas.

While limited security provisions were provided at this marina, it is obvious that the program fell short. It is necessary during long periods of inactivity on the part of boat owners and marina management to have security checks round-the-clock or through built-in fire protection equipment such as fire detection and suppression systems.

5. The fire department should be alerted when a fire of uncertain location is reported.

Common practice in many parts of the country is to use police to find a fire when the reported location is uncertain, rather than call out the fire department - particularly volunteers. Generally, if the location given is specific enough to institute a search, the fire department should be called. At a minimum, they can stand by at their station until the location is determined. Police should be used to search for fires, too, particularly where they could potentially find the fire before the fire department.

CONCLUSION

The large amount of damage caused by this fire was primarily due to the long period of time needed to discover its location and the subsequent distance traveled by fire fighting units. The absence of even the most basic, minimal built-in fire protection equipment was also a major contributor. Undoubtedly, this damage would have been far greater if not for the proper size-up by the Chesapeake City's Fire Chief and his recognition of the tremendous exposure problem that existed. He and other fire personnel are to be commended for a job well done.

APPENDICES

- A. List of slides, with selected pictures.
- B. Fire department response time and distance.
- C. Units used at the fire.
- D. Map of docks showing fire units' positions at fire.
- E. Map of docks showing sunken and damaged boats.
- F. Sketch of docks showing fire area.
- G. State Fire Marshal's report of the fire incident.

SUMMARY OF SLIDES

<u>Slides</u>	<u>Description</u>
1	Entrance to Bohemia Bay from Town Point Road.
2	Salvage operation - south end of 'E' dock.
* 3	Raised hull being examined by fire investigators (with boats typical of those that burned in background).
* 4	Burned piers of 'F' dock.
5	South end of 'F' dock showing sunken vessels.
6	Sunken vessel being raised amidst burned piers - south end of 'F' dock.
7	Looking south between 'E' and 'F' docks.
8	Remains of north portion - 'F' dock roof structure.
9	North portion - covered slip areas. Note sloping terrain.
10	Heavy equipment required for conducting investigation and salvage work.
11	Carport section of remaining roof structure 'F' dock.
12	Remaining carport section of 'F' dock - note restricted access.
13	Remains of wooden pier - 'F' dock area.
14	Remains of vessel after being raised.
15	Remains of 'F' dock finger pier and sunken vessel.
16	Looking south at center pier of 'E' dock.
17	Damaged pier at 'E' dock, slip 21.
* 18	Equipment used for containment ponds.

* Pictures included with this report; the slides are in the master file copy at the U. S. Fire Administration.

- 19 Typical plastic finger pier panels.
- 20 Sunken vessel - 'E' dock, slip 21 - note debris on water.
- 21 Containment ponds and clean-up operation.
- 22 Tanker for storage of recovered fuel.
- 23 Launch area at end of 'C' dock where drafting operation eventually took place.
- 24 East view of 'F' dock between slips 14 and 18 - suspected area of fire origin.
- 25 Heater recovered from vessel located in area of fire origin.
- 26 Divers assisting in salvage operation and boat recovery.
- 27 Smoke and soot damage to one of approximately 100 vessels.
- 28 Rooftop area of carport and slip cover of remaining portion - 'F' dock.
- 29 Complete destruction of finger piers - south portion of 'F' dock.
- 30 Looking north at remains of 'F' dock.







FIRE DEPARTMENT RESPONSE TIME AND DISTANCE

	<u>Notified</u>	<u>Arrived at Scene</u>	<u>Miles to Scene</u>
<u>Maryland State Police</u>	0242	0327	18
<u>Chesapeake City. Md.</u>			
Chief	0327	0344	11
First Engine	0327	0350	12
Tanker	0346	0401	12
Second Engine	0327	0403	12
<u>Hack's Point. Md</u>			
Engine	0337	0355	10
Tanker	0337	0430	10
<u>Middle Town. Del.</u>			
Engine	0415	0448	20
Tanker	0415	0448	20
<u>Cecilton. Md.</u>			
First Engine	0419	0444	15
Second Engine	0503	0522	15
<u>Elkton. Md.</u>			
Engine	0346	0443	18
(Note: used for station fill in)			

UNITS USED AT THE FIRE

<u>Equipment:</u>	<u>Engines</u>	<u>Tankers</u>	<u>Personnel</u>
Chesapeake City, Md.	2	1	9
Hack's Point, Md.	1	1	6
Cecilton, Md.	2.		6
Middle Town, Del.	1	1	7
	<hr/>	<hr/>	<hr/>
Total	6	3	28
Elkton, Md.	1		3

Note: This unit was used to fill in at Chesapeake City Fire Station.

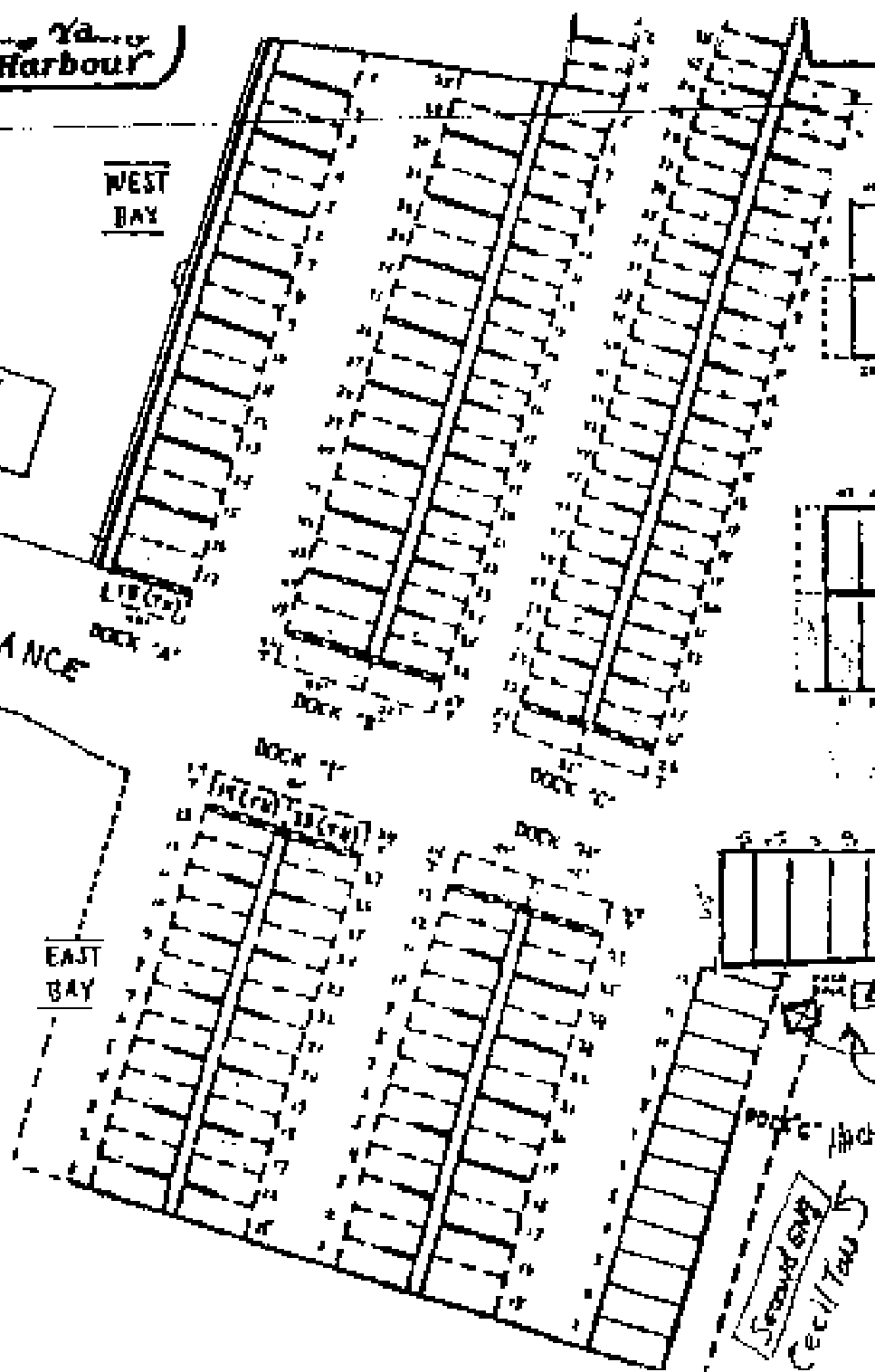


WEST BAY

OFFICE

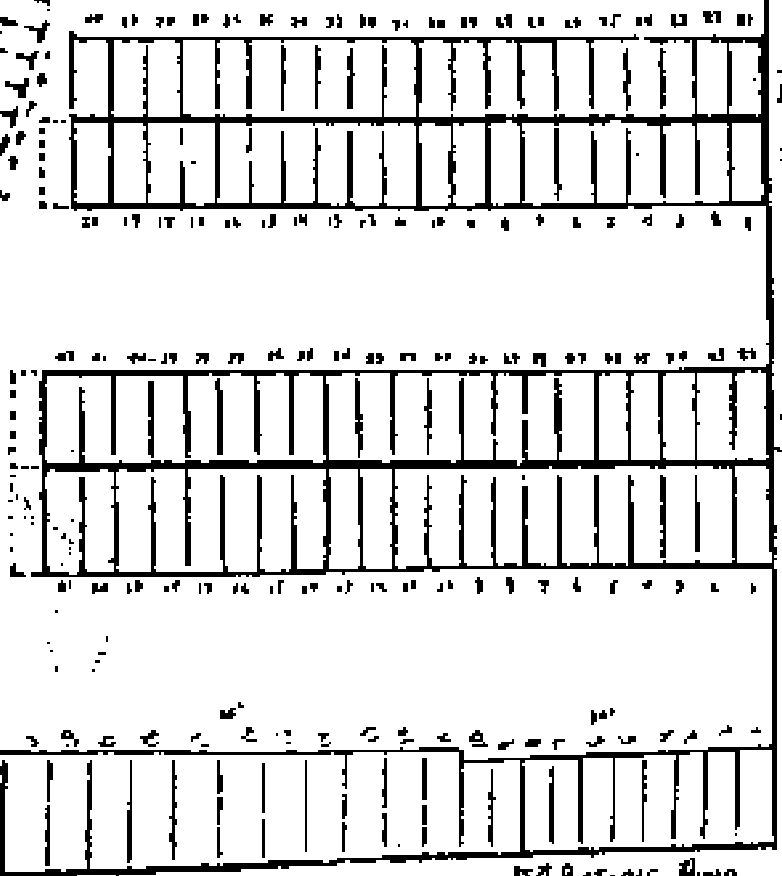
FUEL DOCK

MARINA ENTRANCE



EAST BAY

ENG

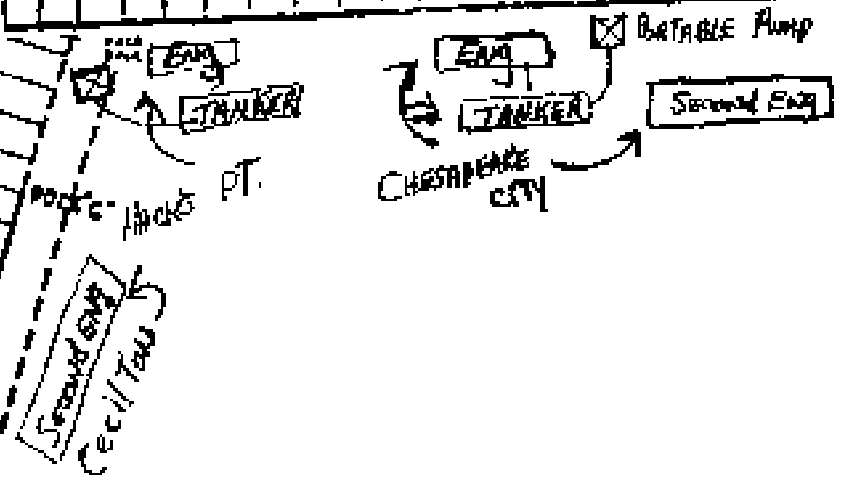


10' 10' b-dock

40' 50' E dock

10' F-dock

Middle Tower





WEST BAY

OFFICE

Full Dock

MARINA ENTRANCE

DOCK A

DOCK B

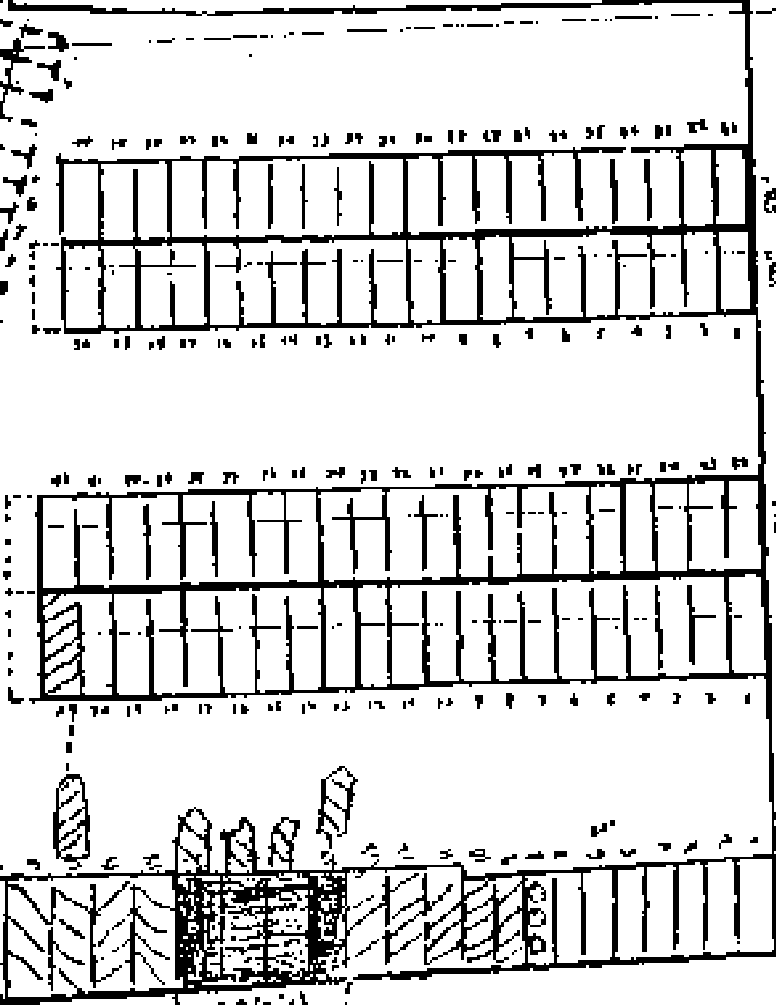
DOCK C

EAST BAY

DOCK D

DOCK E

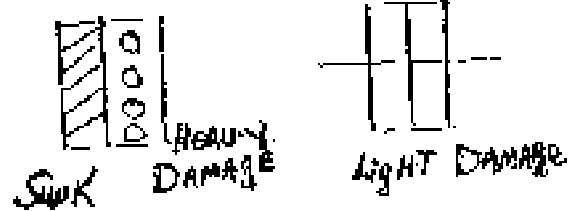
DOCK F



60' B-Dock

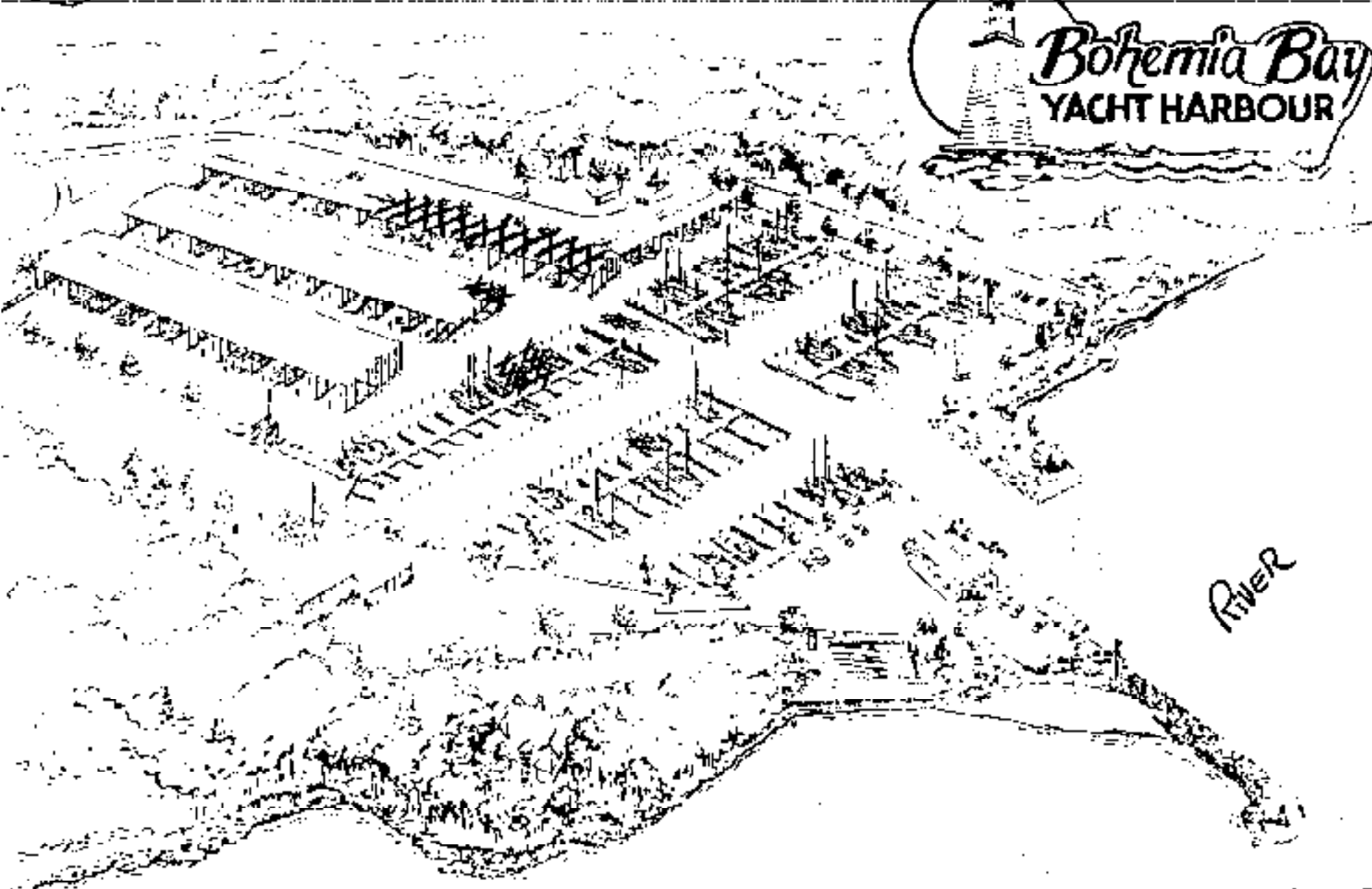
60' E-Dock

60' F-Dock

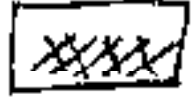


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6 KNOTS





EXTENT OF FIRE DAMAGE TO Buildings & Docks



OFFICE OF THE FIRE MARSHAL
INVESTIGATION REPORT

Appendix G

1	Date of Investigation: Month/Day/Year 1-5-89	Time FMO Notified: 0335 Time FMO On Scene: 0404	SFMO Report #: 07-89-012 Requested By (Name): MSP - North East Barracks
2	Date of Incident: Month/Day/Year/Day of Week 1-6-89 Friday	Time Of Alarm: 0327 Time F.O. On Scene: 0349	Neatnar FDID # 07002
3	Location of Incident: 1026 Town Point Road, Chesapeake City, Cecil County, MD.		
4	Type of Incident:	<input type="checkbox"/> STRUCTURE <input type="checkbox"/> VEHICLE <input checked="" type="checkbox"/> EXPLOSION	<input type="checkbox"/> FALSE ALARM <input type="checkbox"/> FIRE WORKS <input type="checkbox"/> BOMB THREAT <input type="checkbox"/> EXPLOSIVE INCIDENT <input checked="" type="checkbox"/> OTHER Boats and <input type="checkbox"/> CASUALTY Marina
5	Description of Property Damaged: Large covered shed, 12 motor boats, Marina Dock, destroyed 2 boats w/ heat and smoke damage		
6	Estimated Loss Total: \$10,000,000.00	STRUCTURE Total	CONTENTS OTHER
7	Point of Origin: On board one of the boats on "F" Dock		
8	CAUSE: UNDETERMINED		
9	Premises Secured Before Alarm	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	By Whom:
	Forcible Entry Used: No	Where/How	By Whom:
10	<input type="checkbox"/> DISCOVERING PERSONS <input type="checkbox"/> REPORTING PERSON <input checked="" type="checkbox"/> OWNER <input type="checkbox"/> OCCUPANT <input type="checkbox"/> VICTIM NAME BOEBHIA BAY YACHT CONDOMINIUM ASSOCIATION Race: Sex: D.O.B. ADDRESS 1026 Town Point Road, Chesapeake City MD S.S.#: PHONE: OCCUPATION BUSINESS Contact Person: PHONE: ADDRESS: Peter Tucker, Vice-Pres. 865-2601		
11	<input type="checkbox"/> DISCOVERING PERSON <input checked="" type="checkbox"/> REPORTING PERSON <input type="checkbox"/> OWNER <input type="checkbox"/> OCCUPANT <input type="checkbox"/> VICTIM NAME Donald Schubert Race: Sex: C D.O.B. ADDRESS Backs Point, Earlvilla, MD. S.S.#: PHONE: 224-2746 OCCUPATION BUSINESS ADDRESS: PHONE:		

	<u>RENTER</u>	<u>OWNER</u>
F-8	Brian Hard 1 Hessian Blvd. Reading, PA 19607 1-215-775-0434 42' Trojan	Owner Occupied <i>diesel</i>
F-9	John Walker RD 1, Box 387-A Middletown, DE 19709 1-302-378-7889 40' Jersey	Owner Occupied <i>diesel</i>
F-10	Harry Alexander Woodchuck Way P.O. Box 464 Chadds Ford, PA 19317 82' Chris Craft 1-215-388-7993	George R. Isaacs 163 S. Memorial Highway Trucksville, PA 18708 1-717-696-2674
F-11	John Tresvikas 327 Wharton Street Phila. PA 19147 1-215-468-3753 41' Concorde	Owner Occupied <i>diesel</i>
F-12	Arthur Zack 1032 Cardinal Lane Cherry Hill, N.J. 08003 1-609-795-4253 38' Holiday Mansion	Thomas Abruzese 105 Old Army Road Scarsdale, N.Y. 10583 1-914-472-3195 <i>gas</i>
F-12	Charles Reaves 8304 Newbold Lane Laverock, PA 19118 1-215-247-1139 45' Vista	Owner Occupied <i>diesel</i>
F-13	Clement Rizzo 140 Cambridge Drive Glen Mills, PA 19342 1-215-459-2126 40' Silverton 130	Jim Murphy 1810 Gregg Street Phila., PA 19115 1-215-464-5181
-15	Kenneth Kahn 623 Gypsy Hill Road Gwynedd Valley, PA 19437 1-215-646-2421 58' Hatteras	Owner Same As Above <i>diesel</i>
F-16	Ernest Storr 14 Utah Trail Medford, N.J. 08055 1-609-654-9286 49' Gulfstar	Owner Same As Above <i>diesel</i>

	RENTER		OWNER
F-17	Alfred Kedz 87 Cranmoor Drive Toms River, N J 08753 1-201-240-5843 52' Jefferson	<i>diesel</i>	Owner Occupied
F-18	Alexander Barry THEODORE PETRICK P.O. Box 370 3037 S. PIKE AVE Chatham, PA 19318 ALLENTOWN, PA. 1-215-869-0287 34' Wellcraft 43 CALIFURNIAN 1-215-797-4655	<i>gas</i>	Alfred Kedz 87 Cranmoor Drive Toms River, N J 08753 1-201-240-5843
F-19	Stanley Bystrek 7 Spring Street Paoli, PA 19301 1-215-644-7297 42' Carver	<i>diesel</i>	Robert Kille 25 Grange Ct. Woodstown, N.J. 08098 1-609-769-3718
F-20	Isadore Shooster 708 Cove Lane Media, PA 19063 1-215-585-7746 55' Gulfstar	<i>diesel</i>	Thomas Abruzese 105 Old Army Road Scarsdale, N.Y. 10583 1-914-472-3135
F-21	Jim Murphy 1810 Gregg Street Phila., PA 19115 1-215-464-5181 43' Trojan	<i>diesel</i>	Owner Occupied
F-22	Richard Sanford 7 Bittersweet Road West Chester, PA 19382 1-215-524-1800	<i>diesel</i>	Owner Occupied
F-23	53 Ocean Harry Haas 2033 School Road Hatfield, PA 19440 1-215-855-2020 44' Trojan	<i>diesel</i>	Owner Occupied
E-21	Eugene Noll 5 Pointe View Circle Medford, N.J. 08055 1-609-953-0824 10 m Trojan	<i>gas</i>	John Metz 844 Market Street Kingston, PA 18704 1-717-639-2584
C-18	Joseph Swerk 318 S. Norwood Ave. Newtown, PA 18940 1-215-968-3355 26' Wellcraft	<i>gas</i>	Owner Occupied
C-19	Eric Johnson 242 South State Street Newtown, PA 18940 1-215-968-2449 25' Regal	<i>gas</i>	Owner Occupied

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. continuation
INVESTIGATION REPORT NO. 07-89-002
INVESTIGATOR S. Richard Powell, Deputy Fire Marshal
DATE: 1-6-89

This writer was notified at 0335 hours by MSP North East that there was a fire at the Bohemia Bay Yacht Marina and at least 15 boats were on fire.

Upon arrival at the scene the fire department was on location fighting the fire. This writer spoke with TFC Nelson who stated he got the call from North East around 0242 hours and responded from the North East area. He went into Bohemia Vista first, the second Marina on Town Point Road. He went down to the dock area and could smell smoke but saw no fire. He then went to the owner's residence at the Marina, Brice Moore. Mr. Moore got up and came down to the dock area also. He son Augustus arrived at about this time also. They could not find any fire at this Marina. They could smell smoke and it seemed to be coming from Bohemia Bay Marina. This was around 0303 to 0310. He left to go to Bohemia Bay. It was starting to snow at this time. When he got down into Bohemia Bay Marina he could see at least 10 boats on fire, maybe more. At this time he asked North East to send the fire department and to call the Fire Marshal.

Augustus Moore came over to the Bohemia Bay Marina and had 2 people with him; Kenneth F. Reed, 626 Mt. Nebo Road, Chesapeake City and Glen Lawrence Lupeer, 237 West Main Street, Cecilton, MD. These 2 were intoxicated. One had been stuck and the other had gone to pull him out of the mud.

The writer then contacted management of the Marina and asked them to get a list of the owners of the boats that were damaged and requested some more help from the Fire Marshal's office. The writer was advised that DFM Taylor was on his way and someone from the lower shore was on their way to the area.

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. continuation
INVESTIGATION REPORT NO. 07-89-002
INVESTIGATOR S. RICHARD POWELL, Deputy Fire Marshal
DATE: 1-6-89

This writer then called Cecil County Fire Headquarters for times of call and name of the person who reported the fire. Headquarters stated that they received a call at 0242 hours from a Mr. Donald Schbert of Hacks Point who stated that his dogs had gotten him up and while outside he could see that there was something wrong at one of the Marinas on the other side of the river. He could not make out which Marina but there was something wrong; it could be a fire but he could not tell for sure. At this time Fire Headquarters transferred the call to MSP North east and they send Trooper Nelson to check the area out. They received the call from MSP at 0327 that there were at least 10 boats on fire and sent Chesapeake City Fire Department to the fire.

At this time the smoke had cleared and the fire department had stopped the spread of the fire and this writer walked along the shore line of "F" dock and could see that there were at least 14 boats down, one with fire damage to the left side, and one starting to burn at the end of "E" dock. Some of the slips on "F" dock looked as if there were no boats in them. 'It was later found that some had drifted out of the slip area and others were consumed by the fire. Count of the area showed that boats F-9 through F-23, were completely destroyed by the fire. F-8 had fire damage. E-21 was destroyed; C-18 and C-19 had smoke and heat damage.

At this time the writer was advised by management that all owners had been notified except one and some of the owners were starting to arrive at the Marina.

A list of boats winterized by the yard and owners is attached.

The writer interviewed owners who had arrived.

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. continuation

INVESTIGATION REPORT NO. 07-89-002

INVESTIGATOR S. RICHARD POWELL, Deputy Fire Marshal

DATE: 1-6-89

Mr. Stanley Bystrek - F-19 slip. 7 Spring Street, Paoli, PA 19301
telephone 1-215-644-7297. 42" Carver, diesel power. Boats US Insurance. Stated
last on the boat on December 12, 1988 and had winterized the boat himself and
and four 75 watt bulbs: in the motor area. No problems with the boat and he did
all the work himself. He rented his slip from the Condo owner, Robert Kille.

Interviewed Clement Rizzo. F-14 slip. 140 Cambridge Drive, Glenn Mills, PA
19342 telephone 1-215-459-2126. 46' Silverton, diesel power. Boats US Insurance.
He started the boat was winterized by the yard, power was off; had no problems with
the boat and at one time last year was going to sell it for \$120,000.00 but decided
no to. He rented the slip from Condo owner, Jim Murphy.

N-other owners were on location at this time; investigation to continue.

S. RICHARD POWELL
Deputy Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 1

INVESTIGATION REPORT NO. 07-89-002

INVESTIGATOR S. Richard Powell, Deputy Fire Marshal

DATE: 1-9-89

This writer contacted Conowingo Power Company reference the fire at the bohemia Bay Yach Marina. The writer interviewed Bill Lander; he stated that he was called and arrived at the Marina around 0700-0730 hours. He stated he was advised by the Fire Chief that he, the Fire Chief, had turned the main off at each dock; this being E. F. and G. at the control room or meter room at each dock.

Lander stated that he, at this time, pulled the power at the main transformer G-3D for F dock. He checked the power to the other two and turned them back on as there was no fire damage to them. He did not touch any of the breakers at the meter.

Investigation to continue.

S. RICHARD POWELL
Deputy Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 2

INVESTIGATION REPORT NO. 07-89-002

INVESTIGATOR S. RICHARD POWELL, Deputy Fire Marshal

DATE: 1-9-89

This writer interviewed the night watchman: Joe Shevery w/m dob 3-20-59

SS# 215-84-8476 address 1026 Town Point Road, ChesapeakeCity, MD 885-2832.

He stated that he is required to make a round through the yard each night. He does
this at different times each night so if someone is watching he has no set pattern.

The night of the fire he made his round, leaving his house at about 2230 hours and
got back a little after midnight. He goes out on each dock, checks the air
compressor on each dock, checks doors at the shop and office. This night he found
nothing out of the way around the yard. The day of the fire his wife got him up and
he went down to the fire around 0530 hours.

Investigation to continue.

S. RICHARD POWELL
Deputy fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 3
INVESTIGATION REPORT NO. 07-89-003
INVESTIGATOR S. Richard Powell, Deputy Fire Marshal
DATE: 1-10-89

The writer conducted a telephone interview with Mr. Charles Reaves - F-13 slip.
830 Newbold Lane. Laverock PA 19118 telephone 215-247-1139 work 215-228-6813
1988 46' Vista \$350,000.00 Bought it new in August, 1988. Boat was winterized
by a friend out of the Philadelphia Marina Center in Philadelphia. Electric was on
to run the pumps and the battery charger converter. No problems with the boat.
Last on the boat January 2 or 3 of 1989. Will send a picture of the boat to the
Marina.

Telephone interview with Alfred Kedz - F-17 slip. 87 Crammoor Drive.
Toms River, New Jersey, telephone 201-240-5843. 1986 52' Jefferson. Bought the
boat new in 1986. Had the boat for sale to get one with 4 staterooms instead of 3.
Asking \$290,000.00 to \$295,000.00 for the boat. The Marina winterized the boat
last on the 1st of November. Mr. Kedz has been out of the country since then.
No problems with the boat and are beside themselves because of the loss.

Investigation to continue.

S. RICHARD POWELL
Deputy Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 4
 INVESTIGATION REPORT NO. 07-89-002
 INVESTIGATOR David Herring, DCFM
 DATE: 1-10-89

On 1-10-89 the writer spoke with Mr. Wesley Russ of Shamrock Electric,
 310 Commerce Drive, Easton, Maryland - telephone 820-8566. Mr. Russ stated he and
 Greg Metzger had responded to the Bohemia Bay Marina on the morning of the fire for
 emergency electrical repairs. Russ stated they worked on G, F and E docks and the
 main breakers to all three had been turned off by fire department personnel.
 Mr. Russ believed all individual breakers on F dock had tripped; however upon checking
 with Greg Metzger he stated they did not check them. He stated Metzger went to
 F dock, confirmed the main was off and proceeded out of the area due to fire
 department activity. Metzger could not say if the individual breakers on F dock
 had tripped or not.

Russ stated that a breaker on G dock had tripped. and it was determined to
 control the docklight line feeding both G and F dock. This docklight feed line
 was for the small pedestallights used to illuminate the walkway. Russ stated they
 also worked on the last receptacle on F dock (near F-24) and it was fed from G dock
 supply power.

David M. Herring
Deputy Chief Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 5
 INVESTIGATION REPORT NO. 07-89-002
 INVESTIGATOR David M. Herring DCFM
 DATE: 1-10-89

On 1-9-89 the writer made a door to door check of the homes located on
 Town Point Road, in the proximity of the entrance road to the Bohemia Bay Yach
 Harbour. As a result of this check, beginning at 1500 hours, the following was
 learned:

#1056 Town Point Road (next to Bohemia Bay entrance) - no answer

\$1083 Town Point Road (north side of Town Point Road) Mrs. Herberta Ferguson,
 telephone 885-5956. She stated she and her husband had gone to bed about 2330
 the evening prior to the fire. She stated at about 0300 hours she was awakened by
 her dog and noted nothing unusual but could hear considerable vehicular traffic on
 Town Point Road. She stated a short while later she heard Hack's Point Fire departme
 siren blowing and upon looking at her watch noted it was 0333 hours. She reported
 no unusual activity in the area prior to the fire.

#1007 Town Point Road (grey 2-story, north side of Town Point Road)

Mr. Franklin Rhoades stated he had been sick that day and he and his wife had gone
 to bed. He noted nothing unusual in the area prior to the fire.

unknown(gold'colonial home, north side Town Point Road, west side of
 Port Herman Road) - no answer

unknown (blue bungalow, north side Town Point Road, west of Port Herman Road) -
 no answer.

#992 Town Point Road (blue 2-story, south side Town Point at Port Herman Road) -
 no answer

#984 town Point Road (south side Town Point near Port Herman Road) -

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 5
INVESTIGATION REPORT NO. 07-89-002
INVESTIGATOR David M. Herring, DCFM
DATE: 1-10-89

Mrs. Barbara Lagano stated she and her family were asleep and her bedroom is on the front (Town Point) side of the house. She stated the first knowledge she had of a problem was hearing a piece of apparatus responding by her house. She stated she knew of nothing unusual in the area prior to the fire.

The writer made a drive through tour of the Greenbrier subdivision and it is felt none of the houses are in a position to observe the Marina. No contacts were made in Greenbrier on 1-9-89.

David M. Herring
Deputy Chief Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 9

INVESTIGATION REPORT NO. 07-89-002

INVESTIGATOR S. Richard Powell, Deputy Fire Marshal

DATE: 1-16-89

This writer spoke to Mr. Donald Schubert on the phone at 1700 hours.
He stated that he was down to go hunting. His dog woke him up and he had
been outside. He came back into the house and was on the sofa when he looked
down-river and saw what looked like a fire. He called the fire department on
the 398-1350 number and spoke to a lady. He described to her what he saw and
where he thought it was. He stated it looked like a fire and appeared to be in
the Marina close to the bridge - the first Marina in. At that time he watched
and it was the longest time before he saw flashing lights. He also lost sight
of the Marina because of the snow that was falling. He stated this all took place
after 0200 - 0230 or 300 hours.

S. Richard-Powell
Deputy Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 10

INVESTIGATION REPORT NO. 07-89-002

INVESTIGATOR S. Richard Powell, Deputy Fire Marshal

DATE: 1-16-89

The writer interviewed Mr. Kenneth Kahn, owner of boat F-15. He stated
that the boat was winterized by the yard. He had a drop light in the engine
compartment. He was last on the boat on December 25, 1988. At this time there
was a tan on the door from the yard stating it had been winterized and also a note
on the electrical panel box in the boat.

The boat was bought July, 1988 and was a 1988. It was bought from
Jackson Marina through GMAC Finance Corp. He had the boat to Jackson Marina for
EXTRA ELECTRICAL GEAR TO BE INSTALLED.

There should have been someone on the boat since December 25 because the
Marina is to check the boat once a week.

The boat was equipped with a fire system in the engine compartment.

S. RICHARD POWELL
Deputy Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 11

INVESTIGATION REPORT NO. 07-89-002

INVESTIGATOR S. RICHARD POWELL, Deputy Fire Marshal

DATE: 1-17-89

The writer interviewed Mr. Harry Taylor of Earlville, Md. Mr. Taylor works for the State Highway Department of Maryland out of the Cecilton yard. The night of the fire he was on snow watch and his area is 213 north from Cecilton to Chesapeake City. On January 6, 1989 at around 0230hours he crossed the Bohemia Bridge at Hacks Point. You can see the Marina down the river from the bridge. He stated that as he looked down river to the Marina he could see the light of the Marina and something that looked like a flashing light - he could not make out where it was from the bridge. He went on his way and when he was working around the Chesapeake City area later the fire department went out to the fire at the Marina.

S. RICHARD POWELL
Deputy Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 14
 INVESTIGATION REPORT NO. 07-89-002
 INVESTIGATOR David M. Herring, Deputy Chief Fire Marshal
 DATE: 1-18-89

At the request of DFM Powell, the writer proceeded to Shamrock Electrical Co.,
 Commerce Drive, Easton, MD., concerning the electrical circuit breakers on F dock
 of the above referenced loss.

It was learned that Shamrock had done the initial installation of the electrical
 service and each boat slip was equipped with a General Electric internal common trip
 circuit breaker, 50 amp capacity.

The writer inspected a GE 50 amp breaker and confirmed the following through
 Shamrock employees:

1. When the breaker is "on" a small stripe of white is visible on the pivot
 point of the breaker switch.
2. When the breaker is "off" a small green stripe is visible on the breaker
 switch.
3. When the breaker has "tripped", the switch arm should be in the center
 position with a small amount of play in the switch and neither the green or
 white colored stripe is visible.
4. If the breaker has tripped and someone pushes the switch toward the
 off position, it will reset, and no evidence of it having previously tripped
 will be present.

David M. Herring
 Deputy Chief Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHALSUPPLEMENTAL REPORT NO. 6INVESTIGATION REPORT NO. 07-89-002INVESTIGATOR S. Richard Powell, Deputy Fire MarshalDATE: 1-11-89

This writer interviewed Kenneth F. Reed, w/m, 620 Mt. Nebo Road, Chesapeake city. Mr. Reed stated Mr. Earl Woodall or North Chesapeake City had gotten stuck on the levee and had come to pull his vehicle out. While doing this he got stuck. Glen L. Lupeer, w/m 237 West Main Street, Cecilton came along. They could not pull him out. At this time they went to Bohemia Vista Marina. They got Augustus B. Moore, 1056 Town Point Road to take his big truck and pull them out. The police were there or had been there. They got into the big truck and went over to Bohemia Bay before going and pulling their vehicle out of the mud on the levee

Investigation to continue.

S. RICHARD POWELL
DEPUTY FIRE MARSHAL.

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 7
INVESTIGATION REPORT NO. 07-89-002
INVESTIGATOR S. Richard Powell, Deputy Fire Marshal
DATE: 1-11-89

Reinterviewed the night watchmen of the yard. he stated he drove down to the offi
and checked the door on this building and then the dock area A, B and C. He drove
to the other side of the yard and walked docks D, E, F and G, then H and I. He came "
back to the shop area and checked the shop then went to his home at the top of the
hill. He lives in a house on the Marina property.

He does not keep a log of the times he checks the Marina or if he finds anything
wrong. Did have some problems the early part of the year. A fence was put up
along the housing area and-woods and this stopped.

Thursday night there were no cars in the parking lot and no one that he knows
of was on the boats. He has worked at the yard for almost a year.

Investigation to continue.

S. RICHARD POWELL
Deputy Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 8

INVESTIGATION REPORT NO. 07-89-002

INVESTIGATOR S. Richard Powell, Deputy Fire Marshal

DATE: 1-14-89

The writer interviewed Ernest Storr downer of Boat **F-16 49'** Gulfstar named "Porscheman". Present at the time of the interview were Raymond T. Letulle, attorney for Reliance Insurance, Richard Rzasa, claim representative for Reliance Insurance and Lawrence J. Dove, fire origin and cause representative for Reliance.

Mr. Storr stated he had winterized his own boat for the winter. He had a portable heater on board - it was one of those oil filled like a radiator and was plugged directly, no extension cord was used, and was located in the galley. It was used when the boat was not in use.

Mr. Starr was last on the boat on December 31 to January 1, 1989 for the weekend. There was shore power to the boat to run the pump and power converter for the boat had Halon system on motor compartment. He had no problems with the boat. He was not past due for any payments to date and financed the boat through First Pennsylvania Bank, P.O..Box 2068-894 of Philadelphia PA.

Mr. Stoor was asked a second time about the heater - if it was one and he stated he used it when he was not on board the boat.

Mr. Latulle asked if we had had fires on boats and other places where this type of heater was in use and was told that we have had fires on boats and also buildings but were unable to tell if they were directly a result of the fire

When asked if the writer had made a statement that the fire started on Mr. Storr's boat the writer advised Mr. Latulla that this writer has made no such statement - his client's boat is amog the five that are in the area or origin but we will not know until all the boats are brought out of the water where the

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 8
INVESTIGATION REPORT NO. 07-89-002
INVESTIGATOR S. Richard Powell, Deputy Fire Marshal
DATE: 1-14-89

fire started - then we will be able to tell.

The writer was advised that if any other information is needed from Mr. Storr that Mr. Letulle will be contacted.

Investigation to continue.

S. RICHARD POWELL
Deputy Fire Marshal

STATE OF MARYLAND
OFFICE OF THE FIRE MARSHAL

SUPPLEMENTAL REPORT NO. 12

INVESTIGATION REPORT NO. 07-89-002

INVESTIGATOR S. Richard Powell Deputy Fire Marshal

DATE: 1-17-89

This writer spoke to Mr. Theodore Petrick by telephone from the Marina.
He stated his boat is a 1985 43' Californian and he paid around \$275,000.00 for the boat. The boat was winterized by his people. He stated he had a space heater on the boat for head and had stayed on the boat the week-end before Christmas - December 18th. He had twin-halon system in the motor. He had no mechanical problems and less than 125 hours on the motor. He stated he would bring a picture of the boat down to the Marina.

S. RICHARD POWELL
Deputy Fire Marshal