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NUCLEAR SHIP SAVANNAH

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KANSAS STATE UNIVERSITY

HEARING

BEFORE THE

SUBCOMMITTEE ON MERCHANT MARINE

OF THE

COMMITTEE ON COMMERCE

UNITED STATES SENATE

NINETY-FOURTH CONGRESS

SECOND SESSION

ON

S. 2142

TO AUTHORIZE THE SECRETARY OF COMMERCE TO TRANSFER THE NUCLEAR SHIP SAVANNAH TO PATRIOT'S POINT DEVELOPMENT AUTHORITY, AN AGENCY OF THE STATE OF SOUTH CAROLINA

FEBRUARY 20, 1976

Serial No. 94-67

Printed for the use of the Committee on Commerce



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CONTENTS

	Page
Opening statement by Senator Hollings-----	1
Text of S. 2142-----	2
Agency comments:	
Energy Research and Development Administration-----	2
Department of the Navy-----	3

LIST OF WITNESSES

Hyatt, Charles, chairman, Patriot's Point Development Authority, Charleston, S.C.; accompanied by Frank K. Sloan, legal counsel; and Adm. Herman J. Kossler, executive director-----	3
Prepared statement-----	6
Stryker, Russell, Assistant Administrator for Policy and Administration, Maritime Administration, Department of Commerce; accompanied by Mr. Morris, legal counsel; and Robert Reid, chief, Operating Reactors Branch No. 4, Division of Operating Reactors, Nuclear Regulatory Commission; accompanied by Leo Slaggie, general counsel-----	16

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

Anders, William A., Chairman, U.S. Nuclear Regulatory Commission, letter of September 9, 1975-----	28
Briefing summary on use of NS <i>Savannah</i> as part of Patriots Point, S.C., report-----	79
Cash flow projections—Phase I, Patriots Point Naval and Maritime Museum, Charleston Harbor, S.C., study-----	55
Financial projections—Operation of NS <i>Savannah</i> at Patriots Point, Charleston Harbor, S.C., study-----	40
Planning data for use in the NS <i>Savannah</i> at Patriots Point, S.C., report-----	60
Shealy, Heyward G., director, Division of Radiological Health, South Carolina Department of Health and Environmental Control, letter of September 29, 1975-----	37
Thurmond, Hon. Strom, U.S. Senator from South Carolina, statement-----	1

CONTENTS

1 Chapter Chairman, Public Health Administration, Department of Health, Education and Welfare, Washington, D.C. 20001
2 Test of 2-11-77
3
4
5
6
7
8
9
10

LIST OF WITNESSES

11 Dr. Charles Johnson, Public Health Administration, Department of Health, Education and Welfare, Washington, D.C. 20001
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
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46
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67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
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180
181
182
183
184
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187
188
189
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191
192
193
194
195
196
197
198
199
200

NUCLEAR SHIP SAVANNAH

FRIDAY, FEBRUARY 20, 1976

U.S. SENATE,
COMMITTEE ON COMMERCE,
SUBCOMMITTEE ON MERCHANT MARINE,
Washington, D.C.

The subcommittee met at 2 p.m., pursuant to call, in room 5110 Dirksen Senate Office Building, Hon. Ernest F. Hollings, presiding.

OPENING STATEMENT BY SENATOR HOLLINGS

Senator HOLLINGS. The committee will please come to order.

Last July my colleagues, Senator Thurmond and I introduced S. 2142, a bill to authorize the Secretary of Commerce to transfer the nuclear ship *Savannah* to Patriot's Point Development Authority, an agency of the State of South Carolina. The ship, which has been in layup status since 1970, would be included in the merchant marine portion of the Patriot's Point Memorial and Museum. Similar legislation was introduced in the House of Representatives by the distinguished Congressman of the First District, Mendel J. Davis, who is with us and will be seated with the committee this afternoon. We welcome Congressman Davis to our committee and his leadership and interest has been vital to our proceeding in an orderly fashion.

We will also leave the record open for my senior colleague, Senator Thurmond's statement it will be included in the record.

On November 20, 1975, the Subcommittee on Merchant Marine of the House Merchant Marine and Fisheries Committee held a hearing on that bill, H.R. 8741.

Since that time officials of the Patriot's Point Development Authority have met with officials of the Maritime Administration of the Department of Commerce and the Nuclear Regulatory Commission in an effort to resolve various difficulties regarding this proposal. I have convened this meeting of the Merchant Marine Subcommittee this afternoon to get this entire matter on the record and to receive testimony from the Federal agencies involved.

[The statement, bill, and agency comments follow:]

STATEMENT OF HON. STROM THURMOND, U.S. SENATOR FROM SOUTH CAROLINA

Mr. Chairman: In the summer of 1972, the General Assembly of the State of South Carolina established a Committee to determine if a Naval Museum should be established in South Carolina. The Committee made a report to the Governor and General Assembly in January 1973, recommending that a Museum be established in Charleston, on approximately 500 acres of land, bordering on Charleston Harbor, to be known as Patriot's Point.

The Committee also recommended that a state authority be established to build the Museum and to develop the remainder of Patriot's Point. The Gen-

Staff member assigned to this hearing: Richard J. Daschbach.

eral Assembly passed a bill creating the Patriot's Point Development Authority, and it was signed by Governor John C. West in April 1973.

On February 28, 1975, the United States Senate Passed S. Con. Res. 9, a Resolution supporting the establishment of a Naval and maritime Museum at Patriot's Point. This Resolution is presently under consideration by the House Armed Services Committee, in the Subcommittee for Military Installations. It gives me great pleasure to report to the subcommittee that the Museum is progressing well. The Museum officially opened on January 3, 1976, and has presently reported over 20,000 visitors.

The Museum is to be comprised substantially of a series of decommissioned ships, the first of which is the aircraft carrier USS Yorktown.

The N.S. Savannah, the world's first nuclear powered merchant vessel would be an important educational addition to the Museum and would tell its *Maritime Story*. In 1973, the City of Savannah, Georgia, proposed to support the N.S. Savannah as an Historic Museum. Unfortunately, that city was unable to make the necessary legal and financial arrangements. The Savannah was then docked at the Army Depot at Charleston and is now scheduled to be transferred to the Reserve Merchant Fleet at Norfolk, Virginia, in late March.

Mr. Chairman, on July 21, 1975, the distinguished Junior Senator from South Carolina, who is a member of the Merchant Marine Subcommittee, and I introduced S. 2142, which the subcommittee is considering today. I hope the subcommittee will act expeditiously on this important piece of legislation which will mean so much to the State of South Carolina.

[S. 2142, 94th Cong., 1st Sess.]

A BILL To authorize the Secretary of Commerce to transfer the nuclear ship Savannah to Patriot's Point Development Authority, an agency of the State of South Carolina

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That notwithstanding the provisions of section 510(j) of the Merchant Marine Act, 1936 (46 U.S.C. 1160(j)), the Secretary of Commerce is authorized, within one year after enactment of this Act, to transfer to Patriot's Point Development Authority, an agency of the State of South Carolina, the nuclear ship Savannah without monetary consideration, to be used as a museum ship and for other public purposes, but not for transportation, together with such of her fixtures, tackle, apparel, furnishings, and equipment as the Secretary of Commerce, in his discretion, determines.

SEC. 2. In connection with the transfer of the vessel authorized by section 1 of this Act, the Secretary of Commerce is authorized to pay the reasonable cost of towing the vessel to a site at Patriot's Point in Charleston harbor, South Carolina.

SEC. 3. Upon transfer of the vessel authorized by section 1 of this Act, the Nuclear Regulatory Commission is authorized to make appropriate agreements with agencies of the State of South Carolina to provide for control and disposition of the nuclear reactor materials remaining in the vessel, as required by law.

U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION,
Washington, D.C., November 28, 1975.

HON. WARREN G. MAGNUSON,
Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.

DEAR MR. CHAIRMAN: The Energy Research and Development Administration (ERDA) is pleased to respond to your letter of July 31, 1975, requesting our views and recommendations with respect to S. 2142, a bill "[t]o authorize the Secretary of Commerce to transfer the nuclear ship Savannah to Patriot's Point Development Authority, an agency of the state of South Carolina."

Since ERDA has no direct programmatic interest in the N.S. Savannah, we would have no objection to its transfer as proposed in the bill. However, we defer on the bill's merits with respect to the transfer to the views of other interested agencies, in particular the Maritime Administration; with respect to the control and disposition of the nuclear materials remaining in the N.S. Savannah, we defer to the views of the Nuclear Regulatory Commission which, since the effective date of the Energy Reorganization Act of 1974, Public Law 93-438, has jurisdiction over such matters.

The Office of Management and Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely,

R. TENNEY JOHNSON,
General Counsel.

DEPARTMENT OF THE NAVY,
OFFICE OF LEGISLATIVE AFFAIRS,
Washington, D.C., November 28, 1975.

HON. WARREN G. MAGNUSON,
*Chairman, Committee on Commerce,
U.S. Senate,
Washington, D.C.*

DEAR MR. CHAIRMAN: Your request for comment on S. 2142, a bill "To authorize the Secretary of Commerce to transfer the nuclear ship Savannah to Patriot's Point Development Authority, an agency of the State of South Carolina," has been assigned to this Department by the Secretary of Defense for the preparation of a report expressing the views of the Department of Defense.

The purpose of the bill is to transfer, without monetary consideration, the nuclear ship Savannah together with such of her fixtures, tackle, apparel, furnishings and equipment as the Secretary of Commerce, in his discretion, determines to the Patriot's Point Development Authority for use as a museum ship. The bill also authorizes the Secretary of Commerce to pay the reasonable cost of towing the vessel to Charleston Harbor, South Carolina, and it authorizes the Federal Nuclear Regulatory Commission to make appropriate agreements with agencies of the State of South Carolina to provide for control and disposition of the nuclear reactor materials remaining in the vessel.

The Department of Defense has no direct interest in the nuclear ship Savannah. Therefore, the Department of the Navy, on behalf of the Department of Defense, defers to other executive agencies more directly concerned with S. 2142.

Enactment of S. 2142 would result in no cost to the Department of Defense.

This report has been coordinated within the Department of Defense in accordance with procedures prescribed by the Secretary of Defense.

The Office of Management and Budget advises that, from the standpoint of the Administration's program, there is no objection to the presentation of this report on S. 2142 for the consideration of the Committee.

For the Secretary of the Navy.

Sincerely yours,

T. F. HAIRSTON,
*Captain, MGC, U.S. Navy,
Director, Legislation.*

Senator HOLLINGS. This afternoon we will hear first from the Patriot's Point representatives and after they have concluded I will ask the Maritime Administration and then the Nuclear Regulatory Commission officials to respond. We will be glad to hear Mr. Hyatt, the chairman of the Patriot's Point Development Authority. You and your colleagues come forward to the witness table, please. We welcome you to the hearing and this is almost like a domestic proceeding—until we have a hearing we can't get the parents together or find out what keeps them apart and what the issues are.

Mr. Hyatt, we'll be glad to hear from you at this time.

STATEMENT OF CHARLES HYATT, CHAIRMAN, PATRIOT'S POINT DEVELOPMENT AUTHORITY, CHARLESTON, S.C.; ACCOMPANIED BY FRANK K. SLOAN, LEGAL COUNSEL; AND ADM. HERMAN J. KOSSLER, EXECUTIVE DIRECTOR

Mr. HYATT. Senator Hollings and Congressman Davis, we appreciate very much this opportunity to come before your committee and

to talk about saving the N.S. *Savannah*. I would like to read, sir, from our enabling legislation if you don't mind section 6 of our legislation.

The authority is created as an instrumentality of the State for the accomplishment of the following general purposes, all or any of them, which are intended to broaden and not to restrict any other powers given to it in this act, namely :

(1) To develop and improve the Patriot's Point area to provide a place of education and recreation to foster among the people pride and patriotism in our Nation and its heritage;

(2) To establish and develop a national naval museum of ships, naval and maritime equipment, artifacts, books, manuscripts, art, and historic materials for the education and enjoyment of the people of our Nation and to instill in them a knowledge of our naval and maritime history; and of the importance of sea power to our economy and defense;

(3) To foster and stimulate national and international travel to and participation in the development of Patriot's point, by acquiring, constructing, equipping and maintaining museum buildings, seaquariums and laboratories, public exhibits and entertainment facilities, historical monuments and sites; and providing lodging and accommodations for travelers by land or water to Patriot's Point;

(4) To cooperate with the State of South Carolina and the United States of America, and any agency or any department, corporation or instrumentality thereof, in the maintenance, development, improvement and use of Patriot's Point and all its functions;

(5) To accept funds, other assets and services from Charleston County and municipalities located therein and the State of South Carolina and to use them in such manner, within the purposes of the authority, as shall be stipulated by the county or the State in any matter coming within the general purposes of the authority;

(6) To act as agent for the United States of America, or any agency, department, corporation or instrumentality thereof, in any matter coming within the purposes of the authority;

(7) In general to do and perform any act or function which may tend to or be useful toward the development and improvement of Patriot's Point.

Senator HOLLINGS. Very good. Admiral Kossler.

Admiral KOSSLER. I would like to thank you, Senator Hollings, and the members of your committee for holding this hearing today and for helping us to come to a speedy decision on the *Savannah*.

It's a great honor and pleasure for me to appear before you on behalf of the Patriot's Point Development Authority. I have submitted a formal statement to you and rather than read it I would like now to give you a brief of this statement.

Senator HOLLINGS. The statement in its entirety will be included, and you can highlight or summarize it as you wish.

Admiral KOSSLER. Thank you.

We have studies on the *Savannah* made by Albert Levy Associates and Laventhol & Horwath and they have concluded that the addition of the *Savannah* at Patriot's Point is both desirable and feasible. Copies of these studies have been submitted for the record.¹

The authority has endeavored to make it clear right from the beginning that no funds were available to the authority to moor the *Savannah* at Patriot's Point and therefore unless Federal funding approximating \$1 million was received it would not be possible to accept the *Savannah*.

In my formal statement I have given some background information on Patriot's Point and the *Yorktown*. There's a brief financial statement showing that we have received about \$450,000 from State appro-

¹ See p. 40.

priations and \$120,000 in grants and \$3 million from a bond issue totaling \$3.6 million. However, we must repay the \$3 million to the State and we will do that in the next 10 to 20 years.

Also, you have the attendance figures. Since the *Yorktown* was opened to the public on January 3, 1976, we have had approximately 14,000 aboard the *Yorktown* in January and another 8,000 so far in February. So we have gone over the 22,000 mark since opening *Yorktown* to the public.

Two plans have been discussed for the disposition of the *Savannah*. First would be an outright donation and Patriot's Point would assume all responsibility for the ship, including the ultimate disposition of the reactor chamber. However, an agreement has never been reached on who would be responsible for the chamber in the donation sort of plan. Under this plan ballast would be added to the *Savannah* until she rested on the bottom. Sand would be piled around her as was done on the *Yorktown*.

In the second plan, two different ideas were discussed. The first idea was to make Patriot's Point a reserve fleet site, with the Maritime Administration assuming the financial responsibilities that they would normally have if *Savannah* was in Beaumont or the James River Reserve Fleet. The second idea which seems to be more acceptable to them is to lease the *Savannah* to Patriot's Point. Under this plan, she would be moored in a floating condition and the Federal Government would still own the *Savannah* and would retain responsibility for the reactor. Patriot's Point, with certain restrictions and requirements, will then operate the *Savannah* as a museum. Cost of mooring is attached to submission to you, sir, together with an artist's rendition of how the *Savannah* would be moored at Patriot's Point, and there's a rendition also up there, sir.

At a meeting last Tuesday here in Washington, the Maritime Administration announced that in late March they would commence preparing *Savannah* for her entry into the Reserve Fleet. They indicated that this could be delayed if it appeared Patriot's Point might qualify for Federal funds. Coastal Plains representatives stated that approximately \$210,000 would be made available to Patriot's Point if officially requested by Governor Edwards. Although no commitments were made on EDA funds, it was stated that once the enabling legislation is passed and the application for EDA funds submitted, quick action will be taken to determine if funds totaling about \$600,000 can be made available to Patriot's Point.

Mr. Frank Sloan, sitting on my right, counsel to the Patriot's Point Development Authority, has discussed leasing arrangements with the Maritime Administration and is available to answer any questions on this subject.

There appears to be agreement in principle that the ship can be leased to the authority rather than donated outright. This would solve the major problem of responsibility for final disposition of the reactor chamber. It also appears that the authority would be relieved of the responsibility of major hull maintenance during the term of the lease because this would make the cost of using the *Savannah* as a museum prohibitive.

We believe the *Savannah* is of definite historical value since it is the first nuclear merchant ship built in America. The Maritime

Museum would be built in one of the cargo holds of the *Savannah* rather than in a building ashore. The *Savannah* could be used to demonstrate the peaceful use of atomic energy and to demonstrate how cargo is handled on the ship and from the pier to the ship. Twenty-five or 30 years from now, when our Merchant Marine could be all nuclear powered, we at Patriot's Point could have on display the first American merchant ship of this type.

The alternatives seem to be to put *Savannah* in mothballs, sell her for scrap, or donate her to a museum. We believe that the first two alternatives would be a shameful waste of this historic ship. Therefore, donating the *Savannah* to a museum seems to us to be the best alternative.

Both Governor Edwards and our chairman, Mr. Charles Hyatt, are former Maritime officers. They hope, as do all the members of the Patriot's Point Development Authority, that provided the enabling legislation is passed, and Federal funding becomes available, the *Savannah* will become part of the Naval and Maritime Museum at Patriot's Point.

Thank you very much, sir.

[The statement follows:]

STATEMENT OF HERMAN J. KOSSLER, USN (RET), EXECUTIVE DIRECTOR, PATRIOT'S POINT

In order to help preserve our American Heritage, South Carolinians are building a Naval and Maritime Museum at Patriots Point in Charleston. It is their hope that this Museum will help to remind Americans of how important the seas are to our economy and to our security, and to convince them of the necessity to maintain a strong Navy and Merchant Marine.

The goal of the Patriots Point Development Authority right from the beginning was to acquire an Aircraft Carrier, since her Hangar Deck would be an appropriate place for a Naval and Maritime Museum. Efforts to obtain the Yorktown were successful, and on 9 June 1975 she departed Bayonne, New Jersey, under tow for Charleston, where she arrived on 15 June and received a tremendous reception. A picture of her arrival is attached. She was dedicated as the first ship of the Naval and Maritime Museum on 13 October 1975, and opened to the public on 3 January 1976. Even though the tourist season does not open in Charleston until March, we have still gotten off to a good start at Patriots Point as the attached figures indicate.

In addition to the three million dollar bond issue which we obtained to bring the Yorktown to Charleston, the State has appropriated approximately \$452,000 since the Patriots Point Development Authority was established in 1973. We have also received grants totalling about \$123,000. Attached is an itemized list of the funds we have received, together with a break down of some of our major expenditures.

Since the Authority has the mission to develop a Maritime, as well as a Naval Museum, consideration had been given to constructing a building ashore for this purpose. However, the possibility of utilizing the *Savannah* for the Museum, rather than a building ashore, has become a very attractive alternative.

Studies have been made by Levy Associates and Laventhol and Horwath to determine the feasibility of mooring the *Savannah* at Patriots Point. These studies concluded that the addition of *Savannah* as the first Merchant vessel in the Naval and Maritime Museum was both desirable and feasible, and would present no radio active hazard to the public. However, since the beginning of consultations on the *Savannah*, the Patriots Point Development Authority has made it clear that unless funds approximating one million dollars were received, the project could not be undertaken.

At a meeting held here in Washington on 17 February with members of the South Carolina Delegations and representatives from interested agencies, the following information was obtained:

1. The Maritime Administration in late March would commence preparing the N. S. *Savannah* for her entry into the Reserve Fleet. However, this could

be delayed should information be received that funds could possibly become available to the Patriots Point Development Authority to moor the Savannah at Patriots Point. Furthermore, the Maritime Administration indicated a willingness to look into the feasibility of leasing rather than donating the Savannah.

2. If Governor Edwards of South Carolina recommends in writing that funds be made available to help in the financing, Coastal Plains funds approximating \$210,000 will be made available to the Patriots Point Development Authority.

3. Once the enabling Legislation is passed, and the application for EDA funds has been submitted, quick action will be taken to determine if funds totalling about \$600,000 can be made available to the Patriots Point Development Authority.

Two plans have been discussed for the disposition of the Savannah. First would be an outright donation, in which Patriots Point would assume all responsibility for the ship, including the ultimate disposition of the reactor. However, an agreement was never reached on who would have this disposition responsibility. Under this plan ballast would be added to the ship until she rested on the bottom, and sand piled around her as was done to Yorktown.

The second plan would be to lease the Savannah to Patriots Point. She would then be moored in a floating condition. The Federal Government would still own the Savannah, and would retain responsibility for the reactor. Patriots Point, with certain restrictions and requirements, would then operate the Savannah as a museum. The cost of mooring under both of these plans is attached, together with an artist's rendition of how the Savannah would be moored at Patriots Point.

We believe that the Savannah is of definite historic value since it is the first nuclear merchant ship built in America. The Maritime Museum would be built in one of the cargo holds of the Savannah, rather than in a building ashore. The Savannah could be used to demonstrate the peaceful use of atomic energy, and to demonstrate how cargo is handled. And we feel it would play an important role in reminding all Americans of the importance of the seas to our survival. Twenty five or thirty years from now when our Merchant Marine could be all nuclear powered, we at Patriots Point could have on display the first American Merchant Ship of this type.

Since there is apparently no further commercial or government use for the Savannah, the alternative seems to be to put her in mothballs, sell her for scrap, or donate her to a Museum. We believe that the first two alternatives would be a shameful waste of this historic ship. Therefore, donating the Savannah to a Museum seems to us to be the best alternative.

Both Governor Edwards and our Chairman, Mr. Charles F. Hyatt, are former Maritime Officers. They hope, as do all the members of the Patriots Point Development Authority, that provided the enabling legislation is passed, and federal funding becomes available, the Savannah will become part of the Naval and Maritime Museum at Patriots Point.

Mr. Frank Sloan, Counsel to the Patriots Point Development Authority, has discussed leased arrangements with the Maritime Commission, and is available to answer any questions concerning this subject. It appears to be agreed in principle that the ship can be leased to the Authority rather than donated outright. This would solve the major problem of responsibility for final disposition of the reactor chamber. It also appears that the Authority would be relieved of the responsibility for major hull maintenance during the term of the lease, because this would make the cost of using Savannah as a museum prohibitive.

I have the following documents with me which I would like to submit to you to be made part of the record:

1. Report by the Director of the South Carolina Division of Radiological Health which concludes that the Savannah can be moored at Patriots Point without jeopardy to the health and safety of the public.

2. Financial study conducted by Laventhol and Howath.

3. Feasibility study conducted by Albert Levy Associates, Inc.

4. List of Work Items that the Patriots Point Development Authority requests the Maritime Administration to accomplish.

N.S. SAVANNAH WORK LIST

Prior to making the Savannah available to the Patriots Points Development Authority, it is requested that the Maritime Administration have the following work accomplished:

1. Removal of the contaminated water, and if feasible, resins and other loose contaminated material.

2. Clean Engine Department Spaces.
 3. Clean Vessel.
 4. Exterior Cleaning and Coating.
 5. Scrape and paint Promenade Deck overhead, starboard side.
 6. Scrape and paint Promenade Deck overhead, port side.
 7. Scrape and paint Promenade Deck Rails and Gates, port and starboard sides.
 8. Scrape after Boat Deck Overhang Splash Plate.
 9. Scrape and paint After Deck.
 10. Scrape and paint Weather Deck Fire Hose Cabinets and Doors.
 11. Scrape and paint Boat Deck and Fish Plate, port and starboard sides.
 12. Scrape and paint Dummy Stack Exterior.
 13. Scrape and paint Flying Bridge.
 14. Scrape and paint Anchor Windlass and Foundation.
 15. Renew gasket on Watertight Door Nitrogen Cylinder Storage Room, scale and paint deck.
 16. Fabricate and install cover on swimming pool and blank water piping.
 17. Remove and renew portlight glass, Boatswain shop aft.
 18. Complete the closure of two overboard suction and discharges left operable to permit operation of Auxiliary generators.
- In addition to the above work list, it is requested that all spare parts, linens, dishes, silverware and other items belonging to the Savannah, but now in storage ashore, be returned to the ship.

HERMAN J. KOSSLER,
RADM USN (Ret.),
Executive Director.

FUNDS AND MAJOR EXPENDITURES

1. The Patriots Point Development Authority was established by the General Assembly in April 1973, and the following funds have been appropriated by the State since that date:

Fiscal year:

1974.....	\$100, 000
1975.....	104, 760
1976.....	247, 664

2. The following grants have been received:

City of Charleston.....	\$15, 000
Bicentennial.....	10, 000
Law enforcement.....	29, 235
Coastal Plains (Yorktown).....	28, 500
Coastal Plains (Savannah).....	40, 000

3. The full faith and credit backing of the State was given to the Authority for a three million dollar bond issue to bring the Aircraft Carrier Yorktown to Charleston and prepare her for visitors. Most of these funds are now expended, with the following major expenditures:

Purchase of 210 acres of land.....	\$255, 000
Atkinson Co.—dredging.....	656, 000
Ruscon Construction—pier, causeway.....	1, 032, 000
Dupre Construction—utilities.....	368, 000
Ferguson/Fulghum—paint Yorktown.....	161, 000
Red Star Towing—New Jersey to Charleston.....	52, 000

ESTIMATED COSTS FOR INSTALLING THE N. S. SAVANNAH AT PATRIOTS POINT

*Flooding down**Work to be performed:*

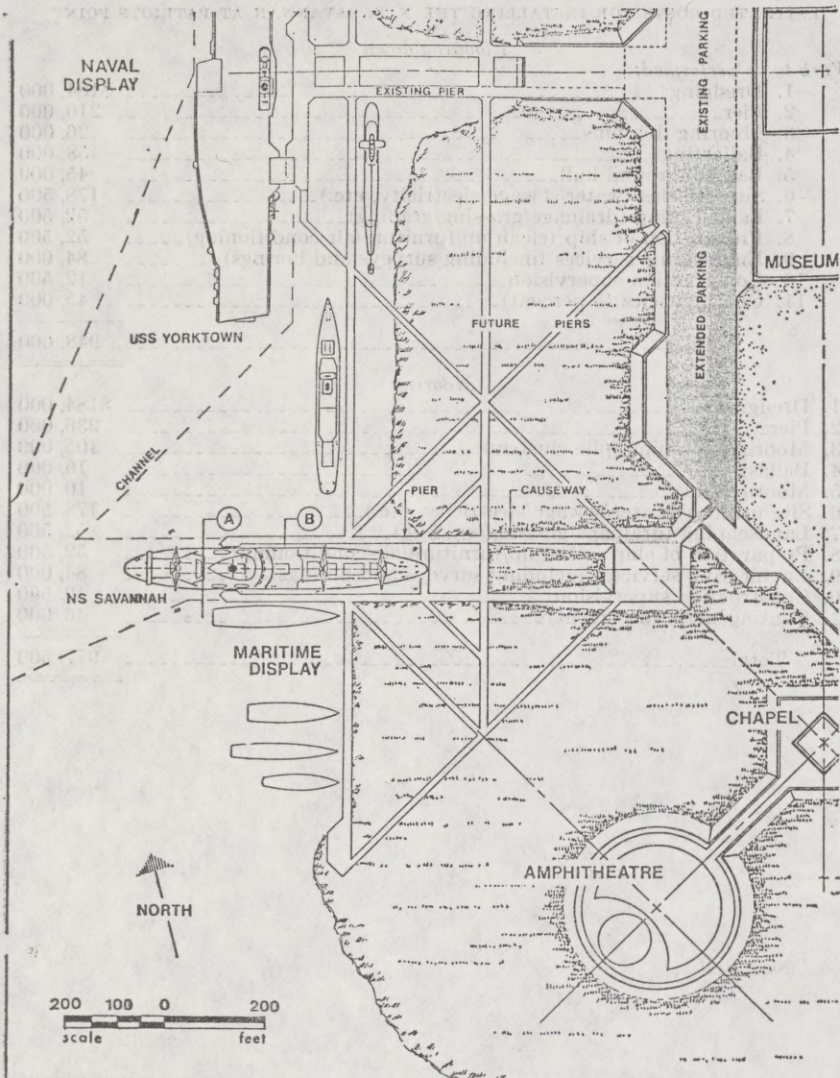
1. Dredging	\$184,000
2. Pier	210,000
3. Mooring dolphins	26,000
4. Ballasting	58,000
5. Backfill around hull	45,000
6. Site utilities (water/sewage/electricity, etc.)	178,500
7. Landscaping (drainage/grassing/grading)	52,500
8. Preparation of ship (clean up/furniture/air-conditioning)	52,500
9. Engineering services (including surveys and borings)	84,000
10. Construction supervision	12,500
11. Contingencies (5 percent)	45,000

Total 948,000

Mooring

1. Dredging	\$184,000
2. Pier	236,000
3. Mooring dolphins (pile clusters)	105,000
4. Ballasting	16,000
5. Mooring lines	10,000
6. Site utilities (water/sewage/electricity, etc.)	178,500
7. Landscaping (drainage/grassing/grading)	52,500
8. Preparation of ship (clean up/furniture/air-conditioning)	52,500
9. Engineering services (including surveys and borings)	84,000
10. Construction supervision	12,500
11. Contingencies (5 percent)	46,000

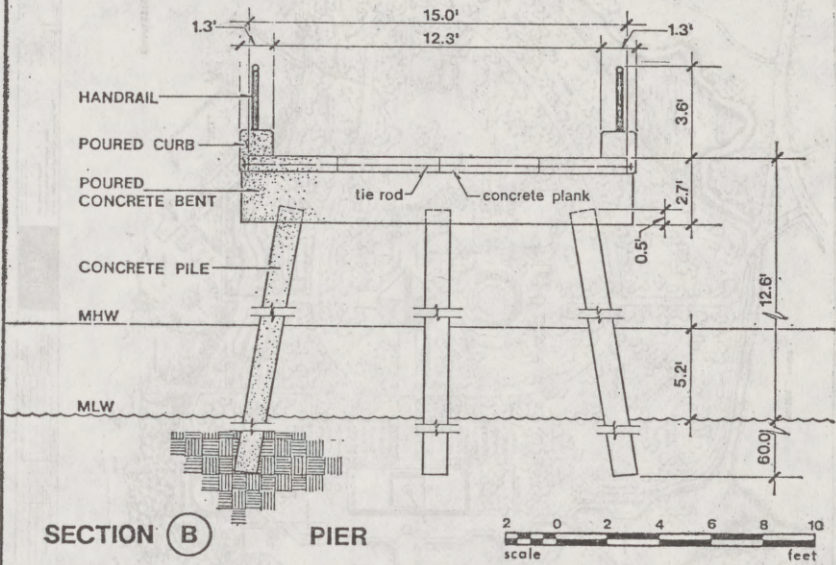
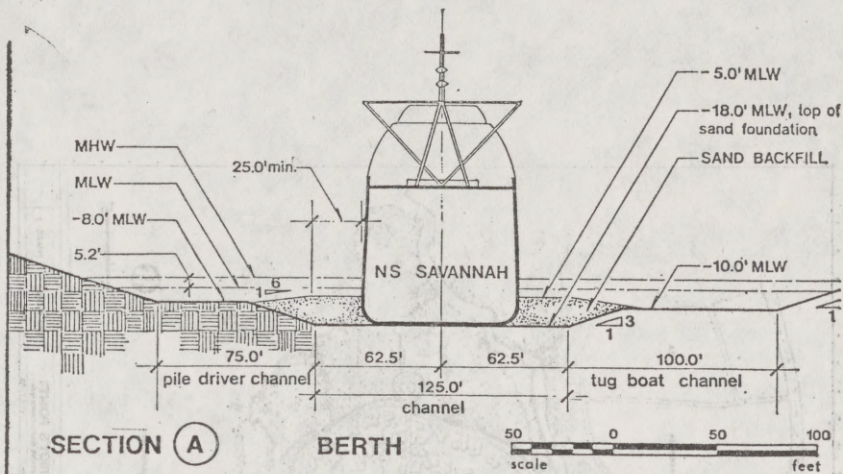
Total 977,500



LBC&W

SITE PLAN · NS SAVANNAH BERTH

DWG. 1



LBC&W

SECTIONS BERTH & PIER

DWG.

FEBRUARY

DATE	ADULTS		CHILDREN		UNDER 6-PASSES		MEN IN UNIFORM	M-PROTC	TOTAL VISITORS		TOTAL PAID VISITORS	TICKET SALES		GIFTSHOP SALES		
	TODAY	TO DATE	TODAY	TO DATE	TODAY	TO DATE			TODAY	TO DATE		TODAY	TO DATE	TODAY	TO DATE	TODAY
1	485	485	79	79	52	52	6		622	622	570	1055.00	1055.00	340.43	340.43	
2	69	554	4	83	1	53	1		75	697	644	139.00	1193.00	36.52	377.25	
3	100	654	59	142	11	64			170	867	803	234.75	1427.75	57.51	434.76	
4	79	733	3	145	3	67			85	952	885	161.00	1588.75	26.40	461.31	
5	97	830	28	173	13	80			139	1091	1011	215.75	1804.00	70.10	531.37	
6	134	964	27	200	17	97			178	1269	1172	266.75	2070.75	25.64	556.91	
7	510	1474	88	288	61	158	8	54	721	1490	1178	1116.00	3186.75	328.65	945.6	
8	872	2346	116	404	98	256	6	10 (M-PROTC)	1102	3092	2712	186.00	5052.75	348.85	1294.41	
9	85	2431	6	410	11	267	4		106	3198	2867	180.00	5232.75	52.68	1247.14	
10	111	2542	31	441	8	275			150	3348	3009	243.75	5476.50	96.27	1443.41	
11	99	2641	2	443	2	277			104	3452	3111	201.00	5677.50	57.49	1500.90	
12	208	2849	10	453	1	278			219	3671	3329	390.25	6067.75	52.32	1553.22	
13	129	2978	12	465	13	291			154	3825	3470	270.00	6337.75	90.66	1643.88	
14	746	3724	142	607	102	393	6	40	1036	4861	4364	639.00	7076.75	283.38	1927.26	
15	1376	5100	241	848	180	573	4		1801	6662	5985	2997.00	10073.75	701.40	2629.41	
16	266	5366	25	873	40	613			332	6994	6277	558.00	10631.75	193.64	2822.91	
17	130	5496	124	1002	10	623			269	7263	6536	556.50	11188.25	64.14	2887.0	
18	167	5663	42	1044	34	657			243	7506	6745	364.50	11552.75	105.25	2992.2	
19	183	5846	38	1082	16	673			272	7778	6966	393.00	11945.75	55.39	3047.6	
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31																
TOTAL																
THIS MONTH																
TOTAL	8229		3677		2361		30	333		14639	11945		20089.75		4179.0	
PERCENTAGE																
TO BUDGET																

Senator HOLLINGS. Admiral Kossler, you gave the confines and the alternatives and then said you agreed in principle with a lease rather than outright ownership by the authority of the *Savannah* could be obtained. I know you don't have a formal written lease. We had hoped to have had that, but you pretty nearly have, as is my understanding from talking to committee counsel who has been in conference with Mr. Sloan. Could either you or Mr. Sloan answer that? Do you have an agreement with Marad unofficially at this point that they will lease it to the Patriot's Point Authority rather than insisting upon transferring absolute title?

Mr. SLOAN. We do, Mr. Chairman.

Senator HOLLINGS. We do what?

Mr. SLOAN. We do have a general understanding that they will lease the ship to us. We have since Tuesday negotiated details of the lease proposal to the degree it was possible to obtain agreement in that period of time. We do have general agreement as to a leasing arrangement. There are details and one major point that is yet to be determined before I could say to your committee that all of the lease questions have been solved.

Senator HOLLINGS. Let me be a little more specific. Using your language, I think, and of course, Mr. Russell Stryker, the assistant administrator, will be testifying right after you and he will tell us whether you're reading it right or whether he's agreeing or whether from a memorandum that says:

Patriot's Point Development Authority proposes the following provisions in the prospective lease of the *N.S. Savannah* to the authority by the Maritime Administration:

1. Consideration for the lease shall be for a nominal sum, as One Dollar per year, and the obligation of the authority to preserve and display the ship as a maritime museum during the term of the lease.

Is that generally agreed to?

Mr. SLOAN. It appears to be, sir.

Senator HOLLINGS. It appears to you, sir?

Mr. SLOAN. Yes, sir.

Senator HOLLINGS. And I will ask my colleague, Congressman Davis, to interrupt at any time here. I will yield in just a minute but we like the informality of this particular hearing so we can really get at what the facts are and what the agreement is.

2. The term of the lease shall be for a minimum of 5 and a maximum of 20 years, with options to renew for 5-year periods thereafter; subject to the right of Marad to require immediate return of the ship in time of use for national emergency.

Is that generally agreed to?

Mr. SLOAN. That word is a typographical error, Senator. It should be war or national emergency.

Senator HOLLINGS. I see. In time of war or national emergency they could immediately regain—since they have the title, possession of the vessel, and it says further in this paragraph of your memorandum:

Both parties shall have the right to terminate the lease at any time on one year's notice, after the expiration of the initial 5 year period.

You have discussed that?

Mr. SLOAN. It appears to be agreed in principle.

Senator HOLLINGS. Marad agrees in principle with that.

3. Upon termination of the lease, or any extension thereof, the disposition of the ship and nuclear materials aboard shall be the responsibility of the United States.

Is there agreement on that?

Mr. SLOAN. There appears to be.

Senator HOLLINGS. At one time in our informal discussions with Mr. Blackwell and other authorities there—in fact, we had one former administrator that blamed me for passing the antidumping bill. He said if I hadn't passed that he would do just that, take it out in the ocean and dump it. He said, in other words, they want to terminate that responsibility particularly with respect to the spent elements aboard the ship, the heavy water, I should say, but upon termination of the lease, in other words, the ultimate responsibility would still be with Marad and not Patriot's Point Authority?

Mr. SLOAN. That's correct.

Senator HOLLINGS. All right. Now let's go to this point 4 here.

During the term of the lease the authority shall be a co-licensee with Marad for the possession and control of nuclear materials aboard the ship, and the authority shall be responsible for the cost of monitoring and security of all nuclear materials and spaces contained in the ship.

Mr. SLOAN. Yes. That would mean, Senator, that the authority would be responsible for the monitoring at all times of the radiation level and to make sure all accesses to the nuclear chamber area are secured and that no one can get into them except the necessary inspection personnel and, as mentioned in the formal statement, the South Carolina Department of Health and Environmental Control under its agreement with the Nuclear Regulatory Commission has agreed to perform those monitoring and surveillance functions for the Authority in the event the *Savannah* is received.

Senator HOLLINGS. So the State authority could perform that at Patriot's Point and I have even heard that the NRC or the Marad had this capability also and could perform it perhaps for Patriot's Point and I think you're talking in the realm of \$3,000 or \$5,000 or what?

Mr. HYATT. Sir, if the South Carolina Environmental Control performs this service, we understand the fee will be very nominal.

Senator HOLLINGS. What do you mean by nominal? You're a big banker.

Mr. HYATT. Well, they mentioned \$100 a year.

Senator HOLLINGS. How much?

Mr. HYATT. \$100 a year they mentioned to us. I might say, sir, they are performing this function for the other reactors in the State now and, of course, cooperating with our agency. They are a part of the State government, too.

Senator HOLLINGS. Maybe I'm confusing this with the annual inspection, the total inspection of the vessel. That would be more than \$100, wouldn't it? Who would pay for that?

Mr. SLOAN. That's in a coming paragraph.

Senator HOLLINGS. You've got another paragraph here on the next page. I see. I will read on. I was going to ask about the maintenance costs.

Under paragraph 5 of your memo:

Prior to delivery of the ship to the authority Marad shall be responsible for the removal of all contaminated water (and other nuclear waste materials)

remaining in the ship, and for the sealing and securing of all contaminated or potentially hazardous spaces within the ship.

I find the phrase "and other nuclear waste materials" in parenthesis set off with a question mark. Have you agreed to that or not?

Mr. SLOAN. Yes, Senator. The reason for that is I don't know in fact, nor did we have in the time available to us, ability to discover, whether there was any other removable material except the heavy water which they already claimed to have removed. I don't know that there are any other nuclear waste materials.

Senator HOLLINGS. But Marad would agree if there are waste materials they don't have a problem with that you say?

Mr. SLOAN. It appears to be agreed in principle that that's what their intention is, to remove the water and any other removable waste material that there is.

Mr. HYATT. Or resins.

Senator HOLLINGS. I think I'm going to adopt a procedure that we use in the Budget Committee. Mr. Stryker, do you mind coming forward, please, sir; and Mr. Morris, the attorney, and then whoever is representing the Nuclear Regulatory Commission, can he come forward? We find in our own Budget Committee proceedings if we get all the parties around the table pro and con they can sort of answer and explain each other and we are not trying to promote an adversary proceeding but we are just trying to get what the facts are so we can make a recommendation and go ahead with this bill.

On that particular score, Mr. Stryker, what about other waste materials?

STATEMENTS OF RUSSELL STRYKER, ASSISTANT ADMINISTRATOR FOR POLICY AND ADMINISTRATION, MARITIME ADMINISTRATION, DEPARTMENT OF COMMERCE; ACCOMPANIED BY MR. MORRIS, LEGAL COUNSEL; AND ROBERT REID, CHIEF, OPERATING REACTORS BRANCH NO. 4, DIVISION OF OPERATING REACTORS, NUCLEAR REGULATORY COMMISSION; ACCOMPANIED BY LEO SLAGGIE, GENERAL COUNSEL

Mr. STRYKER. Senator Hollings, there are some demineralizers in the ship at this time which are intended to be removed at the time the water is drained. Our concern with this particular parenthesized piece is that there is, of course, residual contamination in some of the hardware that will remain aboard the ship. It's just a matter of clarity that I'm sure we can work out. The definition of nuclear waste material is not sufficiently clear, but I see no problem with that.

Senator HOLLINGS. But whatever it is, Marad will take care of it?

Mr. STRYKER. Essentially so, yes, sir.

Senator HOLLINGS. That's good.

Then going to point 6 there, Mr. Sloan, "Marad will deliver the ship to the authority in the optimum condition of repair and maintenance possible for the use of the ship by the authority for public display, within the availability of funds to Marad for such purposes." Now what about that?

Mr. SLOAN. Well, since this is a statement of our proposed position, I think that Marad probably has some reservations on that and if I

may explain my understanding of the situation, Senator, it's that there are certain funds assigned specifically to the *Savannah*, some part of which may be made available for putting her in a clean and well painted condition before she's actually delivered. The details on that I do not have. Perhaps Mr. Stryker could respond.

Senator HOLLINGS. Yes, Mr. Stryker, what say you? In other words, we have always heard from the beginning—and I think that's how it's gotten involved—the Maritime Administration is going to spend X dollars in putting it in mothballs. Couldn't we use the same dollars to put it in delivery condition and how many dollars are involved and there's a work list that Congressman Davis was referring to here that's in the memo. Is that work list familiar to you and just what will Marad do?

Mr. STRYKER. Sir, there is a sum that has been set aside, \$123,000, for certain topside shipyard work. However, that relates to preparation of the ship for lay-up in the national defense reserve fleet. We do not have authority to expend that money if the ship is to be used for another purpose.

Senator HOLLINGS. Would you ask us for that authority or was that in the best interest of the Government or what? We can pass laws, but we would have a difficult time over your objection.

Mr. STRYKER. Our present authorization, sir, does not permit us to use the money for that purpose. If appropriate authorization were provided, we would have a different situation.

Senator HOLLINGS. Would you favor it?

Mr. STRYKER. If it were the will of the Congress, sir, the Maritime Administration certainly wouldn't oppose it.

Senator HOLLINGS. All right. I'm really trying to get just what Congressman Davis and myself and the other members of the delegation are going to have to sponsor because they will come in July and say we want the bill in a week and it costs the Government no money and don't worry about it, we'll take care of everything; all we need is a bill quick; and it's totally economically sustainable all by itself. Then we learn different things. It's got to be married to the *Yorktown's* revenues in order to be sustainable and we find different matters of legislation. So before that \$123,000 would be available, we'd have to put it in a new authorization and appropriate it?

Mr. STRYKER. Yes, sir.

Senator HOLLINGS. Is that all, only \$123,000? Because they were talking about a million and as I understand a couple hundred thousand was going to come from the Coastal Plains and \$600,000 from EDA or maybe \$800,000, and \$200,000 from Marad, some \$80,000 shy, but that's all you'd be able to contribute from the Maritime Administration?

Mr. STRYKER. That is what is set aside to prepare the ship for lay-up at the present time, Senator Hollings.

Mr. DAVIS. Senator, would you yield at that point?

Senator HOLLINGS. Yes, sir.

Mr. DAVIS. Is that money, any of it, expended yet?

Mr. STRYKER. None of that money.

Mr. DAVIS. On the House side when our hearing came up before, we kept getting the word over on the House side and probably your office

was sending it down, let's get rid of this project. It's costing the taxpayers \$1,000 a day to keep it where it was.

Mr. STRYKER. I was referring to a sum which was——

Mr. DAVIS. So the money already expended does not come from that \$123,000.?

Mr. STRYKER. No, sir.

Mr. DAVIS. All right. Would that \$123,000 be part of the money that would be needed to dispose of the nuclear material and seal off the chambers?

Mr. STRYKER. No, sir. It's unrelated.

Mr. DAVIS. So we're talking about the 18-point worklist that Admiral Kossler prepared?

Senator HOLLINGS. Are you familiar with that?

Admiral KOSSLER. No, he's not familiar with that. He might be because actually——

Senator HOLLINGS. Could you show it to the gentleman?

Admiral KOSSLER. Yes. He's not seen this particular list.

Senator HOLLINGS. I know you can't study it in detail, Mr. Stryker, but perhaps you can look at it and glance through it and see whether you think that's reasonable.

Admiral KOSSLER. Several months ago, Senator, we were given a list of the work to be done at Detyens shipyard to put the ship *Savannah* in mothballs. We were asked if we took the *Savannah* what would we prefer to be done rather than the work that was planned to be done, such as welding up ports, welding up doors, removing the booms and so forth. This is the list that we made up that we submitted to the Marad saying this would be our preference list to the one that you now have that you're going to spend your money for to put it in mothballs.

Mr. DAVIS. Admiral, at that time did you get a cost comparison of what Marad was going to spend with Detyens as compared to what might be your cost of this?

Admiral KOSSLER. No, sir. We could not get a list of the costs. We got a list of the jobs.

Mr. DAVIS. Just the job description?

Admiral KOSSLER. Just the jobs and what jobs were to be done and what jobs were to be deleted. So we substituted the jobs we would prefer if the ship came to Patriot's Point.

Senator HOLLINGS. What was that figure? Obviously we are talking here about two sums, one by Marad and one by the authority. What was the authority figure for having it prepared in delivery condition? How much was that?

Admiral KOSSLER. We don't have a breakdown for delivering her in a delivery condition. This list here, Senator, was as I said before the things we would prefer them to do when they deliver it to us rather than what they were going to do.

Senator HOLLINGS. How much does that involve?

Admiral KOSSLER. We did not have the pricelist. We knew they were going to spend about \$123,000 and we had that list and we said substitute these items for that list.

Mr. DAVIS. Senator, could I ask a question at this point maybe of counsel, Mr. Sloan? Would you consider this worklist that was prepared by Admiral Kossler as being your requirements to meet para-

graph 6 of delivery of the ship to the authority in optimum condition of repair and maintenance possible?

Mr. SLOAN. Mr. Congressman, I think probably the correct answer to the problem is that our best estimate is that for the sum of \$123,000 the major portion at least of that worklist could be accomplished such that the financial burden on the authority would be reduced to a reasonable handlable minimum if that much work is done, because the work is very similar in nature. We are very hopeful that the figures are pretty close either way.

Senator HOLLINGS. I'm not as quick—perhaps Mr. Stryker, one more time. You have a sum of money that would ordinarily be attributed to mothballing that you could put to repairing and refurbishing for delivery; is that right; plus another amount of \$123,000?

Mr. STRYKER. Let me clarify the \$123,000. That happens to be the amount that was intended to be spent at the Detyens shipyard for certain work related to placing the ship in the reserve fleet. As I indicated earlier, we don't have the legislative authority now to expend the money for another purpose. Furthermore, the Office of Management and Budget has not addressed the issue, so I cannot say what the executive branch position would be even if we did have the necessary legislative authority. From the start of these discussions the Marad position has been that the ship is available as is, where it is. Now if I could digress for a moment, there's been a change on the "where." Yesterday Assistant Secretary Blackwell, in discussion with Senator Thurmond, indicated his intention to move the ship from Charleston in late March to the James River fleet without accomplishing that shipyard work. His reason for saying this is that once that shipyard work is accomplished it will close up certain openings, disconnect plumbing and electrical fittings and so forth, which would have to be reopened if the ship were to be used as a museum. He therefore committed himself to Senator Thurmond to return the ship to Charleston if all of the problems relative to financing, legislation and so forth were solved some time later this year. So the "where is" has been dropped, but the "as is" has not changed.

Senator HOLLINGS. I wonder why I vote yea or nay and make a mistake. That's good testimony. I understand. I have talked with Mr. Blackwell and I'm sure the Patriot's Point Authority is fully aware of that. That's why we held this hearing on short notice so we could find exactly where we're headed and if at all possible enter into a written agreement prior to the end of March, in the next 4 weeks, so that everybody could have this question settled once and for all.

Let me read this next paragraph and maybe it will get into maintenance. Paragraph 7:

The authority shall accept delivery and assume responsibility for possession, control, security and maintenance of the ship upon completion of mooring or docking facilities at Patriot's Point, Charleston Harbor, South Carolina, for permanent berthing of the ship, but not later than . . .

And they've got a blank date there.

Now, Mr. Sloan, on that particular section, what are your comments?

Mr. SLOAN. Senator, I don't think we have any problem with that section except that neither counsel nor I had the authority to make a decision as to what the time limit would be placed on it. Naturally,

the Maritime Administration would like the ship to be turned over to the authority as quickly as possible. On the other hand, we have to get that docking facility built. So I think that date is something we will have to work out in our negotiation.

Senator HOLLINGS. All right. I'm told that paragraphs 8, 9, and 10 relate to the maintenance and we will have you and Mr. Stryker both comment on, first, 8:

During the term of the lease, and any extensions, the Authority shall be responsible for general housekeeping and topside maintenance of the ship, including exterior painting and preservation, and maintenance of all spaces used and occupied by the Authority; but shall have no responsibility for major mechanical or hull maintenance.

Now, first, Mr. Sloan, is that agreed upon, as you feel at this point, by the Maritime Administration, or have they yet to agree to that?

Mr. SLOAN. They have yet to agree to that. Senator, actually as you know, these paragraphs 8, 9, and 10 all three refer to the same question and the preference of the Maritime Administration, as their counsel has stated it to us, of course, this is our draft of the proposal—is that the Maritime Administration would wish the authority to be responsible for hull maintenance, hull inspection, and other major maintenance that may be required, but primarily hull maintenance is the problem that we are discussing at this point, Senator. It was not, in the opinion of the members of the authority and our consultants, economically feasible for the authority to undertake responsibility of this nature because we don't know what the cost might be and we would be committing ourselves to a cost that we have no way of measuring. I would say that I think that the problem can be worked out because of two very important facts. The first is that the Maritime Administration has just had a major drydocking overhaul and hull maintenance performed on the *Savannah* in Baltimore before she was moved to Charleston and under ordinary conditions she should not require anything except hull inspection, as we are informed, for a number of years, perhaps as many as 10 or 20. I know they do not pull ships out of the reserve fleets every 4 or 5 years to rework the hull. So therefore, we may be talking about a very minimal type of a risk, but it is one which the authority thinks, since it would ordinarily represent several hundreds of thousands of dollars' expense, it's a risk that we cannot safely assume financially if the use of the ship as a museum is to be successful.

The second point that I would like to make, Senator, is that this is an expense and responsibility that the Maritime Administration would have to assume in any event if the ship were in a reserve status, which is what they plan to do. So that we feel it entirely reasonable and appropriate to ask that the Maritime Administration continue to accept that responsibility during the period of the ship's life. It is their responsibility now.

Senator HOLLINGS. Well, let me hear Mr. Stryker on that particular score. What is generally the disposition of Marad on maintenance?

Mr. STRYKER. Sir, we prefer not to be responsible for hull maintenance while the ship is in the custody of the Patriot's Point Development Authority. There are a number of reasons for this. If the authority elects to operate diesel engines, et cetera, aboard the ship, which may well be, we feel that they should be responsible for the

maintenance and repairs. Much of the *Savannah* equipment is near the end of its 20-year life at this time; that is, its normal service life. This could involve some expense to Marad. But going beyond that, sir, as in the case of the earlier discussion of layup costs, we don't have authority to do this and, further, our experience does not extend to the maintenance of ships in isolated sites. Our costs data generally apply to ships which are nested in the reserve fleets in large numbers. So we are basically negative toward these proposals.

Senator HOLLINGS. How much—are you talking about for hull maintenance annually or does it have to be pulled out every 7 to 10 years and reworked?

Mr. STRYKER. On an annual basis a diver has to examine the ship and there is need for a ship survey. Each of these operations costs about \$1,200. We calculate the total maintenance cost for the *Savannah* in a reserve fleet location at \$30,000 for the conventional portion on an annual basis.

Senator HOLLINGS. \$30,000 a year?

Mr. STRYKER. Yes, sir, the first year would be slightly higher because the cost would include some of the layup work. That is, if the vessel were located at a Marad reserve fleet site. I believe it would be higher at another site.

Senator HOLLINGS. So what we're talking about is at least \$30,000 plus the regular diver—we're talking about anywhere from \$30,000 and above?

Mr. STRYKER. Yes, sir, and that does not include the possible cost if the ship does require drydocking which in itself could be between \$50,000 and \$100,000, the latter more likely.

Senator HOLLINGS. Now that is drydock in the normal treatment of vessels is every 10 years perhaps or less?

Mr. STRYKER. From 7 to 10 years.

Senator HOLLINGS. Well, you see, these are the things we should get into the record because I can see there's another bill for Congressman Davis to pass.

Mr. STRYKER. It could be as short as 5 years in the case of a ship that was not maintained with full cathodic protection such as is provided in the reserve fleets.

Senator HOLLINGS. Let me jump immediately back, since we are on this subject. You have allocated \$45,000 for maintenance but that doesn't include the maintenance that Mr. Stryker is talking about?

Mr. SLOAN. No, sir, it does not, Senator. That is the maintenance that is described in paragraph 8, topside maintenance, general house-keeping, and including exterior paint and preservation and maintenance of spaces used and occupied by the authority, but not major hull maintenance. That \$45,000 per year is to keep that part of the ship which is topside and which we use in maintained condition.

Senator HOLLINGS. All right. Now has that ever been agreed to by Marad with any other entity, State, private body or otherwise in the disposition of a vessel? How many years have you been there, Mr. Stryker?

Mr. STRYKER. I have been there 2 years.

Senator HOLLINGS. Maybe counsel would know in his records or otherwise. Have we done this before in the Government?

Mr. MORRIS. I'm unaware of any.

Senator HOLLINGS. I want as much for South Carolina as anybody has gotten for any other State.

Well, those other two paragraphs, 9 and 10, I'm going to read them so we've got them in the record and they are self-explanatory but you might want to follow.

9. During the term of the lease, and any extensions, Marad shall have the right to make annual inspections of the use, maintenance and condition of the ship. If Marad determines that use and general maintenance is not in accordance with the terms of the lease it may require corrections of such conditions, or termination of the lease. If Marad determines that hull maintenance or repair below the waterline, or requiring drydocking, or major mechanical repair of machinery is necessary, it shall be the responsibility of Marad to provide and pay the cost of any such hull or machinery repair, including cost of removal and return of the ship to Patriot's Point.

Well, that's 9, and I can fairly well expect and anticipate your comment. Let me first have that on 9, if that's all right. What about that, Mr. Sloan?

Mr. SLOAN. That's really an extension of the very same question, Senator, and that is major hull maintenance will be the responsibility of Marad. I might note that as Mr. Stryker has mentioned, we also would prefer that the obligation to make the annual hull inspection would be the obligation of Marad.

Senator HOLLINGS. Are you saying this because if you took it up the James River they would have to do it anyway?

Mr. SLOAN. They would certainly have to do it anyway and there's a further point, Senator. It's within their specific scientific and technical capabilities and they can do it at a whole lot less cost than we could because we would have to contract with someone to make a large and voluminous report for them and while it might not represent a large and voluminous report for them and while it might not represent a large sum of money to them, I believe Mr. Stryker mentioned perhaps \$1,200 or \$1,500 a year, I don't visualize the authority being able to perform it that cheaply.

Now, I might say that while I don't have the right to make a decision for the authority, I'm sure that if the cost of annual inspection was the only thing we were in disagreement upon we probably could solve that one because it's certainly not an expense of that great amount, but it is another perhaps \$3,000 a year or more.

Senator HOLLINGS. Well, now, Mr. Stryker, what's your comment with respect to the inspection and with respect to paying for it if you find it's not up to snuff, not only for the maintenance but the removal in order to perform the maintenance work and replace it? What about that?

Mr. STRYKER. It is our position, sir, that the Maritime Administration should not bear that cost.

Senator HOLLINGS. You would not be bearing that cost while it was up the James River?

Mr. STRYKER. The cost is a separate point. We would not be bearing an equivalent cost because the cost of doing this on an incremental ship in a reserve fleet is lower, significantly lower, than the cost of doing it on an individual ship in an isolated location.

Senator HOLLINGS. Is there any way to give the committee a ball park figure?

Mr. STRYKER. No, sir. I do not have those numbers with me.

Senator HOLLINGS. If you could figure those out for us in the next week, counsel, would you try to provide the committee with that?

The SS *United States* is maintained at a separate location in the U.S. reserve fleet. You're doing that right now, aren't you, with respect to the SS *United States*?

Mr. STRYKER. Sir, we are in the process of attempting to sell that vessel.

Senator HOLLINGS. But you are still maintaining it separately and the incremental costs are part of the reserve fleet?

Mr. STRYKER. It is separate, and that should give us a basis to the extent that it is analogous to the situation that we are discussing now in developing an estimate.

Senator HOLLINGS. All right, sir. How about No. 10 now. I'm reading:

Upon determination by Marad that hull maintenance or other repair or modification shall be performed upon the ship at the expense of Marad, it shall give 6 months notice of inactivation or removal of the ship to the authority, shall indemnify and hold the authority harmless for loss or damage to authority property aboard the ship while in possession of the lessor, and shall to the extent possible schedule any such period of inactivity or removal of the ship for the 3-month period of December through February.

During the cold months, I take it, down at the valley of tourist visitation.

Mr. Sloan, what's your comment on section 10?

Mr. SLOAN. I understand that section 10 is not in itself a problem if the problems posed by sections 8 and 9 are resolved. It's a part really of the same problem.

Senator HOLLINGS. Mr. Stryker?

Mr. STRYKER. I would agree with that basic point, sir.

Senator HOLLINGS. [reading]

During the term of the lease and any extensions, the authority shall maintain public liability and property damage insurance sufficient to protect the United States, and shall indemnify and hold harmless the United States from any loss or damage arising from the possession and use of the ship by the authority to any person whomsoever. During said term and any extensions, the authority shall maintain insurance for fire, extended coverage and difference in conditions, to the full scrap or salvage value of the ship as shall be determined each year by agreement of the parties, but in no event less than the sum of \$1 million.

Mr. SLOAN. I understand that is agreeable in principle.

Mr. STRYKER. Yes, it is agreeable.

Senator HOLLINGS. On liability insurance, suppose we have Hurricane Hazel and she's not moored in like the *Yorktown* and it turns the thing upside down and the sealed portion where the heavy water was and everything else comes loose and somebody runs out and hollers "radiation." Is that entirely ridiculous and unforeseeable or what about the damage there, if any? What's your comment, Mr. Sloan?

Mr. SLOAN. Senator, you have asked me a question beyond my powers to respond to except that I think the likelihood of the ship doing other than being turned on its side is the worst disaster I can imagine. The amount of insurance that's set for property damage is based on scrap or salvage value of the vessel. Public liability insurance the authority already carries in considerable extent above that sum of money and I'm certain that any possible public liability that

might arise would be covered by public liability and property damage insurance.

Senator HOLLINGS. Well, how about the Nuclear Regulatory Commission? Could you comment? Your name, sir?

Mr. REID. Bob Reid from the Division of Operating Reactors of the Nuclear Regulatory Commission.

Senator HOLLINGS. Mr. Reid, you're the only one left from the GE assault to be able to get over here this afternoon? They are all batten- ing down the hatches over there?

Mr. REID. The others are busy today.

Senator HOLLINGS. What about that? Mr. Reid, you know we had a ship come loose from its mooring. It's not entirely unheard of and since it's not in a fixed position the water gets pretty rough when you get a pretty heavy blow.

Mr. REID. As far as the major problem, I think you're talking about, it would be physical damage caused by the impact on a ship or what- ever the impact would be.

Senator HOLLINGS. There would be no radiation damage?

Mr. REID. The radiation aspect of the thing will all be tightly en- closed. It's primarily in the material of the reactor vessel itself and, therefore, the only radiation release would only be due to ultimate very slow corrosion of the stainless steel vessel which would be very slow and we visualize no hazard from that standpoint. It would make the question of recovery of the vessel or moving it more difficult than otherwise.

Senator HOLLINGS. As you see it, there could be no traumatic dam- age to the stainless steel container?

Mr. REID. Right.

Senator HOLLINGS. All right, sir. And you agree with that, Mr. Stryker?

Mr. STRYKER. Yes, sir.

Senator HOLLINGS. Paragraph 12,

Lessor covenants that it shall not remove or permit removal or stripping from the ship of any item of equipment, equipment, furnishings, fixtures, or spare parts, including linens and items of decor, kitchen equipment, utensils, china, silver, serving or dinnerware now in the ship, or held in storage for the ship; and lessor shall return and deliver to lessee all such equipment and equipment as above named to the ship which is in storage or in use by others, wherever same may be located, upon delivery of the ship to the Authority.

Any comment or disagreement?

Mr. SLOAN. We have no problem with that, Senator, except that we will need to modify the paragraph and indicate that we are not interested in equipments and equipment which are special vessels, in- cluding a barge and some other machinery designed to load and unload nuclear fuel. So we are not interested in any kind of equip- ment or spare parts of that nature and with such a modification my understanding is we are in agreement with the administration.

Mr. STRYKER. With the modification carefully worded to that effect, this would be acceptable to us.

Senator HOLLINGS. I was led at one time to believe there would be quite a bit of memorabilia and gifts that were received when she went around the world and everything else, that those would go along with the vessel. Is that the case, Mr. Stryker? You would deliver that along with the *Savannah*?

Mr. STRYKER. I don't personally know what the disposition of all such items may have been. To the extent that they remain, that would be my understanding. I can't say that they are all still there.

Senator HOLLINGS. All right, sir.

13. During the term of the lease, and extensions the Authority may, with the prior approval of Marad make alterations to the interior configuration of the ship's living and service spaces, including all stateroom, berthing and cargo spaces, necessary in the discretion of the Authority to best use of the ship; provided no such change or alteration shall be at the expense of the United States.

What about that, Mr. Sloan?

Mr. SLOAN. Substantially in agreement.

Mr. STRYKER. Agreed.

Senator HOLLINGS. And—

14. The Authority shall be authorized by Marad to make any and all changes, alterations and installations to the ship, except changes in main mechanical systems or changes which would affect the structural integrity of the ship, as may be necessary to prepare or improve the ship for its use as a public facility, including changes necessary to meet requirements of laws and regulations governing public sites and facilities; and including changes necessary to obtain licenses and permits concerning health, safety and security of the public; and it shall be the responsibility of the Authority to obtain and maintain all such licenses and permits.

What's your comment, Mr. Sloan?

Mr. SLOAN. I think we're in substantial agreement on that, Senator. As you can see, that addresses the problem of access, of fire safety and other requirements of Federal, State, and local agencies concerning health and safety. It would be the responsibility of the authority to meet those requirements and make any provisions for such things as fire escapes and such matters that might be required by law.

Senator HOLLINGS. And that's your understanding, Mr. Stryker?

Mr. STRYKER. Yes, it is, sir.

Senator HOLLINGS. Let me ask Mr. Sloan or Admiral Kossler with respect to the leasing. Looking at this and where the license and who's to maintain, even if agreed upon—and I was a lawyer for Holiday Inn—I would have a difficult time for a long-term lease still, wouldn't I? Have you talked to any motor court operators or licensees that may be interested under these particular terms, say for a 10-year management contract?

Admiral KOSSLER. No, sir; we have not under this lease arrangement. We have had people come down and take a look at the ship to see whether they might be interested in leasing parts of it under the donation arrangement that we originally planned on. I would like to make a couple comments, if I might, sir, as far as the upkeep of the *Savannah*.

Senator HOLLINGS. Sure.

Admiral KOSSLER. If we use a diesel generator we will repair the diesel generator and keep it running. Anything that we would use on the *Savannah* we would keep up. Having seen many reserve fleets and having seen the *Yorktown* when she came out of one after only 5 years, she was in pretty horrible condition. I think we would keep the *Savannah* in a much better condition than she possibly could be kept in any reserve fleet.

However, if we are going to be forced every 4 years to do the dredging, as you know has to be done in Charleston Harbor, Senator,

and pay for that dredging and pay to put that ship in the drydock, I think we might as well forget about it right now. This, sir, is my opinion and not that of the authority.

Senator HOLLINGS. Well, I appreciate it. I'm rather inclined to the same opinion because we have a demand right now to put \$1 million in October in the Corps of Engineers budget extra for the double dredging. You know, every time they don't request it because OMB won't allow them to request it and by the time it gets to us it's not there and we put it in and they won't support it, but then we finally have to keep it in there and then they go ahead on a double dredging basis and that's just the course of that shipyard river opposite Patriot's Point. You're going to have silting problems.

Admiral KOSSLER. One thing we have not been able to put a dollar sign on is the fact that this ship would be fitting out for the people to look at and for us to endeavor to sell the story of our Merchant Marine and the importance of the Maritime Service to our economy and to our security which we can't do up in the reserve fleet. We don't know of anywhere where this is being done. We are worried about the security of our country as far as our Navy is concerned. We want to try to do something about that. We are also worried about the security and the economy of the country as far as the Merchant Marine is concerned and we want to do something about that.

We do figure there's a dollar figure somewhere in there for having it at Patriot's Point rather than up the James River, sir.

Senator HOLLINGS. Well, this particular subcommittee has been vitally interested in it. As the counsel knows, and the distinguished Congressman, we passed the Cargo Preference Act along with this energy crisis so we would have a carriage capacity within the U.S. fleet, but it costs 12 cents extra a barrel but the President after his veto recommended a \$3 additional excise tax that couldn't have been the additional 12 cents, but on December 31, 1974, that was vetoed and we are having a difficult time fighting a rearguard action within the Maritime subcommittees of the House and Senate to keep our merchant fleet going. I have served on the King's Point Academy Board. Mr. Hyatt, you had a comment?

Mr. HYATT. Let me further comment, sir. Admiral Kossler mentioned what we can do with that ship. We not only plan to tell the maritime story, and as a former maritime officer myself, this story needs to be told. I am absolutely amazed at the number of inland people who do not understand the purposes of the merchant marine. They are really not sure what important role the merchant marine plays in our economy. If we are going to have the number of people come through Patriot's Point that we say we are going to come through—and 22,000 people since January 3 is a pretty impressive number of people when you consider the cold weather down there—excuse me, Senator Hollings. We don't say too much about cold weather, but it has been cold weather down there. We are very proud of the number of people that have come through so far, but we figure 350,000 to 400,000 people will come through Patriot's Point the first year.

If we can tell them the merchant marine story and what part the merchant marine plays in our economy and how important it is, I think we have accomplished a great purpose for our whole country.

Now another use we want to make of the ship is to tell the energy story. Just yesterday I talked to an officer in a very large company that has a nuclear reactor and I told them what we planned to do. He said, I think that you will generate the interest among all the companies that are interested in nuclear power, the understanding of nuclear power, to help you with the exhibit and tell that story aboard the *Savannah*.

So the uses, sir, are just innumerable and I think all the uses that we have outlined will be helpful to our country.

Senator HOLLINGS. Paragraphs 15, 16, 17, and 18 cover just that and, without objection, they will be included in their entirety in the record.

[The paragraphs follow:]

15. During the term of the lease, and any extensions, the Authority may make any lawful use of the ship except movement thereof for transportation of persons or property. Such uses shall include, but are not limited to lodging, feeding, entertainment and housing of persons in the ship, the erection and housing of displays and exhibitions of every kind related to maritime commerce, history, education, research and development, and any use which in the discretion of the Authority will promote the uses and purposes of the ship as a public and educational attraction.

16. The Authority may sublet or contract by concession to any other person the conduct or operation of any lawful activity aboard the ship, including food, beverage and lodging services; provided all permits and licenses required by law for such purposes shall be obtained by the Authority.

17. The Authority may fix and collect such charges as it may, in its sole discretion, determine appropriate for goods and services provided or furnished by it to any persons coming aboard the ship; but shall prohibit any person from going into or making any use of any part of the ship specifically prohibited from the public by Marad.

18. It is the specific intent and purpose of the Authority and of Marad in making this lease to provide maximum opportunity for the public to learn the history of United States maritime commerce and the contribution of nuclear propulsion to the merchant marine and naval vessels; to foster a better understanding of energy use and resources; and Marad will cooperate to the fullest possible extent to make books, documents, artifacts, models and exhibits available for display by the Authority for its museum and educational programs; and will encourage like cooperation by the maritime industry and others, including government agencies, having an interest in maritime commerce and industry.

Senator HOLLINGS. The Congressman has a question.

Mr. DAVIS. Mr. Stryker, I'd like to ask you one question. Going back to the \$123,000 we talked about previously, because I'm not that familiar with the Maritime Administration but I have been on the Armed Services Committee in the House and the Department of Defense does have a system by which it can redirect the use of money that has already been authorized and appropriated for what they call a reprogramming action, which then only takes and requires approval by the various committees of the Congress responsible, and thus, it would not necessitate the long and involved times we're talking about here where you say you would be asking and need new authorization and new appropriations from the Congress to direct \$123,000 to the repair of the vessel rather than the preparation for the reserve fleet.

Does the Maritime Administration have any facility which it can use such as that in the reprogramming of the money?

Mr. STRYKER. A reprogramming is a conceivable option, Congressman Davis.

Mr. DAVIS. Would you all be willing to use a reprogramming so we could expedite this? It would seem to me that really what we're talking about is the same vessel. We're talking about putting it in repair to use for the public at Patriot's Point, a much better program that you could ever have by putting it in a reserve fleet. So why waste the time of yourself and the authority and the time of the Congress by going through a new authorization, the Budget Committee having to deal with it and the Appropriations Committee having to approve it, when a simple reprogramming action could be brought up here and you could do it in 1 day?

Mr. STRYKER. Normal reprogramming, as I understand it, Congressman Davis, shifts funds from one authorized activity to another authorized activity. This particular activity does not appear in any of our authorizations. That's one aspect.

The second aspect is that this and any of our budgetary actions are subject to the approval of the Office of Management and Budget, for which I cannot speak.

Mr. DAVIS. Office of "Mismanagement and Bungling?"

Mr. STRYKER. Whatever. I'm sure you're aware of the OMB budgetary authority.

Senator HOLLINGS. All right, sir. Let me go, if I might over to my friend, Mr. Reid in the Nuclear Regulatory Commission. I want to include at this point a letter dated September 9 from the Chairman of the Nuclear Regulatory Commission, the Honorable William A. Anders, to myself, plus enclosures relative to the *NS Savannah*. It will be included in its entirety and I'm reading from that letter:

We believe that the ship can be maintained safely with no danger to visitors (tourists) on the ship. Modification to some access openings would be required, however, to prohibit visitor access. The Maritime Administration staff estimates that this effort would cost approximately \$10,000.

[The letter follows:]

U.S. NUCLEAR REGULATORY COMMISSION,
Washington, D.C., September 9, 1975.

Hon. ERNEST F. HOLLINGS,
U.S. Senate.

DEAR SENATOR HOLLINGS: In your letter dated August 1, 1975, you advised us that the Patriots Point Development Authority was considering acquisition of the NS Savannah and that Senator Thurmond and yourself have introduced legislation to facilitate the transfer. You asked for our assessment of any dangers that we would foresee with this transfer, our requirements for inspection and maintenance of the reactor, and cost of any preparation needed to make the reactor safer.

We believe that the ship can be maintained safely with no danger to visitors (tourists) on the ship. Modifications to some access openings would be required, however, to prohibit visitor access. The Maritime Administration staff estimates that this effort would cost approximately \$10,000.

The Patriots Point Development Authority would have to accomplish periodic inspections and radiation monitoring similar to that presently being accomplished by the Maritime Administration.

Details of safety considerations and licensing alternatives are discussed in Enclosure 1. Our regulatory Guide on reactor decommissioning, is also provided for your information. It describes methods and procedures applicable to the NS Savannah which are considered acceptable by the Regulatory staff for the termination of an operating license.

If we can be of any further assistance to you in this matter, please let us know.

Sincerely,

WILLIAM A. ANDERS,
Chairman.

Enclosures.

CONSIDERATIONS RELATIVE TO THE TRANSFER OF THE NS "SAVANNAH" FROM THE MARITIME ADMINISTRATION TO THE PATRIOTS POINT DEVELOPMENT AUTHORITY OF CHARLESTON, S.C.

SAFETY CONSIDERATIONS

All nuclear fuel has been removed from the ship and therefore, there is no possibility of any nuclear accident from the remaining reactor components on the ship. There is, however, residual radioactivity in the reactor vessel and its internal components. The total amount of this radioactivity is approximately 60,000 curies primarily in the form of iron 55 (2.4 year half life) and cobalt 60 (5.2 year half life). This residual reactivity is shielded by thick concrete and steel structures and access to it could occur only by removal of the shielding with heavy duty lifting equipment. Access to other parts of the primary piping system is also restricted by a containment vessel which surrounds it. Modifications are required, however, to provide additional assurance that visitors could not gain access to the radioactive areas.

The primary and secondary piping systems are presently filled with water. The primary piping system water is slightly radioactive (3.36×10^{-2} microcuries of tritium per milliliter). The primary piping system would have to be monitored on a periodic basis and the water may have to be removed from the ship and disposed of in accordance with NRC regulations (10 CFR Part 20) if excessive leakage from the primary system were to occur.

LICENSING ALTERNATIVES

The Patriots Point Development Authority could apply to the Nuclear Regulatory Commission (NRC) for a transfer of the existing license (NS-1) to them which would permit them to possess the ship and the reactor components but would prohibit operation of the reactor. They would, however, have to show adequate technical and financial capability to continue the monitoring, maintenance, and security of the remaining radioactive material on the ship.

As a potentially preferable alternative, the Patriots Point Development Authority could apply to the State of South Carolina, an "Agreement State",¹ for a byproduct-materials license to become effective on termination of the NRC License (NS-1) now in effect. Our license could be terminated upon acceptance of regulatory authority by the state and the completion of dismantlement actions by the Maritime Administration to satisfy the legal requirements of making the reactor system unusable as a reactor.

Senator HOLLINGS. On that one point right there, is that right, Mr. Sloan? Is that what it is? Are you going to pay for it?

Mr. SLOAN. That's my understanding. That's part of the work list.

Senator HOLLINGS. The Maritime Administration would pay for it. All right.

Now, Mr. Reid, the Patriotic Point Development Authority would have to accomplish periodic inspections and radiation monitoring similar to that presently being accomplished by the Maritime Administration. Can you elaborate on that, please?

Mr. REID. The radiation inspections that are referred to there are the same ones that were referred to earlier in the discussions. That would probably be handled by the State of South Carolina.

Senator HOLLINGS. And are you satisfied that the State of South Carolina has the capability to do that?

Mr. REID. The State of South Carolina is an agreement State with the Nuclear Regulatory Commission under which—in an agreement State, they issue licenses for radioactive facilities and provide the

¹ "Agreement State" means any state with which the Commission has entered into an effective agreement under subsection 274b of the Atomic Energy Act. In such an agreement the state shall have authority to license and regulate certain radioactive materials such as radioactive byproduct materials within the state for the protection of the public health and safety from radiation hazards. Such agreement provides for discontinuance of the Commission's regulatory authority for the materials as specified in the agreement.

necessary surveillance and monitoring and therefore are qualified to do that.

Senator HOLLINGS. Well, where does the responsibility lie for the ultimate disposition of the reactor?

Mr. REID. The N.S. *Savannah* is currently a licensed facility under a Nuclear Regulatory Commission license. Under this arrangement, the lease arrangement, the Maritime Administration would retain ownership. The Patriot's Point Development Authority would become an operator of the facility. We would envision then a joint license between the two organizations with the responsibilities of each clearly defined as necessary under our requirements to protect the health and safety of the public. The ultimate disposal would then be retained by the owner of the facility who has responsibility for that.

Senator HOLLINGS. Namely, Marad? And Mr. Stryker nods his head for the record. Do you agree to that?

Mr. STRYKER. Yes, sir.

Senator HOLLINGS. How will the public be protected against exposure?

Mr. REID. There is currently around the reactor vessel massive shielding which will protect the public from any exposure coming from the reactor vessel provided that no access by any member of the public through this shielding is provided. That's the reason for the security requirements on any doors which would allow access to that area.

Senator HOLLINGS. What is the liability of the State of South Carolina or Patriot's Point with regard to radioactive material?

Mr. REID. OK. With respect to indemnity, I would like to refer to Mr. Slaggie, from the General Counsel's office.

Mr. SLAGGIE. I'm Leo Slaggie with the General Counsel's Office of the Nuclear Regulatory Commission.

The only point I have on liability at the moment is that under section 170(L) of the Atomic Energy Act there is, to my knowledge, presently an agreement between the Nuclear Regulatory Commission and the Maritime Administration that provides for indemnification due to any loss arising out of a so-called nuclear incident, which with respect to the *Savannah* would include sickness or damage or injury arising from radioactivity onboard the ship. This agreement would indemnify both the Maritime Administration and any person who would become liable as a result of such an incident.

So, as long as that was enforced, I think as far as the radioactivity dangers are concerned, they are covered for that type of liability.

I would like to mention that paragraph 11 of the lease, going back to that momentarily, seems to overlap this indemnification agreement in that it says the authority shall maintain public liability and property insurance sufficient to hold harmless the United States from any loss or damage arising from possession or use of the ship. Now a loss arising as a result of a nuclear incident is apparently already covered under this indemnification agreement.

I would suggest that paragraph 11 might be reviewed with this consideration in mind to be sure there is no such overlap.

Senator HOLLINGS. That's a good suggestion.

Congressman, have you got anything else?

Mr. DAVIS. No.

Senator HOLLINGS. We want to insert in the record¹ the two economic studies Admiral Kossler referred to, one by Levy Associates and the other from Laventhol & Horwath, the C.P.A.'s economic feasibility.

I am not in any way questioning—I just have to comment that in the original discussions that this was going to be self-sustaining. There wasn't any doubt I could put my rowboat down there, and I could sustain you all with what the *Yorktown* is doing, but I don't believe the authority would want my rowboat.

Admiral KOSSLER. Yes, sir. We could use it.

Senator HOLLINGS. You're going to have to look economically to see what really the burden is there because—let me ask this: What is the expected incremental income attributable solely to the *Savannah*? Have you figured that?

Mr. HYATT. The first year, as is, 1977 incremental income, \$269,000.

Senator HOLLINGS. That's from the *Savannah*?

Mr. HYATT. For the *Savannah*, yes.

Senator HOLLINGS. It does not involve the *Yorktown*?

Mr. HYATT. It involves what we would allocate from the ticket sales to come to Patriot's Point to see the *Yorktown* and the *Savannah*, and we would allocate that much to the *Savannah*.

Senator HOLLINGS. Wait a minute now. You have already jumped to page 2 or 3. You're looking at exhibit B on that, if you didn't have to pay any interest on the loan financing? If there were a 3-year moratorium, that's where you get the \$362,000; isn't that right?

Mr. HYATT. That's right.

Senator HOLLINGS. Because reading on exhibit A, in contrast to that, what does it show that you have to pay without a moratorium; what kind of income?

Mr. HYATT. I don't know whether we're reading it right.

Senator HOLLINGS. I'm looking at accumulated cash flow.

Mr. HYATT. I'm looking at exhibit I in the Laventhol & Horwath report, cash flow, dated November 1975, the configuration as is.

Senator HOLLINGS. Right. I was looking at exhibit A and by the third year, 1978, for example, it showed a negative cash flow. That's right at the bottom, accumulated cash flow of \$8,650. Now you're reading you say exhibit I?

Mr. HYATT. I'm looking at the November report. I think, sir, what we've got mixed up here, this other report is dated January 1976 if we floated some bonds, which we have not done, and which we don't expect to do in the near future.

Senator HOLLINGS. This is the one with the letter of transmittal dated January 15, 1976?

Mr. HYATT. Yes, sir. If you look at November 1975, the 1976 was a pro forma figure. Let me take this up there. The one you're looking at, sir, is based upon if we floated some bonds which we have decided not to do right now.

Senator HOLLINGS. Can we include that in the record, too? We didn't have that. We've got exhibit A and B, not exhibit I. All right. We will include this for the record, exhibit I, the cash flow before debt service.

¹ See p. 40.

Mr. HYATT. This is without any debt service. We're not creating any debt service because we're bringing the ship in with the contribution from the Federal agencies.

Senator HOLLINGS. The documents will speak for themselves.

Mr. HYATT. Senator Hollings, may I make a statement here, sir? As you know, I work in the bank and we rely very heavily on certified public accountants. They are knowledgeable. They have a public trust. We have employed Laventhol & Horwath, certified public accountants, who are well known in the so-called food and booze trade and many large hotel chains retain Laventhol & Horwath. We have retained them to do this study for us and we are relying very heavily on what they have told us. We are very impressed with what they have told us, and I might say, sir, in answer to your question a while ago, they are talking with two or three large hotel chains about the *Savannah*.

Senator HOLLINGS. I understand Laventhol & Horwath and their competence is not in question before this committee. We take judicial notice of their talent.

That is a matter of question, of course, really before the authority, is all of these things that go down the list; namely, trying to get the authority provided for Marad, trying to get the OMB to agree to it with respect to this \$123,000, and who's going to pay the \$30,000 a year annual upkeep for maintenance, who's going to pay the every 7 to 10 year \$50,000 to \$100,000, how are you going to get—you say the Coastal Plains talk about \$200,000. What assurance do you have for an EDA \$600,000 loan?

Mr. HYATT. Sir, we prepared an application. We understand that the area of the three-county area now qualifies for EDA money. It's a matter of some of the technicalities before we can work out the actual disbursement of such money, but I understand there's such a thing as prior commitment, but we are led to believe, sir, with the Coastal Plains and EDA that we can obtain this money. Of course, if we can't, then we have a real problem.

Senator HOLLINGS. Right. And I think you ought to take notice that EDA—while you're just qualifying those counties, there's a tremendous backlog of requests from counties already qualified in South Carolina because of the cutback on the EDA budget and the President says he's going to veto anything in excess of it, and they are having a hard time getting the already applied for requests cared for in that particular budget, much less something new that's never been applied for until let's say March of 1976.

Mr. HYATT. Sir, we have been talking with the various EDA officials since last fall about this project and—

Senator HOLLINGS. Do you have an application? You don't even have one with a number on it.

Mr. HYATT. We have an application. It will be signed and sent into EDA. We have talked to the people here in Washington. They know all about the project and we have received some encouragement.

Mr. SLOAN. I might mention, Senator—

Senator HOLLINGS. I just want to tell my friends from South Carolina here that I receive a lot of discouragement. With water pollution control, communities all backed up, \$1.4 billion was vetoed. They had \$2.5 billion worth of already established grant moneys into

the communities and engineering studies with these Laventhol folks and everything else, economically and engineeringly feasible, politically desired, applied for with matching funds—you're not putting up anything. They put up matching funds for those. That was \$2.5 billion vetoed and on down the list that I could list to you. So it's nice to talk in Atlanta in an election year and maybe you're right and maybe you'll get that money, and more power to us and that community, but I think when you're making a business judgment you ought to also take into consideration these other factors because it's not easy.

Mr. DAVIS. Along that same line, Mr. Hyatt, is the authority aware that this same EDA promises—it's one of the reasons that the city of Savannah, Ga. backed off of the *Savannah* and that was really the nonavailability of funds, at least they were going to have a hard time getting them.

What makes it so different for South Carolina getting EDA funds especially for this, along with what Senator Hollings was talking about, the veto yesterday, when we're going to have more pressing needs? I mean just in the waste water treatment area, South Carolina lost \$41 million yesterday. Thank God, 7 out of 8 South Carolinians voted for South Carolina and tried to get the money. But what leads you to make the authority feel that this money is going to be forthcoming as opposed to what happened to Savannah, Ga.?

Admiral KOSSLER. Congressman Davis, in addition to Laventhol & Horwath, who made this one study we were just discussing, we hired when we got interested in the *Savannah*, the same group up here, Albert Levy Associates, who made the study for Savannah. We decided inasmuch as they had made this study for the city of Savannah, we would rehire them to continue that study for Charleston. We have retained them. They have made the contacts. They have made the reports to us and it's been their reports to us that have made us believe that that money would be available.

Mr. DAVIS. We want to do everything we can to help the city of Charleston and Patriot's Point, but what makes you all feel or what makes Mr. Levy feel this EDA money is so available when Congressman Bo Ginn who represents Savannah, Ga., who sits on the Emergency Committee and sits on the Public Works Committee that authorizes the EDA money—his feeling was totally to the opposite.

Admiral KOSSLER. Well, we wondered why they felt that way, too, Congressman Davis.

Senator HOLLINGS. Do they have it for the record why we feel so much more sure? This is what I want to find out. Who have we talked to?

Admiral KOSSLER. Last Tuesday we had a meeting up here in Washington and at this meeting we had representatives that would handle the request for EDA funds, representatives that would handle the request for Coastal Plains funds, and we told them that we had been getting reports from out of Levy Associates that that money was up here and that money was available. We would like to hear directly from you. Now from Coastal Plains, we were told, yes, the money is available. However, the gentleman that talked to EDA funds said he would have to see the application first and get enabling legislation first. I think you might have a pretty good chance. We certainly will

handle it in a hurry and let you know. We told them and we said all along, Congressman Davis, if that money isn't available, again, you might as well forget about the *Savannah*.

Senator HOLLINGS. I know Mr. Stryker and Mr. Reid have to go; you folks have got other duties, and you're very kind to come on a moment's notice. Does the Nuclear Regulatory Commission wish to make any further observations?

Mr. REID. Yes, I would like to make one observation. We obviously have not had time to study the terms of the lease arrangement and one of the things that we will have to assure ourselves of is that somewhere in terms of the lease that all of the current responsibilities that are assigned to the Maritime Administration will ultimately be assigned jointly to the Maritime Administration and Patriot's Point Development Authority if this lease arrangement is entered into.

Senator HOLLINGS. All right. It seems only appropriate then that this committee will keep the record open and await the negotiated lease by the authority and Marad. Once they have made an agreement, then having submitted it to you, we will not only receive from Mr. Stryker from Marad and you, Mr. Hyatt, from the authority the agreed upon lease, but the comments from the Nuclear Regulatory Commission. Is that satisfactory, Mr. Reid?

Mr. REID. Yes.

Senator HOLLINGS. Is that all right, Mr. Stryker? Do you have anything further you wish to add or any comment? We will keep this record open, but before we can move our chairman and the committee members and the members of the Senate will want to know what is the agreement. They will be asking these same questions. We are going to have to be able to answer them and both you, Mr. Hyatt, and Mr. Stryker then with counsel can formulate and give us the finalized lease so we will have that before us with the changed wording because the wording is for a grant and I think the changed wording of the particular bill now being heard will have to be changed and what amendments would be suggested to that along with the finalized lease.

Mr. STRYKER. Senator Hollings, it's my hope that we will be able to arrive at some agreed wording. There's one point that I did not make that I think should be made for the record, which is that the Maritime Administration is proceeding to drain the contaminated water from the ship at this time. That will take place in any event and would be to the advantage of anyone who held the ship.

Senator HOLLINGS. You're doing that down in Charleston?

Mr. STRYKER. We are doing it. The action has started and it will be completed in March.

Senator HOLLINGS. Well, Miss McKinney does have a story. All right. Anything else? We appreciate very much the members of the Maritime Administration and Nuclear Regulatory Commission and particularly our friends from the Patriot's Point Authority appearing here on such short notice, but I think you all agree it's been of tremendous value to everybody to move this thing along.

Mr. HYATT. Senator Hollings, may I suggest, sir, I would hope that NRC and Maritime would complement Patriot's Point and would look at this as a joint venture because we hope to help NRC

tell the nuclear story. We hope to tell the story about the Maritime and I would hope you would join hands with us in our effort.

Senator HOLLINGS. Thank you very much. The committee will be in recess.

[Whereupon, at 3:30 p.m., the hearing was adjourned.]

1875
The undersigned, W. J. ...
...
...

ADDITIONAL ARTICLES, LETTERS, AND STATEMENTS

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL,
Columbia, S.C., September 29, 1975.

STATE OF SOUTH CAROLINA,
Patriots Point Development Authority,
Post Office Box 634,
Charleston, S.C.

DEAR MR. HYATT: Your correspondence of September 15, 1975, regarding the acquisition of the N.S. Savannah by the Patriots Point Development Authority (Authority) listed several areas of inquiry. Our letter will address these inquiries, and additionally provide to the Authority recommendations of the Division of Radiological Health (DRH). We have enclosed copies of pertinent regulations, license applications, a regulatory guide, and the survey report compiled subsequent to the on-board inspection of the N.S. Savannah conducted by the staff of DRH. The applicability of these enclosures is seen later in our letter.

The emplacement of the N.S. Savannah at Patriots Point in our opinion does not jeopardize the health and safety of the public. The present inventory of radioactive materials aboard the N.S. Savannah includes loose contamination, induced radioactivity in reactor component parts, a quantity of waste and/or primary system water, and some contaminated resins. The above are confined almost exclusively to controlled access areas (see DRH survey report for contamination and radiation survey results). Although certainly the potential for catastrophic events such as earthquakes and hurricanes exist in the Charleston area, we feel that the availability of radioactive materials aboard the N.S. Savannah does not increase significantly the potential consequences of such probability. We would certainly endorse the removal of the contaminated water and resins to further reduce the potential consequences; however, this recommendation would apply primarily to potential contamination problems that could occur aboard in the event of a leak in the liquid containing systems. Perhaps it should be noted that the N.S. Savannah's nuclear components are provided with impact structures that provide significant protection. Protection of visitors and operating personnel aboard the N.S. Savannah can be assured by the prevention of entry into the controlled access areas.

We have reviewed the reports submitted detailing the radioactive contents aboard the N.S. Savannah. Our review in conjunction with our survey indicates no incongruencies. An update of the curie content can be performed easily with application of a time decay formula. We think that such exercise is irrelevant, as regardless of the contents, the same precautions and license conditions will prevail for the non-exempt quantities. An error in calculations of several magnitudes would be largely irrelevant for our purposes. The attached survey report does include a primary water analysis and a contamination survey report—the latter being of primary importance. The contamination survey verifies contamination in the controlled areas as acknowledged by all parties. A few of the public area smears indicate some very minor presence of contamination. We plan to perform more concentrated smear surveys of these areas to insure that we did not smear only the outskirts of a contaminated area. However, we should indicate that our smears were taken over a greater area than normal, and the results of these few smears, although higher than those taken in other public areas on the ship, are of no consequence as such can be encountered in almost every public area.

The termination of the present Nuclear Regulatory Commission (NRC) license and the issuance of a radioactive materials possession license presents some uncertainty. It must be realized that NRC will independently assess the requirements for terminating the present utilization facility license. The enclosed copy of "Regulatory Guide 1.86" details present guidelines for termination of operating licenses for nuclear reactors. It would appear that the present plans for the N.S. Savannah would constitute the "mothballing" alternative for retirement. It should be noted that such alternative requires disposition of

radioactive fluids and waste. This would certainly include the contaminated water, resins, and possibly a significant quantity of loose contaminated equipment, etc., presently stored in the containment vessel. The surveillance requirements would also be applicable to the plans for the N.S. Savannah. Note, however, that mothballing could not be the mode of ultimate disposition of the N.S. Savannah's nuclear facilities due to its non-permanent nature. Thus, NRC may require a detailed analysis indicating the ultimate dismantling and disposition of the radioactive components. What NRC will require would be for us to conjecture at this time.

As pertains to the licensing of the N.S. Savannah we have enclosed a copy of pertinent State regulations and license applications. Parts I, II, and III of the regulations would be applicable to a possession license for the N.S. Savannah. To initiate the licensing process, it would be necessary for Patriot's Point to submit a license application. In general terms, the following conditions for license issuance would be required:

1. Disposition of at least the contaminated water, this should include the resins and other loose contaminated material.

2. Surveillance criteria similar to the NRC regulatory guide criteria (excepting seal welding discussed later and intrusion alarms).

3. A proposed plan for ultimate disposition of the contaminated and radioactive nuclear components.

Disposition of the water should present only minimal problems. Due to the inoperability of the ship's systems, resin removal would require some type of flushing system provided by on-shore equipment. The latter may possibly be obtained from Chem-Nuclear Systems, Inc. in Barnwell, South Carolina. The nuclear system should then be dried to the extent practicable. Facility radiation surveys can be provided through contract from outside the Authority to avoid having to have a full-time health physicist. Estimated cost should be less than \$1,000 per year for this service as there are qualified persons in the Charleston area. Environmental surveillance provided by DRH should be sufficient. DRH does not provide routine facility services to any licensee, including State agencies. Our function is regulatory, and we would thus confirm facility surveys upon inspection. We do, however, monitor the environment. For the functions performed by DRH, the only cost is the annual licensing fee which would be \$75.00, in this instance.

The NRC regulatory guide specifies multiple locked barriers, not accessible except through cutting welded closures or the disassembly and removal of substantial structures. Our present position would be to require adequate personnel barriers in the form of chained and locked entrances. We recommend this rather than welding so that accessibility can be had to determine the condition of the nuclear systems or to correct any problem that may occur. This accessibility would, however, require access to the controlled areas to be limited to regulatory personnel and the licensee's health physicist. Intrusion alarms will not be required by DRH if sufficient barriers exist. Containment vessel seals should preclude the escape of contamination into public areas.

Combustible materials including diesel fuel oils used in diesel generators should be minimized to reduce fire potentials. Anything combustible and removable in controlled access areas should be removed. DRH is required by law to recommend the establishment of indemnity funds to the State Budget and Control Board for the ultimate handling and disposition of radioactive components. You may consider this in your plans for ultimate disposition of the nuclear components as required for licensing by DRH. Present indemnity plans established by other licensees require a periodic contribution of funds through the State Budget and Control Board. We are uncertain as to the application of indemnity provisions to other State agencies. Alternatives to this arrangement would be guarantees by the Maritime Administration to provide for disposition of the nuclear components. We understand that this would involve complications as specific budget provisions would have to be made by Congress, and the Maritime Administration does not favor to do this. Another alternative would be to have Congress, through special legislation, provide for ultimate disposition. This may be in some form of guarantee whereby if the N.S. Savannah generates profits, such will be applied to the disposition fund. Salvage value of non-nuclear components should be considered.

It should be noted that over the display life of the N.S. Savannah, several nuclear half-lives will transpire with each reducing the radioactivity by one-half. For this reason, we would not favor present removal of nuclear components. The subsequent decay time will result in a considerable decrease in

salvage personnel exposure warranting the future disposition. The existence of the nuclear components does not present offsetting consequences to visitors of the N.S. Savannah. A complicating factor to this however, would be the necessity for special equipment to remove the nuclear components. You may wish to verify that future disposition can be effected without the special equipment in Galveston or else make provision for acquiring this equipment (example—reactor stud tensioner).

In summary with regards to licensing, we foresee no difficult problems. We could presently issue the necessary license provided that NRC would terminate their license. NRC may require more or less stringent conditions for termination than DRH would for issuance. Underlying both actions would probably be the plans for ultimate disposition of radioactive components.

The present technical specifications for the N.S. Savannah would not be pertinent to a license issued by DRH. The surveillance requirements previously discussed would include the reporting made necessary by a DRH issued license. Note that no reporting to NRC would be required contrary to the NRC guidelines. The report provided by your contracted health physicist should constitute most reporting requirements except perhaps for unusual occurrence reports.

Referencing the recommendations by the State of Georgia, we have the following comments:

1. It is our understanding that the primary system is presently an enclosed system. If this is true, we see no necessity for removing piping connections from the primary vessel and welding plates over the flanges. This involves personnel exposure, increases the probability of greater contamination, and results in no added protection that we can foresee.

2. Cutting and removal of the control rod cables only results in personnel exposure. The control rods are inoperable and even should they not be, would be of no safety consequences.

3. Earlier we discussed reasons for not welding the containment vessel entrances. Note as to other containment vessel penetrations such as piping and electrical penetrations, these should be sealed already. However, this should be verified and performed if not sealed.

4. We agree that contaminated areas should be sealed; however, sealed to us does not mean welded enclosure.

5. We agree with the sealing of the resin beds should the resins remain aboard; however, as earlier discussed we recommend the removal of the resins.

Our survey did not indicate the necessity for establishing additional control areas. We will, after termination of the NRC license, perform another survey; however, we would not expect to encounter additional areas requiring control. Perhaps some of the areas enumerated as control areas could be deleted after minimal decontamination efforts. An example of this would be the hot chemistry laboratory. With removal of possibly only the hot sink, its plumbing, and some cabinets, this area could be placed into public use. The decision to do such would be based on the need for such areas and the cost of decontamination. We did not place any emphasis on what could be done cost effectively, but will be willing to do so should the Authority be interested.

Liquid and gaseous waste surveillance requirements would not be necessary provided the contaminated water is removed. Should the resins remain intact and it is possible to do so, we would recommend the introduction of a water absorbing medium into the resin beds to preclude the leakage of freestanding water. Should the water remain aboard we would certainly require surveillance of the systems to verify non-leakage on a more frequent basis than quarterly.

In conclusion, our basic recommendations include:

1. Removal of the contaminated water.
2. Removal of resins and other loose contaminated material if feasible, and if feasible some degree of decontamination not involving significant personnel exposure.
3. Development of a plan for ultimate disposition of the radioactive components at a later date which provides for some form of indemnity or assurance fund.
4. Sealing of the controlled areas by chain and lock to preclude entry except by personnel authorized by the license.
5. Surveillance and reporting criteria similar to that of the NRC guide.
6. Initiation of the licensing process by the Authority in the manner as provided by the regulations.

We have attempted to address your inquiries as submitted in your correspondence; however, there may be additional questions or clarifications that you

may have. We therefore extend to you and the Authority's representatives the opportunity to visit with us and discuss more fully our recommendations or your further inquiries.

Very truly yours,

HEYWARD G. SHEALY,
Director, Division of Radiological Health.

FINANCIAL PROJECTIONS—OPERATION OF NS *Savannah* AT PATRIOTS POINT,
CHARLESTON HARBOR, S.C.

LAVENTHOL & HORWATH,
CERTIFIED PUBLIC ACCOUNTANTS,
Philadelphia, Pa., November 18, 1975.

MR. CHARLES F. HYATT,
*Chairman, Patriots Point Development Authority,
Charleston, S.C.*

DEAR MR. HYATT: We have conducted, in accordance with the terms of our proposal letter dater November 3, 1975, a study of the financial feasibility of operating the NS SAVANNAH as part of the Patriots Point Naval and Maritime Museum. During our study we discussed the demand for the proposed shipboard facilities with representatives of government, commerce, and industry. Within the limited time frame available for this study, we familiarized ourselves with existing and planned travel patterns, area approaches and lodging accommodations in the Charleston area, in conjunction with a study of the Patriots Point site, to determine potential competition for the SAVANNAH project. We gathered market and financial data from the operation of the visitor attractions USS NORTH CAROLINA and USS INTREPID, as well as the SS QUEEN MARY, which has been converted to its present use as a Hyatt hotel, for comparative purposes in projecting operations aboard SAVANNAH.

This report is based on estimates, assumptions and other information developed from our research of the market, our knowledge of the leisure time industries and our meetings with you, during which we were provided certain information. The sources of information and bases of our estimates and assumptions are stated herein. The terms of this engagement are such that we have no obligation to revise this report or the projected financial results to reflect events or conditions subsequent to the date of this report. However, we will be available to discuss the necessity for revision in view of subsequent changes in economic or market factors affecting either Patriots Point or the acquisition and operation of the NS SAVANNAH.

Since the projections are based on estimates and assumptions which are inherently subject to uncertainty and variation depending upon evolving events, we do not represent them as results that will actually be achieved.

Our report and other presentation materials are intended solely for the information of the Patriots Point Development Authority, other members of the Patriots Point project team, related government agencies, and in support of an application with a lending institution for financing the proposed project. They may also be submitted to a hotel franchisor or management firm in order to generate interest in licensing or managing the operation. Otherwise, neither the report nor its contents may be referred to or quoted in any registration statement, prospectus, loan or other agreement or document without our prior written consent.

No effort has been made to determine the possible effect on this project of present or future Federal, state or local legislation relating to environmental or ecological matters, or interpretations thereof. Further, we have not ascertained the legal or regulatory requirements applicable to this project including zoning, other state and local government regulations, permits and licenses.

We would like to express our sincere appreciation for the spirit of cooperation extended to us by members of your Authority and by LBC&W.

Very truly yours,

LAVENTHOL & HORWATH.

SCOPE OF STUDY

This engagement was performed under a sub-contract with LBC&W South Carolina. The terms of the engagement directed our analyses to the following

tasks: Familiarization with the facilities available aboard SAVANNAH; estimation of the marketability of various facilities configurations which could be provided aboard SAVANNAH; familiarization with competitive lodging and dining facilities in the Charleston area and an analysis of the competitiveness in this market area of SAVANNAH's facilities; projection of financial results of operations; preparation of a written report.

For the purpose of this engagement, we have relied on market studies conducted for Patriots Point Development Authority (PPDA) by LBC&W, results of which are contained in LBC&W reports dated August 1972 and March 1974. We have reviewed the methodology employed by LBC&W in their projection of anticipated visitation to Patriots Point and feel that the approach to the projection was valid, and that the projected number of visitors is reasonable assuming development of Patriots Point as described in their report.

The March 1974 report reflected LBC&W's estimate of the impact on Patriots Point visitation of the national energy crisis which was nearing its mid-1974 peak at the time the report was completed. Consistent with the overall conservative approach to our own analysis, we have used LBC&W's March 1974 projections as the base, or starting point, for our own visitation projections. Thus, the visitation and financial projections presented in this report can be said to reflect possible energy shortages approximating 1974 levels.

Due to time constraints regarding a mid-November deadline on either accepting or declining the offer to include SAVANNAH in the Patriots Point project, our investigations of certain factors must be classified as preliminary in nature; for example, we are still awaiting engineering data from Todd Shipyards Corporation with which to calculate a more precise estimate of utilities costs. Notwithstanding the few items which warrant further refinement, we feel that our overall analysis has been sufficient in scope and depth so that a more lengthy analysis of the operation of SAVANNAH would not result in financial projections materially different from those contained herein.

SUMMARY OF CONCLUSIONS

Our basic assumption during the course of this study was that SAVANNAH would be berthed at Patriots Point and would provide certain public dining, entertainment and overnight accommodations facilities, as well as contributing to the overall project as the first maritime ship within the Museum. The facts that SAVANNAH is the only nuclear merchant ship in the entire U.S. inventory, and that she is known internationally, would add considerably to her attractiveness, particularly in terms of educational value in demonstrating the peaceful uses of atomic energy.

We have concluded that operation of the NS SAVANNAH as part of the Patriots Point Naval and Maritime Museum, within certain operating constraints and with the fulfillment of various prerequisite conditions, should result in no less than a break-even situation from a financial standpoint.

Furthermore, if SAVANNAH were to be reconfigured and the staterooms and public spaces refurbished along the lines of the recommendations contained in this report, we feel that operation of SAVANNAH could result in positive cash flows which would contribute materially to the overall Patriots Point project depending, of course, on the level of debt service laid on the SAVANNAH undertaking.

It must be pointed out, however, that we feel that it is essential that SAVANNAH be operated in conjunction with other major attractions, such as the USS YORKTOWN and other facilities planned for Patriots Point. We feel that operation of SAVANNAH as a free-standing, i.e., financially independent, attraction would not be feasible; in order to be economically feasible the operation would have to be conducted in company with attractions having the ability to draw large numbers of visitors.

We have used, as a base for our own projections, LBC&W's visitation estimates as shown in their report to PPDA dated March 1974. We added 20 percent incremental visitation based on our estimates of SAVANNAH's contribution to the overall drawing power of Patriots Point. Thus, the financial projections contained herein have been predicated, in part, on 1977 and 1980 visitation estimates of 414,000 and 636,000, respectively, as shown in the following table:

Year of operation:	Calendar year	Estimated paid attendance	
		Without Savannah ¹	With Savannah ²
1.....	1976	300,000	360,000
2.....	1977	345,000	414,000
3.....	1978	400,000	480,000
4.....	1979	460,000	552,000
5.....	1980	530,000	636,000

¹ LBC&W.

² L&H.

Our projections of cash flow indicate that operation of SAVANNAH, as described in this report, would be economically feasible if debt service (value unknown at present) could be covered by the amounts shown below:

Year of operation:	Calendar year	Projected cash flow before debt service, optimal configuration
2.....	1977	\$432,000
5.....	1980	657,000

RECOMMEND CONFIGURATION CHANGES

The appeal of attractive shipboard accommodations has long been known. The economy and efficiency of trans-oceanic jet travel have overshadowed and nearly done away with the New York-to-London super-liners, but many smaller passenger liners still sail the world's seasonal tourism routes and have retained a sizeable, loyal clientele.

In addition to those who patronize the cruise ships, there are hundreds of thousands who have served in the various U.S. naval and maritime services, millions of Americans who have not been to sea but live along U.S. coastlines and have always felt attracted to the sea, and still more millions of "inlanders" who are perhaps more awed than attracted by their occasional glimpses of the oceans and for whom a ship permanently tied to a pier would be most appealing for a first night's stay aboard a ship. Thus, there would appear to be essentially unlimited potential for renting overnight accommodations aboard an attractive, well-maintained ship; the only problem would appear to be in drawing potential guests into the area where the accommodations have been made available.

While we agree in general with this hypothesis, we are of the opinion that, for the SAVANNAH operation to be financially successful, the accommodations aboard SAVANNAH must be patronized on a regular, on-going basis year-round, not just during certain peak tourism seasons.

We feel that the most logical supplemental market segment which could be attracted to the SAVANNAH is the conference demand generated by a wide variety of business and non-business associations and organizations, this general category of demand also including the many veterans' groups whose reunion meetings could very appropriately be held at Patriots Point aboard SAVANNAH. However, with the exceptions of most veterans' groups, the majority of conference groups would have to be attracted to use SAVANNAH's conference, dining, entertainment, and lodging facilities—in competition with other first-class facilities located in hotels and resorts ashore. SAVANNAH would possess a distinct competitive advantage in the marketing of her conference facilities to veterans' groups, and would certainly be perceived as a unique setting for a non-veteran's conference—but her facilities would have to be highly competitive to attract sufficient general, i.e., non-veteran, conference demand to assure financial success. Stated another way, SAVANNAH's public facilities would have to be fully competitive to assure her successful operation as a convention hotel during the "low" tourist seasons.

As she is presently configured, SAVANNAH offers only 30 passenger state-rooms, which would provide overnight accommodations for only 60 guests.

Furthermore, 22 of the 30 staterooms are quite small, containing one single bed and one sofa-bed.

In addition to the passenger staterooms, there are 22 officers' staterooms which could be used with minimal redecorating and refurbishing, 18 of them as singles and four as suites. Therefore, as presently configured, SAVANNAH would provide accommodations for a total of only 86 guests.

More critical than the limitation of 86 guests, however, is the "mix" of accommodations. Since primary demand is expected from families of tourists, the "as is" configuration would be very restrictive in view of the fact that, of a total of 52 rooms, 18 are singles and 22 are small doubles.

In terms of conference facilities, the "as is" configuration is simply unsuitable, since the only available meeting room would be the Main Lounge; the Veranda Lounge and the Dining Room would have to be kept open for use by other guests, as well as for tours of the ship by non-guests.

Therefore, it is apparent that certain configuration changes would be required to provide the necessary facilities to serve the two major market segments, tourists and conferees. Exhibits A through F contain our recommendations for such changes, with "As Is" a minimal package of facilities, "Phase II" simply a refurbished version of "As Is" plus the addition of conference facilities, and "Optimal" representing the optimum reasonable configuration for the operation of SAVANNAH as we envision it. Exhibit G provides a summary of available guest rooms in each configuration.

The point of major departure from the present configuration of SAVANNAH's facilities is between Phase II and Optimal. There would be no bulkhead work required through Phase II. However, it is not until achieving the Optimal Configuration that the guest room supply—and mix—problems could be overcome.

Clearly then, in terms of the economic feasibility of SAVANNAH as a separate profit center in Patriots Point and in terms of SAVANNAH's ability simply to support peak-season tourist lodging demand, the obvious choice is the Optimal Configuration.

Exhibit H is a compilation of preliminary estimates of the costs involved in achieving the recommended Optimal Configuration. The estimates are presented in 1975 constant dollars, i.e., without considering the impact of inflation, and warrant considerable refinement; they are presented here for initial planning purposes only.

Regardless of the extent of changes to SAVANNAH's facilities, we strongly recommend that great care be used in preserving an environment of shipboard living. We in no way intend to imply that this valuable atmosphere be eroded.

BASES OF FINANCIAL PROJECTIONS

We have prepared estimates of income and expenses for the operation of NS SAVANNAH as a dining and lodging facility within the Patriots Point Naval and Maritime Museum. Our projections, contained in Exhibit I, are shown in the three configurations discussed in this report and are presented in 1975 constant dollars rounded to the nearest thousand dollars.

General Assumptions

In projecting the results of operations for 1977, we have assumed the following prerequisite factors: Significant landscaping will have been accomplished in the Patriot's Point site area; good highway signing throughout the Charleston area; substantial advertising and promotion activities relating to both Patriots Point and SAVANNAH; professional management of the SAVANNAH project by a highly-qualified hospitality industry management company; and affiliation with a national or international reservation and referral system.

For 1980, in addition to the prerequisites listed above, we have assumed that extensive Patriots Point development will have been accomplished, including an on-shore museum, parks, a marina, other major combatant and/or maritime ships in place, a chapel, campsites/RV facilities, and major conference motor inn, all completed and in operation on the Patriots Point site.

The assumptions detailed above are, of course, in addition to basic assumptions such as the on-going operation of Patriots Point from January 3, 1976 through the five-year period of our projection.

Seasonality of demand

For purposes of this engagement, we have established a pattern of seasonal demand as shown in the following table:

Season	Inclusive dates	Approximate number of days
Off-season.....	Dec. 1-Feb. 28.....	90
Spring shoulder.....	Mar. 1-Jun. 15.....	107
Peak season.....	June 16-Labor Day.....	81
Fall shoulder.....	Labor Day-Nov. 30.....	87
Total.....		365

Our estimates of seasonality of tourism demand have been confirmed through conversations with executives of the Trident Chamber of Commerce and leading hoteliers and restaurateurs in the Charleston area, and through comparison with visitation patterns experienced aboard USS NORTH CAROLINA.

Market segmentation

The following table summarizes our assumptions regarding projected numbers of guest rooms sold in 1977 and 1980 in all three configurations.

Configuration	Available rooms	Occupied rooms	Percent occupied	Demand sources		
				Tourists	Conferees	Miscellaneous
1977:						
As is.....	52	23	44	18	4	1
II.....	52	30	58	24	4	2
Optimal.....	80	51	64	32	16	3
1980:						
As is.....	52	27	52	20	6	1
II.....	52	34	65	26	6	2
Optimal.....	80	57	71	34	20	3

A trend toward higher occupancy is clearly indicated in the preceding table as the projection moves from "As Is" to the Optimal Configuration. This is as would be expected as the accommodations are refurbished and expanded, the entire facilities "package" becoming much more marketable.

It should be noted that the figures shown above reflect a "typical day" on an average annual basis. That is, if the entire annual experience was divided by 365, the result would approximate the figures shown above.

The following table combines our projections of rooms sold by demand source, with seasonal fluctuations. Once again, the figures in the table below reflect our estimates of a "typical day." The following information relates to Optimal Configuration experience in 1980.

Season	Available rooms	Occupied rooms	Percent occupied	Occupied rooms by demand source		
				Tourists	Conferees	Miscellaneous
Off-season.....	80	32	40	21	6	5
Spring shoulder.....	80	64	80	29	32	3
Peak season.....	80	67	84	58	8	1
Fall shoulder.....	80	64	80	29	32	3
"Typical day" projection.....		57	71	34	20	3

Rooms department

The projections of room sales shown below and in Exhibit I are based on rate structures, double occupancy factors, market mixes and average room rates of competitive properties, as well as our assumptions relating to the marketability of the shipboard facilities aboard SAVANNAH.

OPTIMAL CONFIGURATION

[1975 constant dollars]

Year	Occupied rooms		Projected average rate	Projected annual room sales
	Daily	Per year		
1977.....	51	18,615	\$31.76	\$591,000
1980.....	57	20,805	33.61	699,000

Departmental payroll expenses, encompassing front desk and housekeeping staffs, are projected to be 18.5 percent of room sales in 1977 at 64 percent occupancy. Other controllable expenses are projected at approximately 10 percent of room sales in the same year. Total rooms department expenses in 1977 thus amounted to 28.5 percent of sales, leaving a 71.5 percent departmental profit.

At the average rates shown above, we estimate that the facilities aboard SAVANNAH, assuming upgrading to the Optimal Configuration, would be entirely competitive with other first-class accommodations in the Charleston area. The table on the following page illustrates our assumptions of advertised room rates for accommodations aboard SAVANNAH.

"SAVANNAH" ROOM RATES

[1975 constant dollars]

Configuration	1977			1980		
	Single	Double	Suite	Single	Double	Suite
As is.....	\$16	\$18-\$22	\$30	\$18	\$22-\$24	\$35
II.....	23	24-26	50	25	26-30	50
Optimal.....	\$26-\$28	30-32	\$40-\$50	\$28-\$30	32-34	\$40-50

The increases in average rates from 1977 to 1980 reflect the increased marketability of the accommodations due to the continuing development of the Patriots Point Naval and Maritime Museum; increases do not reflect the effect of inflation.

In way of comparison, the following table presents advertised rates at the primary competitor in the Charleston area, the Mills Hyatt House, and on board SS QUEEN MARY, which is operated by Hyatt Hotels in Long Beach, California.

1975 ADVERTIZED RATES

	Single	Double
Mills Hyatt House.....	\$32	\$38
SS "Queen Mary".....	\$18-37	\$18-37

Food and beverage department

Food and beverage revenues were determined based on demand anticipated from three primary sources, houseguests, local area diners, and conference groups, the last comprised of both houseguests and non-registered guests.

We have calculated estimated restaurant income based on utilization of the various dining and lounge facilities proposed (see Exhibits A-F), average guest check, seasonal demand, house count, and our assumptions of the competitiveness of SAVANNAH's dining facilities related to others in the Charleston area. As presently planned, SAVANNAH would be moored bow-in aft of YORK-TOWN, so that SAVANNAH's stern would present a vista across the Cooper River toward the Charleston skyline. We feel that, during the evening dining hours, the combination of the shipboard setting, the views across the Cooper

River with marine traffic passing into and out of the Charleston Harbor, the skyline of the City of Charleston and the sunsets behind the skyline, would provide a distinct competitive advantage over other facilities in the Charleston area.

Average food expenditures have been estimated by meal and guest type based on estimated averages of comparable facilities, both in the Charleston area and on a wider geographic distribution. Projected average food checks, under the Optimal Configuration, range from \$1.95 for breakfast to \$7.00 for dinner in the Veranda Lounge. Beverage revenues were estimated at 30 percent of food sales.

Costs of (combine) food and beverage raw products were estimated, in 1977 under the Optimal Configuration, at 39.5 percent. Departmental payroll expenses were projected at 35.5 percent, and other controllable expenses at 14 percent of total food and beverage sales, leaving a departmental profit of 11 percent.

Telephone department

Telephone service in hotels typically generates a net loss due to the cost of equipment rental and labor. Currently, none of SAVANNAH's staterooms are equipped with ship-to-shore telephones; accordingly, we show neither a profit nor a loss in the "As Is" Configuration.

We have assumed that a telephone system would be installed throughout the public spaces and guestrooms in Configuration II. The level of operating losses in both Configuration II and the Optimal Configuration reflect our assumption that the newest in local and inter-station direct dialing equipment would be installed to minimize payroll costs.

Miscellaneous income

As used herein, this category includes the income and expenses related to the gift shop, the guest laundry and valet service, the rental of audio-visual equipment for conferences, purchase discounts, vending commissions, bad-debt recoveries, deposits on unclaimed reservations and other miscellaneous income sources.

Undistributed operating expenses

Administrative and General

Administrative expenses include payroll and related benefits for the management and accounting staffs, credit card commissions, general insurance, legal and accounting fees, travel expenses and similar items. Contract management fees have not been included as part of these calculations. Total departmental expenses, including payroll, approximate nine percent of total sales in 1977 under the Optimal Configuration.

Advertising and Promotion

This account summarizes the cost of the sales staff and the advertising and promotional efforts of the ongoing operation. The costs represented do not include expenditures for pre-opening promotional efforts.

Included in this expense are the payroll and related expenses for the sales staff and agency fees, media production and space costs, collateral material, group promotion and miscellaneous expenses. Total departmental expenses approximate four percent of total sales in 1977 under the Optimal Configuration.

Heat, Light and Power

Expenses for heat, light and power have been preliminarily projected to equal approximately four percent of total sales in 1977. As of the printing date of this report, we were awaiting specific engineering data from Todd Shipyards Corporation relative to total dockside utilities support.

Repairs and Maintenance

This department is responsible for the upkeep of the ship, equipment, furniture and fixtures. Expenses for this include painting, decorating and repairs for the ship and equipment, as well as for furniture and decor. The costs reflected in our projections are for maintenance only and do not reflect alterations of facilities or the addition of new furniture, fixtures or equipment.

Total costs of repair and maintenance are projected to be approximately six percent of total sales in 1977 in the Optimal Configuration, and include \$45,000 per year for exterior hull upkeep.

Fixed expenses

Insurance

Fire and extended coverage insurance costs were projected by the insurance agent who is currently handling all of the Patriots Point insurance coverage.

Reserve for Replacement of Furniture, Fixtures and Equipment

A 50 percent reserve factor was applied to annual depreciation expenses which were calculated as follows:

As is—52 rooms @ \$300 (minimal refurbishing costs)—\$15,600 :8 years—\$1,950 ; annual depreciation expense x0.5 reserve factor—\$1,000/year.

Configuration II.—52 rooms @ \$3,000 (further upgrading of guest rooms, and extensive upgrading of public spaces)—\$156,000 :8 years—\$19,500 ; annual depreciation expense x0.5—\$10,000/year.

Optimal.—80 rooms @ \$2,600—\$208,000 :8 years—\$26,000 ; annual depreciation expenses x0.5—\$13,000/year.

Rental Expenses

Our projections relate to the rental of 90 color television sets, computed on a five-year lease-purchase plan.

Incremental admissions

As previously stated, we have applied a 1.2 factor to LBC&W's March 1974 paid admissions figures in projecting visitor counts to Patriots Point; the 20 percent increase reflects our estimate of added drawing power resulting from the inclusion of SAVANNAH in Patriots Point.

In calculating the value of incremental admissions income, we have assumed the following: *An average visitor group size of 4.2 persons*, based on national tourism statistics, visitation patterns aboard USS NORTH CAROLINA, and our experience over the years with various theme park operations; *admission charges* as shown below:

	1977	1980
Adults.....	\$3.00	\$3.50
Children, 6 to 12.....	1.50	1.75

Note.—Increases in 1980 admissions charges over 1977 charges are due to the expansion of attractions at Patriots Point in the intervening years: the effects of inflation are not included.

Refund policy.—We have assumed a refund of part of the admission charge to non-registered restaurant guests, as described below: "In exchange for the admission ticket, one-half the admission charge will be credited against any food and/or beverage purchases aboard SAVANNAH after 5:00 p.m., or as arranged through the Patriots Point Sales Office."

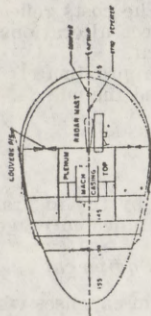
The amount of admissions refunds would not be charged against food and beverage sales, but would be charged against admissions income through an accounting transaction at the end of each day.

Hotel (SAVANNAH) guests will receive a full credit against admissions, the charge to be handled as described for non-registered diners.

EXHIBIT A

NS SAVANNAH

TOP OF HOUSE (0-4 LEVEL)



TOP OF HOUSE

AS IS

- To be converted to an observation deck for all tourists. Will provide a level approximately 85 feet above water line.

CONFIGURATION II

- Add deck chairs for tourists.

OPTIMAL

- No additional changes

AVAILABLE GUEST ROOMS

- None

NAVIGATION BRIDGE DECK (0-3 LEVEL)

AS IS

- Clean all spaces for tours, including pilot house, chart room, radio room.

CONFIGURATION II

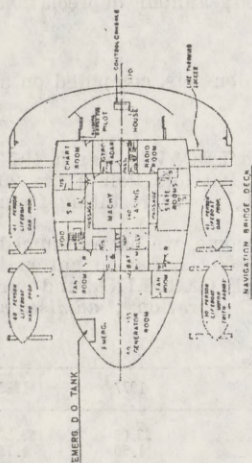
- No additional changes.

OPTIMAL

- Develop 3 large suites and 1 single room:
 - Chart House Suite
 - Communications Suite
 - Officer's Suite
- Add deck furniture on bridge wings.

AVAILABLE GUEST ROOMS, AT OPTIMAL CONFIGURATION:

- 3 large suites
- 1 single room



NAVIGATION BRIDGE DECK

EMERG. D. TANK

NS SAVANNAHBOAT DECK (0-2 LEVEL)AS IS

- Configuration:
 - 10 single staterooms
 - 4 suites
 - Captain's suite
 - Chief Mate's Suite
 - Chief Engineer's Suite
 - 1st Assistant Engineer's Suite
- Install one ice machine for guests.

CONFIGURATION II

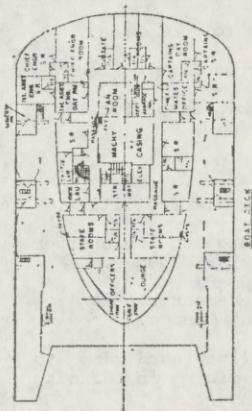
- Refurbish all staterooms.
- Completely refurbish Officers' Lounge.
- Install telephones and color television in staterooms.

OPTIMAL

- Develop:
 - 2 large double rooms from officers' staterooms
 - 4 small double rooms
 - 1 connecting single room (living room configuration)

AVAILABLE GUEST ROOMS, AT OPTIMAL CONFIGURATION:

- 4 suites (2 large, 2 small)
- 2 large double rooms
- 4 small double rooms
- 1 single room (connecting)



NS SAVANNAHPROMENADE DECK (0-1 LEVEL)AS IS

- Open cocktail lounge and main lounge, including card room.
- Open pool, install filtered fresh water system.
- Stock and open novelty shop.
- Refurbish shuttle board facilities.
- Add deck chairs to pool area.
- Install new ice machine at bar.
- Install local compressor for bar refrigeration.

CONFIGURATION II

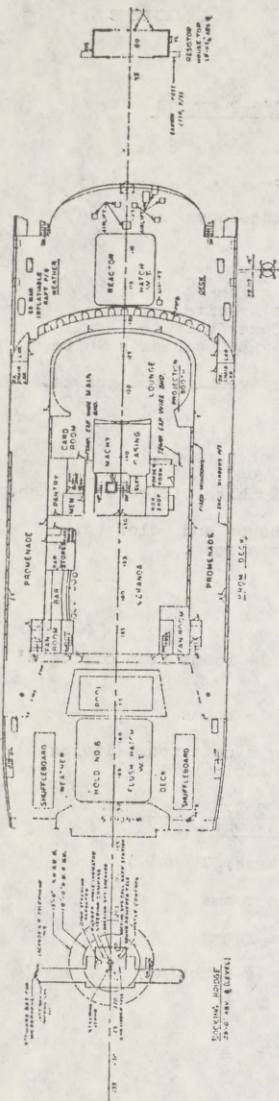
- Refurbish all public facilities.
- Furnish main lounge as living-room environment cocktail lounge.
- Institute limited-menu evening dining in Veranda Lounge.
- Enlarge pantry (into card room) to service evening dining in Veranda Lounge.
- Add cocktail tables, chairs and awnings and/or umbrellas on forward and after weather decks.
- Install telephone system.

OPTIMAL

- Remove #3 cargo boom (for increased visibility from Veranda Lounge).

AVAILABLE GUEST ROOMS

- None



NS SAVANNAH"A" DECK (MAIN DECK)AS IS

- Open all passenger staterooms:
 - 8 doubles, first class (tubs)
 - 22 doubles, second class (showers)
- Open 8 single staterooms:
 - Purser's
 - Chief Steward's
 - Doctor's
 - Laboratory Assistant's
 - Purchasing Clerks's
 - Assistant Purser's
 - Stewardess'
 - Junior Officer's
- Install front desk and associated equipment.
- Clean lobby area.
- Clean all passageways and other public areas.

CONFIGURATION II

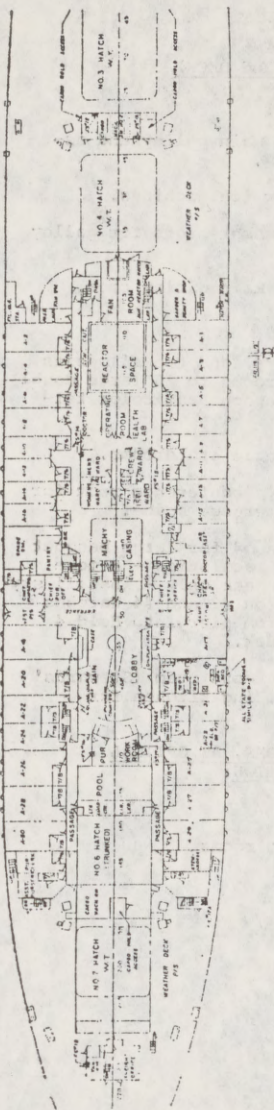
- Upgrade decor and furnishings in all staterooms.
- Install telephones and color television in staterooms.
- Upgrade decor and furnishings in lobby area.

OPTIMAL

- Convert 6 single staterooms to 3 large double rooms:
 - Doctor's and Lab Assistant's
 - Stewardess' and adjoining J.O. room
 - Purchasing Clerk's and Asst's.

AVAILABLE GUEST ROOMS, AT OPTIMAL CONFIGURATION:

- 2 single rooms
- 22 small double rooms
- 11 large double rooms



NS SAVANNAH"B" DECK (2nd DECK)AS IS

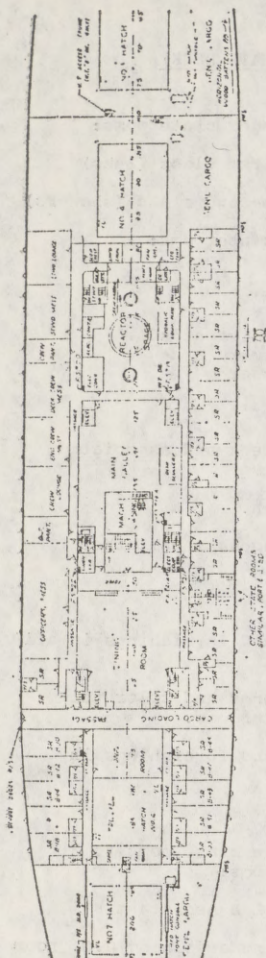
- Clean and open main galley and associated spaces.
- Install two new ice machines.
- Install local compressors for galley refrigeration.
- Clean and open main dining room.

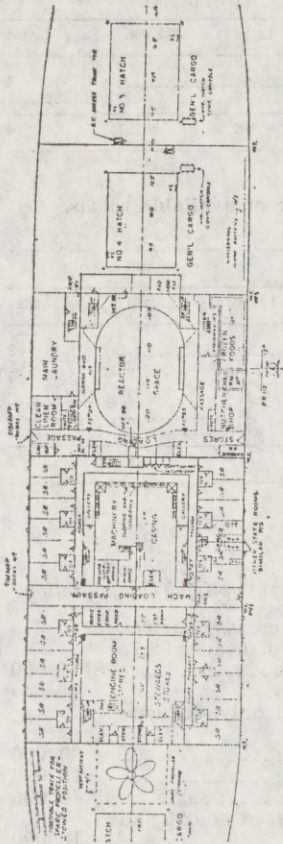
CONFIGURATION II

- Convert officers' and crews' messes and crew staterooms to 16 large double rooms with telephone and color television.
- Refurbish 2 single staterooms.
- Refurbish ship's conference room for additional conference space.
- Open Holds 3 and 4 for large banquet and conference facilities - remove frame 80, this deck only - install skylight ceilings on #3 and #4 Hatches and entrance from pier into Hold 4 from weather deck.
- Modify one break-out room (Stewards' Lounge) for holding kitchen for banquets.

AVAILABLE GUEST ROOMS, AT OPTIMAL CONFIGURATION:

- 2 single rooms
- 16 large double rooms.



NS SAVANNAH"C" DECK (3rd DECK)AS IS

- Clean and open engine room gallery.

CONFIGURATION II.

- No additional changes unless dictated by tourist reactions.

OPTIMAL

- Convert 24 crew rooms to 12 large double staterooms.

AVAILABLE GUEST ROOMS, AT OPTIMAL CONFIGURATION:

- 12 large double rooms

[Exhibit G]

Configuration I.—as is:

NS "SAVANNAH"—SUMMARY OF AVAILABLE ROOMS¹

Level	Singles	Doubles		Suites
		Large	Small	
02.....	10			4
A.....	8	8	22	
Total.....	18	8	22	4

¹ Total rooms—52.

Configuration II.—No change in location or number of available rooms.

Configuration III.—Optimal:

Level	Singles	Doubles		Suites
		Large	Small	
03.....	1			² 3
02.....	1	3	3	² 2
A.....	2	11	22	² 2
B.....	2	16		
C.....		12		
Total ¹	6	42	25	7

¹ Total rooms—80.² Large.³ Small.

[Exhibit H]

NS Savannah preliminary cost estimates in achieving "optimal configuration"

1. Modifications to various staterooms and officers' and crew's quarters, primarily in bulkhead relocation and upgrading of heads; 38.75 spaces, at \$4,000.....	\$155, 000
2. Modifications to cargo holds 3 and 4, B deck level only, for conversion to conference/banquet facility:	
a. Port-side entrance and companionway.....	30, 000
b. Bulkhead work at frame 80.....	15, 000
c. Skylights in hatches 3 and 4.....	40, 000
d. Public toilets, to be located in the area between hold 4 and the reactor space.....	10, 000
e. HVAC.....	40, 000
f. Lighting.....	10, 000
g. Interior, finish wall paneling—3,500 ft ² , at \$10.....	35, 000
h. Ceiling paneling—6,000 ft ² , at \$1.25.....	7, 500
i. Air wall, at frame 80.....	15, 000
j. Contingency, profit.....	35, 000
Subtotal.....	237, 500
3. Miscellaneous modifications to main galley (see note).....	25, 000
4. Construction and equipping of a banquet holding kitchen in present crew's pantry and stewards' mess (see Note).....	30, 000
5. Modifications to veranda lounge pantry (see Note).....	25, 000
6. 6 new ice machines, at \$80.....	5, 000
7. 10 new freezer and cold storage compressors, at \$600.....	6, 000
8. Cost of upgrading decor, furnishings, fixtures, and equipment in 80 guest rooms and in public dining and lounge spaces.....	208, 000
Subtotal.....	299, 000
Total.....	691, 500

Assumes salvage and use of excess equipment presently aboard the ship.

Source: L. & H.; L.B.C. & W., South Carolina.

[Exhibit I]

NS SAVANNAH PATRIOTS POINT NAVAL AND MARITIME MUSEUM PROJECTED STATEMENT OF CASH FLOW BEFORE DEBT SERVICE, 1977 AND 1980

	"as is" configuration		Configuration II		Optimal configuration	
	1977	1980	1977	1980	1977	1980
Rooms department sales.....	\$164,000	\$222,000	\$276,000	\$350,000	\$591,000	\$699,000
Payroll and other expenses.....	49,000	67,000	80,000	102,000	168,000	199,000
Departmental profit.....	115,000	155,000	196,000	248,000	423,000	500,000
Food and beverage department sales.....	212,000	286,000	403,000	545,000	598,000	807,000
Controllable expenses.....	201,000	269,000	367,000	496,000	532,000	714,000
Departmental profit (loss).....	11,000	17,000	36,000	49,000	66,000	93,000
Telephone profit (loss).....			(7,000)	(9,000)	(15,000)	(17,000)
Miscellaneous income (net).....	3,000	4,000	5,000	7,000	12,000	14,000
Gross operating income.....	129,000	176,000	230,000	295,000	486,000	590,000
Undistributed expenses:						
Administrative and general.....	71,000	96,000	71,000	96,000	105,000	116,000
Advertising and promotion.....	29,000	52,000	29,000	52,000	48,000	83,000
Heat, light and power.....	26,000	26,000	26,000	26,000	46,000	46,000
Repairs and maintenance.....	61,000	62,000	61,000	62,000	7,000	71,000
	187,000	236,000	187,000	236,000	269,000	316,000
Gross operating profit (loss).....	(58,000)	(60,000)	43,000	59,000	217,000	274,000
Fixed expenses:						
Insurance.....	2,000	2,000	2,000	2,000	3,000	3,000
Reserve for replacement of FF&E.....	1,000	1,000	10,000	10,000	13,000	13,000
Rental expense.....			8,000	8,000	8,000	8,000
Total.....	3,000	3,000	20,000	20,000	24,000	24,000
Subtotal.....	(61,000)	(63,000)	23,000	39,000	193,000	250,000
Incremental admissions, net of refunds (subsidy from gate ticket).....	269,000	447,000	261,000	436,000	239,000	407,000
Cash flow before debt service.....	208,000	384,000	284,000	475,000	432,000	657,000
Statistics:						
Total rooms available.....	52	52	52	52	80	80
Number of single rooms.....	18	18	18	18	6	6
Room rates.....	\$16	\$18	\$23	\$25	\$26-\$28	\$28-\$30
Number of double rooms.....	30	30	30	30	67	67
Room rates.....	\$18-\$22	\$22-\$24	\$24-\$26	\$26-\$30	\$30-\$32	\$32-\$34
Number of suites.....	4	4	4	4	7	7
Room rates.....	\$30	\$35	\$50	\$50	\$40-\$50	\$40-\$50
Percent of occupied rooms.....	40	52	58	65	64	71
Average room rate.....	\$19.48	\$22.48	\$25.20	\$28.18	\$31.76	\$33.61

Note.—The comments and assumptions contained in this report are an integral part of this projected statement.

CASH FLOW PROJECTIONS—PHASE I, PATRIOTS POINT NAVAL AND MARITIME MUSEUM, CHARLESTON HARBOR, S.C.

LAVENTHOL & HORWATH,
CERTIFIED PUBLIC ACCOUNTANTS,
Philadelphia, Pa., January 15, 1976.

Mr. CHARLES F. HYATT, (Chairman),
Patriots Point Development Authority,
Charleston, S.C.

DEAR MR. HYATT: In accordance with your request, we have prepared the accompanying statements of projected cash flow for the Patriots Point Naval and Maritime Museum. These projections, which appear in Exhibits A and B, relate solely to what might be termed Phase I of Patriots Point, i.e., capital and operating costs of the USS YORKTOWN and NS SAVANNAH, as well as overhead expenses of the Patriots Point staff.

This report is based on estimates, assumptions and other information from reports prepared for the Patriots Point Development Authority by LBC&W South Carolina, Albert Levy Associates and Lavenhol & Horwath, and our meetings with you during which we were provided certain information. The

sources of information and bases of our estimates and assumptions are stated herein. The terms of this engagement are such that we have no obligation to revise this report or the projected financial results to reflect events or conditions subsequent to the date of this report. However, we will be available to discuss the necessity for revision in view of subsequent changes in economic or market factors affecting Patriots Point.

Since the projections are based on estimates and assumptions which are inherently subject to uncertainty and variation depending upon evolving events, we do not represent them as results that will actually be achieved.

Our report and other presentation materials are intended solely for the information of the Patriots Point Development Authority, other members of the Patriots Point project team, related government agencies, and in support of an application with a lending institution for financing the project. They may also be submitted to a hotel franchisor or management firm in order to generate interest in licensing or managing the operation. Otherwise, neither the report nor its contents may be referred to or quoted in any registration statement, prospectus, loan or other agreement or document without our prior written consent.

No effort has been made to determine the possible effect on this project of present or future Federal, state or local legislation relating to environmental or ecological matters, or interpretations thereof. Further, we have not ascertained the legal or regulatory requirements applicable to this project including zoning, other state and local government regulations, permits and licenses.

Very truly yours,

LAVENTHOL & HORWATH.

SCOPE OF STUDY

The purpose of this study was to address the following question: At what level of debt would the operation of YORKTOWN and SAVANNAH be self-supporting? More specifically, what levels of (1) governmental funding and (2) long-term debt financing would allow for necessary capital improvements, initial operating losses and, subsequent to the start-up years, ongoing break-even operations?

The determination of the maximum dollar amount which Patriots Point could afford to borrow before slipping into an operating loss position is, of course, only the first part of a more significant question since, once the start-up years are behind, the project must produce sufficient positive cash flows from operations to support additional capital improvements. Thus, the broader purpose of this study dealt not only with initial funding requirements, but with estimates of the maturing of the project to the point where (1) additional outside funding would clearly not be necessary, and (2) operating cash flows would permit further expansion of Patriots Point (other than through lessee improvements).

SUMMARY

Through use of a computer program which allowed us to vary the values of cash inflows and outflows, and based upon the assumptions described in this report, we have concluded that the following levels of funding appear to represent the *current* optimum approach in financing the placement and refurbishing costs of SAVANNAH and the development costs of initial YORKTOWN displays, as well as off-setting start-up operating deficits. (A central assumption was that maximum Federal agency funding would approximate \$1 million.)

1. As shown in Exhibit A, the combination of \$1 million from various Federal agencies and \$1.8 million from a second capital improvement bond issue would appear to be the appropriate values from the major financing sources which, after consideration of necessary capital costs and operating expenses, would allow for operation of Phase I of Patriots Point at or near break-even over its first five full years, 1977-1981. The investment of early cash flows in a low-risk position where interest would accrue at a nominal rate is shown in the Exhibit A projection to offset the small negative cumulative cash flow resulting in the second year. This combination of Federal assistance and bond issue debt is considered the *minimum* break-even financing requirement for Phase I, under the assumptions set forth in the text of this report.

2. Exhibit B illustrates our recommended approach to the minimum financing requirements discussed above, and differs from Exhibit A only in the assumption of a three-year moratorium on second issue principal, which would provide

Patriots Point a \$95,000 buffer at the "low point" of the start-up period, without any increase in total debt.

BASES OF FINANCIAL PROJECTIONS

Our cash flow projections are stated in 1976 constant dollars. Estimates of operating income and expenses are shown rounded to the nearest thousand dollars.

We have predicated our SAVANNAH capital cost and operating income and expense projections on the assumption that the reconfigured ship would arrive at Patriots Point in late 1976 and open for public use on or about January 1, 1977.

Cash inflows

Bond Issues

Two bond issues were incorporated into our projections. Proceeds from an initial issue have been received by Patriots Point Development Authority (PPDA) and have been largely expended for the placement of YORKTOWN at her site Patriots Point, construction of a pier leading to the ship, painting of the entire exterior hull and the necessary refurbishing of the interior spaces opened to public display on January 3, 1976.

A second issue has been assumed for the purposes of our projections, in the amount of \$1.8 million. The proceeds of this issue would be expended for the following essential capital improvements:

Task:	Estimated cost ¹
Savannah placement/pier/utilities/site improvements	\$1, 000, 000
Conversion of Savannah to "optimal configuration" (per L. & H. report of Nov. 18, 1975)	700, 000
Yorktown displays	1, 000, 000
Contingencies, miscellaneous	100, 000
Total	2, 800, 000

¹ Source: L.B.C. & W., L. & H.

It is expected that Federal funding would make up the difference between the \$1.8 million bond issue and the total requirement of \$2.8 million.

Federal Funding

Federal funding is anticipated from programs through which Congress has authorized financial support of projects providing lasting benefits to communities, such as the programs administered by the Economic Development Administration and the Coastal Plains Regional Commission. Additionally, it is anticipated that funds which would have had to be expended to prepare SAVANNAH for mothballing will be diverted to defray certain costs of readying the ship for public display at Patriots Point.

Currently, the maximum amount expected from Federal sources is \$1 million.

State Funding

It was assumed that State of South Carolina appropriations would be received, to be applied against payroll costs, in the following amounts:

Calendar year:	Amount
1976	\$125, 000
1977	250, 000

Private Donations

Funds available from private sources have been variously estimated at between \$100,000 and \$300,000. We have used the lower end of the range in order to remain conservative in our projections.

Operating Income

There are three sources of funds from operations which would contribute to cash available for operating costs and debt service.

Admissions income was based on visitation estimates contained in LBC&W's March 1974 report to PPDA, L & H's projections of incremental increases in visitation due to the addition of SAVANNAH to Patriots Point, and the following admission fee schedule (shown in 1976 constant dollars):

	Adults	Children- ages 6 to 12
January to March 1976.....	\$2.00	\$1.00
April to December 1976.....	2.50	1.25
Years 1977 and 1978.....	3.00	1.50
Years 1979 to 1981.....	3.50	1.75

Assumptions regarding average visitor group size and refund policies, as detailed in our November 18, 1975 report to PPDA, were continued in this study.

House profit from SAVANNAH's hotel operations was another subject of our recent study. However, since November 18, we have increased our estimates of utilities costs based on more definitive engineering data received from Todd Shipyards Corporation. We have further reduced house profit by the amount of a management fee projected at 7.5 percent of gross rooms, food and beverage sales aboard SAVANNAH; this fee reflects the cost of contracting with a major hotel chain for operation of SAVANNAH's dining, lodging and conference facilities. These deductions and the resulting house profit projections used in this study are shown below:

	1977	1978	1979	1980	1981
Projected house profit before adjustments.....	\$193,000	\$212,000	\$231,000	\$250,000	\$269,000
Less adjustments:					
Heat, light and power.....	26,000	26,000	26,000	26,000	26,000
Management fees.....	89,000	97,000	105,000	113,000	121,000
Total.....	115,000	123,000	131,000	139,000	147,000
Adjusted house profit.....	78,000	89,000	100,000	111,000	122,000

Lease income from vendors and concessionaires was projected to be \$10,000 in 1976 and 1977, and was increased \$2,000 per year thereafter to reflect higher attendance and increased sales on which lease income is partly based.

Cash outflows

Capital Items

The costs associated with obtaining, positioning and preparing YORKTOWN and SAVANNAH were discussed previously under Bond Issues. For purposes of these projections, it was assumed that all of these capital outlays would occur prior to January 1, 1977.

Operating Expenses

Operating expenses are related primarily to PPDA staff overhead and the maintenance of YORKTOWN and the non-hotel facilities and equipment of SAVANNAH. PPDA overhead includes payroll and related expenses, general and administrative costs and provision for fees and expenses incurred by an outside marketing and promotion firm. Projectel amounts were developed by PPDA and L & H.

Debt Service

The initial bond issue was based on a 20-year pay-back at 5.58 percent. A three-year moratorium on both principal and interest expires on July 1, 1977. We have added the accrued interest to the original \$3 million principal and have assumed equal monthly debt service payments, commencing July 1, 1977, over the remaining 17 years.

The second bond issue was assumed to be a 20-year, 7.0 percent debt in the amount of \$1.8 million. Exhibit A assumes equal monthly payments commencing July 1, 1976, while Exhibit B shows the effect on cash flow of a three-year moratorium on principal amortization.

In order to offset the relatively minor negative cumulative cash flow in 1978, it was assumed that earlier cash flows could be invested/deposited at minimum risk, and would earn a nominal rate of interest, e.g., five percent.

[Exhibit A]

PHASE I: PATRIOTS POINT NAVAL AND MARITIME MUSEUM, PROJECTED STATEMENT OF CASH FLOW, INCEPTION THROUGH 1981

	Prior to Jan. 1, 1977	1977	1978	1979	1980	1981
Cash inflows:						
Bond issues:						
Initial issue.....	\$3,000,000					
2d issue.....	1,800,000					
Total.....	4,800,000					
From governmental agencies:						
Federal agencies.....	1,000,000					
State of South Carolina.....	125,000	\$250,000				
Total.....	1,125,000	250,000				
From private donations.....						
	100,000					
From operations:						
Admissions.....	645,000	876,000	\$1,018,000	\$1,376,000	\$1,588,000	\$1,833,000
Savannah house profit.....		78,000	89,000	100,000	111,000	122,000
Lease income.....	10,000	10,000	12,000	14,000	16,000	18,000
Total from operations.....	655,000	964,000	1,119,000	1,490,000	1,715,000	1,973,000
Total cash inflows.....	6,680,000	1,214,000	1,119,000	1,490,000	1,715,000	1,973,000
Cash outflows:						
Capital costs:						
Yorktown placement/pier/re-						
furbishing.....	3,000,000					
Completion of Yorktown dis-						
plays.....	1,000,000					
Savannah placement/pier/etc.	1,000,000					
Savannah reconfiguration.....	700,000					
Total.....	5,700,000					
Annual operating costs:						
Yorktown/PPDA overhead.....	655,000	825,000	850,000	850,000	850,000	850,000
Savannah hull upkeep.....		45,000	45,000	45,000	45,000	45,000
Total.....	655,000	870,000	895,000	895,000	895,000	895,000
Debt service:						
Initial issue.....		160,996	321,992	321,992	321,992	321,992
2d issue.....	83,732	167,456	167,465	167,465	167,465	167,465
Total.....	83,732	328,461	489,576	489,457	489,457	489,457
Total cash outflows.....	6,438,732	1,198,461	1,384,457	1,384,457	1,384,457	1,384,457
Net cash flow.....	241,268	15,539	(265,457)	105,543	330,543	588,543
Cumulative cash flow.....	241,268	256,807	(8,650)	96,893	427,436	1,015,979
5 percent interest earned on cash flow.....		12,063	13,444	843	6,162	22,997
Cumulative cash flow plus interest.....	241,268	268,870	16,857	123,243	459,948	1,071,488

Note.—The comments and assumptions contained in this report are an integral part of this projected statement. Due to rounding, totals may differ slightly from the sum of the components.

[Exhibit B]

PHASE I: PATRIOTS POINT NAVAL AND MARITIME MUSEUM, PROJECTED STATEMENT OF CASH FLOW, ASSUMING 3-YR MORATORIUM ON 2D ISSUE PRINCIPAL, INCEPTION THROUGH 1981

	Prior to Jan. 1, 1977	1977	1978	1979	1980	1981
Cash inflows:						
Bond issues:						
Initial issue.....	\$3,000,000					
2d issue.....	1,800,000					
Total.....	4,800,000					
From governmental agencies:						
Federal agencies.....	1,000,000					
State of South Carolina.....	125,000	\$250,000				
Total.....	1,125,000	250,000				
From private donations.....						
	100,000					
From operations:						
Admissions.....	645,000	876,000	\$1,018,000	\$1,376,000	\$1,588,000	\$1,833,000
Savannah house profit.....		78,000	89,000	100,000	111,000	122,000
Lease income.....	10,000	10,000	12,000	14,000	16,000	18,000
Total from operations.....	655,000	964,000	1,119,000	1,490,000	1,715,000	1,973,000
Total cash inflows.....	6,680,000	1,214,000	1,119,000	1,490,000	1,715,000	1,973,000
Cash outflows:						
Capital costs:						
Yorktown placement/pier/ refurbishing.....	3,000,000					
Completion of Yorktown dis- plays.....	1,000,000					
Savannah placement/pier/etc. Savannah reconfiguration.....	1,000,000					
Total.....	5,000,000					
Annual operating costs:						
Yorktown/PPDA overhead.....	655,000	825,000	850,000	850,000	850,000	850,000
Savannah hull upkeep.....		45,000	45,000	45,000	45,000	45,000
Total.....	655,000	870,000	895,000	895,000	895,000	895,000
Debt service:						
Initial issue.....		160,996	321,992	321,992	321,992	321,992
2d issue.....	63,000	126,000	126,000	153,683	181,367	181,367
Total.....	63,000	286,996	447,992	475,675	503,359	503,359
Total cash outflows.....	6,418,000	1,156,996	1,342,992	1,370,675	1,398,359	1,398,359
Net cash flow.....	262,000	57,004	(223,992)	119,325	316,641	574,641
Cumulative cash flow.....	262,000	319,004	95,012	214,337	530,978	1,105,619

Note.—The comments and assumptions contained in this report are an integral part of this projected statement. Due to rounding, some totals may not equal the sum of their components.

PLANNING DATA FOR USE OF THE N.S. Savannah AT PATRIOTS POINT, S.C.

(By Albert Levy Associates, Inc., 9702 Forest Glen Ct., Silver Spring, Md.)

A Feasibility Report prepared for The State of South Carolina Patriots Point Development Authority with the assistance of the Coastal Plains Regional Commission.

PREFACE

On June 20, 1975, the Patriots Point Development Authority of South Carolina contracted with Albert Levy Associates, Inc., to study the feasibility of using the N.S.SAVANNAH as part of the naval and maritime museum at Patriots Point. The assignment was to assemble and evaluate the materials needed to update those sections of our previous report on use of the N.S.SAVANNAH in Savannah, Georgia,¹ which were applicable to the Patriots Point project and to

¹ Eisenhower Peace Center—N.S. Savannah, June 1973.

develop such new information as applied to Patriots Point specifically. The work was funded from a technical assistance grant which the Patriots Point Development Authority received from the Coastal Plains Regional Commission in May 1975.

The report affirms the feasibility of the acquisition of the N.S.SAVANNAH for Patriots Point and the great benefits to be derived from adding the ship to the exhibits and facilities offered at Patriots Point. The report does not advocate a single approach to financing the project but supplies the data with which to reach the necessary decisions. These data also provide the basis on which advantageous terms can be negotiated with government agencies and others interested in supporting the project.

For this report to be useful, a considerable amount of new information had to be located in a relatively short time and, once obtained, had to be validated further in personal interviews and contacts. This included support for the introduction of new legislation in the Congress, the new port plans for the ship to be issued by the Maritime Administration, site engineering data and installation costs for the ship at Patriots Point, and the Maritime Administration's engineering specifications for the layout preparations for the N.S.SAVANNAH. A thorough review of our project files yielded essential documentation on interim developments since the completion of our Georgia report such as agreements worked out in compliance with congressional mandate between Federal and State regulatory agencies on the safety surveillance and ultimate disposition of the ship's deactivated reactor plant. Last, but not least, extensive discussions were held with officials of the Coastal Plains Regional Commission and the Economic Development Administration to assure the validity of our funding recommendations.

Advance distribution was made to the members of the Patriots Point Development Authority of schedules, engineering specifications, documentation and related background materials as soon as they were obtained for this report or as needed for briefings of the Authority in Columbia on June 20 and in Savannah on July 12, 1975, and in further meetings in Greenville on July 2 and in Washington, D.C., at the end of July.

We wish to express our gratitude to the Chairman and all of the Members of the Patriots Point Development Authority and to the staff of the Authority: it has been exciting and rewarding during the past few weeks to be associated with this purposeful and dynamic team. And a special debt of gratitude is owed to the Chairman of the N.S.SAVANNAH Subcommittee and Vice Chairman of the Authority, Alex C. Crouch, the members of the subcommittee, and the Authority's Executive Director, RADM Herman J. Kossler, USN (Ret), for the continued help and guidance. And we also wish to acknowledge the effective collegial collaboration of Paul McGowan and his associates on the LBC&W team under contract to the Authority, whose contributions as directed by the work statement are included in the report with appropriate credits.

Dr. Albert Levy served as project director for the study and Dr. Levy and G.Fred Steele, Jr. were the principal investigators.

1. EXECUTIVE SUMMARY

The purpose of this report is to assist the Patriots Point Development Authority in deciding whether to obtain the N.S.SAVANNAH for use at Patriots Point in the merchant marine part of the project. The Authority sought information on the economic and financial feasibility of acquiring and operating the ship for the proposed use and on the legislative, technical and safety aspects of such an undertaking.

Where applicable the report is based on the prior ALA report for use of the ship in Savannah, Georgia. But it is essentially a new analysis and is oriented to the requirements of, and opportunities at, Patriots Point.

If legislation now before the United States Congress passes, the Secretary of Commerce will be authorized to offer to transfer title to, and ownership of, the N.S.SAVANNAH to Patriots Point for any use other than for transportation.

It will cost an estimated \$902,000 to prepare a site at Patriots Point for the ship and to prepare the ship to receive visitors.

For the full operation of all spaces aboard the ship to be opened for public use an annual budget of \$215,000 is required, consisting of a personnel payroll of \$137,000 (including benefits) and a sub-budget for maintenance, utility service and normal repairs of \$78,000.

In full operation the ship will generate for Patriots Point an estimated additional income of \$300,000. This figure can be increased considerably by effective management and intensive promotion. At \$300,000 the yield over operational outlay would be \$85,000.

In the non-transportation mode the ship has a present salvage/scrap value of \$3 million. If the ship becomes the property of Patriots Point, the scrap value of the ship could be pledged as security for any start-up loans or bond issues to finance the initially unfunded part of the project.

(Funding from Federal sources is estimated to be available within 2-4 months) from application to the extent of \$650,000, chiefly from the Coastal Plains Regional Commission and the Economic Development Administration. These are technical assistance funds for economic development through expansion of tourism. In addition, so-called Title X funds (Job Opportunities Act) for the creation of new employment through the support of labor-intensive projects—which could be applied to the site preparation and landscaping for the N.S.SAVANNAH exhibit as well as other parts of Patriots Point—can contribute a further \$150,000, aggregating to a total of \$800,000.

The deactivated reactor on the ship is without fuel element and will be rendered permanently inoperable before delivery of the ship to Patriots Point. But because of the residual radioactivity in the reactor vessel, the reactor plant will remain permanently under the cognizance of the Federal Government. Under an existing agreement between the (Federal) Nuclear Regulatory Commission (formerly, the Atomic Energy Commission) and the State of South Carolina, the State can maintain the required continuing surveillance of the reactor. The Federal Government retains responsibility for the ultimate entombment in place of the reactor if the ship is scrapped or for its transfer to a disposal/storage site elsewhere.

We recommend that the N.S.SAVANNAH project for Patriots Point be scheduled initially at \$1,117,000 for the first eighteen months from start in order to fund the preparation of site and ship essentially during the first six months and to advance the funds for the next full calendar year's operations. Some operations aboard the ship can be opened to public use probably within 4 months from start of the project and, with added resources and intensive effort, earlier. The comparable experience with the USS Alabama Memorial in Mobile, Alabama, and the USS North Carolina in Wilmington, North Carolina, has been that similar visitor volume projections and earning forecasts were sustained and loans against original outlays of the magnitude involved here were repaid from earnings in less than the scheduled 10 years.

Use of the N.S.SAVANNAH would be a spectacular and unique way to open the merchant marine part of the Patriots Point project. It would provide Patriots Point not only an outstanding exhibit, but create a facility for a wide variety of associated—and self-sustaining—uses. These include an energy exhibit and technological museum, restaurant, snack-bar and gift-shop concessions, conference center and special expositions and trade fairs, and possible use of the passenger and officers' cabins as a "shiptel" and of the crew quarters as a well-equipped youth hostel.

After the initial inphasing of the N.S.SAVANNAH operation, it would continue, with prudent management, on a better than self-sustaining basis. As an operating entity it would be likely to attract additional funding of a memorial nature and from current usage by maritime and trade and industrial interests in the private sector and from additional governmental sources such as the regional and maritime museum programs of the Smithsonian Institution.

Addition of the N.S.SAVANNAH will augment the income of Patriots Point chiefly through increasing the length of stay of visitors, augmenting the number of repeat visitors, and use of facilities and activities not otherwise available at the project.

Addition and full use of the N.S.SAVANNAH will create substantial new employment of a permanent nature at several skill levels and will boost further the widespread effects of the increase in tourist-dollar expenditure generated by Patriots Point for South Carolina generally and the greater Charleston area in particular.

2. MARKET ANALYSIS

The market analysis for the use of the N.S.SAVANNAH at Patriots Point must address three major categories of information: (1) The uses planned or available for the ship; (2) the usership volumes that can be generated; and (3) the income that projected usership can produce.

2.1 Uses

As a merchant ship designed to carry passengers and cargo, the N.S. SAVANNAH will offer a great variety of potential uses at Patriots Point. These uses are summarized in Table 2-1. The space requirements for these uses can be fully met by opening all of the areas recommended under the maximum-usage option in Chapter 5 of our Savannah report.² Essentially the only part of the ship not available for further use is the reactor compartment, i.e. the area immediately adjacent to the defueled reactor.³

TABLE 2-1.—*Proposed uses for N.S. Savannah at Patriots Point*

1. Tour Exhibit and Technological Museum
2. Restaurant, Snack Bars, and Gift Shop
3. Conference Center and Meeting Rooms including residential conference-center use (60-100 persons)
4. Special Expositions and/or Trade Fairs (multilevel use of hold spaces; possible Foreign-Trade Sub-Zone designation for Trade-Fair Use)
5. Use of First Class and Officers' Cabins as "Shtpetl" on lease
6. Use of Crew Quarters as well-equipped Youth Hostel especially for Bicentennial visitors
7. Training Center

From the viewpoint of producing maximum income at an early date, the development of the various uses of the space aboard the ship would be intensive and proceed with all possible dispatch. By their nature, the different uses may have to be phased into operation more or less sequentially. But the ship can be opened for spectator-visitor tours as soon as access piers, approaches, and parking have been completed and the utilities connected to the ship. Souvenir and gift shop services can begin as soon as the shop location(s) aboard have been arranged and stocked.

Food services can begin at an early stage in limited fashion. When kitchen, restaurant and bar-lounge spaces have been taken into operation, a full range of food and beverage services can be offered.

If the ship is delivered to Patriots Point in a clean and safe condition, the conference-center and meeting/social room areas can be used at an early date. The residential quarters can be opened as soon as operational-lease or direct administrative arrangements have been made and the consumable supply requirements have been met.

More leadtime will be required for development of the hold areas, construction, and acquisition and installation of displays. But this latter work can proceed without obviating earlier initiation of the visitors' inspection tours and use of the food-service, conference-center, and residential quarter areas.

All spaces to be used aboard the N.S. SAVANNAH can be in a mode of full operation—and serve as income generators for Patriots Point—within six months from the installation of the ship at Patriots Point.

Once the ship is transferred to the ownership of the Patriots Point Development Authority, all uses of the ship's space will be fully at the Authority's decision and under its control. This will include, for example, the decision on what food and beverage services will be offered. This type of decision is unrestricted as far as the N.S. SAVANNAH is concerned once title has passed effectively, as distinguished from the terms under which the United States Navy transfers title to historic ships to recipient organizations. Thus the only restrictions that will apply to the public areas of the N.S. SAVANNAH will be the laws and regulations (including health and environmental regulations and revenue laws) that apply to similar activities and facilities ashore.

2.2 Usership volumes

The principal question is whether the N.S. SAVANNAH will attract an increased number of visitors to Patriots Point and measurably add to the income previously projected for the venture. The answer to all parts of the question is

² See pages 60-62 and 65, including figure 5-1 and table 5-4. See also annex A.

³ The ship's reactor is now inoperable. With the fuel element removed, the reactor plant retains only residual radiation which will remain permanently under government surveillance (see section 4, below, for further details).

strongly affirmative. But the documentation of that answer must be carefully developed and a number of choices and decision-alternatives must be evaluated conscientiously.

Addition of the N.S. SAVANNAH to the offerings of Patriots Point will inaugurate and highlight in the most attractive and advanced manner the merchant-marine part of the project theme. The addition will also provide new facilities for new dimensions of activity to the project and thereby broaden impressively its potential economic base. The addition will double at once the book value of the project's assets.⁴

2.2.1 Inspection tour visitors

The early inauguration of the merchant-marine part of Patriots Point with the use of the N.S. SAVANNAH will attract additional visitors by virtue of the broadened interest appeal. But firm forecasts of this increase would be hazardous and it would be equally hazardous to base forward planning on predictions in this area until current survey data can be gathered and analyzed from actual usage of the ship at Patriots Point. Since then essentially the same number of tour visitors will visit as spectators the N.S. SAVANNAH as are attracted to the Patriots Point project as such, the ship's principal contributions in this respect will be to lengthen the stay of the visitors once attracted to the project and to generate repeat visitorship. These contributions will turn out to be important earning factors for the project's income; and they will in addition provide the basis for increases in the earnings obtained from the other activities and services provided aboard.

For the first operating year an attendance of 300,000 admissions was given in the LBC&W forecast for Patriots Point prior to the inclusion of the N.S. SAVANNAH in the planning.⁵ This projection compares appropriately with the annual figure of 280,000 admissions which we projected for the N.S. SAVANNAH if used for the Eisenhower Peace Center in Savannah.⁶ Our forecast was based in large part on the travel patterns and trends in the same South Atlantic corridor that includes the Patriots Point location. Our forecast was made in 1973; the LBC&W forecast for Patriots Point was made in 1974. The LBC&W forecast took into account the effects of the 1973-74 gasoline shortage on travel patterns and travel-mode choices and adjusted for these also in their forward projections. From our experience with subsequent work in Savannah, from studying there further—so to speak, in a parallel manner with the progress of the research for Patriots Point—the subsequent effects on Savannah travel patterns and convention visitorship of the aforementioned shortage, and from a careful perusal of more comprehensive recent analyses for South Carolina,⁷ we find good support for the LBC&W estimates.

Using then the basis of the LBC&W figures for Patriots Point prior to the addition of the N.S. SAVANNAH, we suggest that the addition of the ship can increase the initial repeat visitorship and lengths of stay so as to boost the predicted attendance by the equivalent of up to 25 percent. While repeat visitorship increases the volume of admissions, lengthened stays are reflected in increased earnings from services and other facility usage. Both types of increase have an important multiplier effect on tourist dollars spent also elsewhere in the Charleston area, with lengthened stay normally credited with the most advantageous result.

For the Savannah study we detailed, after careful and intensive research, the probable composition of the visitor totals, prorating them by differential per-person admission charges. This approach has usually proved helpful in maximizing attendance but is also useful in deciding allocations for promotional budgets and optimizing the scheduling of visitor tours and facility usage. In view of the correspondence between our estimate totals for Savannah and the LBC&W totals for Patriots Point as well as the other cited points of comparability, the categories of visitors identified for the Savannah study and the related percentages of the total visitorship as well as the prorated admission charges are furnished in Table 2-2:

⁴ The book and/or loan value of the ship as an asset is discussed further in section 3.

⁵ LBC&W Consultants, *Patriot's Point Development Concept Program*, March 1974, pages 22 and 24.

⁶ ALA, *Eisenhower Peace Center—N.S. Savannah*, op. cit., pages 22-24, 78.

⁷ ALA interviews Charleston, Columbia, and Myrtle Beach, S.C.; also report of Dr. Arch G. Woodside, 1973 *South Carolina Travel Study*, 1974.

TABLE 2-2.—PROJECTED SHIPS' TOUR VISITOR COMPOSITION

Types of visitors	Percent of total number of visitors	Admission price category
Tourist visitors (adult).....	65	Full price.
Convention visitors.....	17	30 percent price reduction.
Promotional tourist visitors.....	8	20 percent price reduction.
Student-group and under-12 visitors.....	10	60 percent price reduction.
Total.....	100	

The tourist visitor provenance and destinations in our Savannah study⁸ also correspond to the findings of the subsequent LBC&W study for Patriots Point.⁹

2.2.2 Other activities

The addition of the N.S.SAVANNAH to Patriots Point will open other activity dimensions beyond the inspection tour of the ship alone. While only contingently envisaged for Savannah, full usage of all passenger areas and use of major parts of the cargo hold areas are planned for Patriots Point from the beginning or as soon as these various areas can be phased into operation. This is reflected in the wide variety of uses listed in the preceding Table 2-1 for the ship and its amenities.

While such extensive and intensive use of the ship entails further preparation and operational outlays, it also creates major new sources for income from other than admission fees. And this can be the major contribution that the ship can make also from a budgetary viewpoint to the development of Patriots Point and to the project's income potential. In addition to the effective increase in the tour visitor volume described in the preceding subsection, the yield from the additional usage of the ship's facilities and equipments can increase projected net income generated by the ship at another 20 percent during the initial three years of operation. With careful planning and further preparation, this potential additional income can reach from 25 to 30 percent during the first ten years of operation, depending on the public acceptance of what is being offered. This implies that the restaurant operation aboard the ship, for example, proves not only attractive to tour visitors, but that the use of the restaurant becomes "a thing to do" for residents of the greater Charleston area and nearby communities. And similarly, the conference-center operation must become so effective as to be highly (and widely) "marketable".

2.3 Income

If the use of the N.S.SAVANNAH at Patriots Point increases admissions by 25 percent relative to the previously projected volume, an additional total annual admissions income of \$225,000 can be forecast for the initial three years of operation.

If the use of the N.S.SAVANNAH at Patriots Point is such that within six months from the installation of the ship all passenger (and possibly crew) spaces and the selected cargo hold spaces are utilized or available for use, an additional \$225,000 of income can be generated during a full year's operation.

The above projections, based on the previously described high (but attainable) usership volumes and composition, can increase the previously scheduled income of Patriots Point by up to \$500,000 annually and under optimal conditions by more. And this forecast does not even include the derivatively generated economic benefits for other area business activity or the benefits derived from increased local employment opportunities created directly and indirectly.

Even under optimal conditions, the inphasing of all uses of the ship's spaces will have to proceed sequentially. Considerable organization, planning, physical preparation and promotion will have to precede the full usage eventually envisaged and recommended. We suggest, therefore, that for budgetary planning an average total of \$300,000 be used to estimate the additional income generated by the N.S.SAVANNAH during each of the first three full years of operation as part of the Patriots Point project.

3. FINANCIAL ANALYSIS

The financial arrangements for preparing and opening the N.S.SAVANNAH for use at Patriots Point are in some respects more complex than those orig-

⁸ ALA, *op.cit.*, page 24.

⁹ LBC&W, *op.cit.*, pages 16-18.

inally planned for Savannah because more is to be offered from the beginning and, as will be explained below, new sources for funding have become available. The cost data for the financial estimate have been developed in a very short time but with considerable effort at verification and validation. But they remain nevertheless estimates, to be affirmed only when bids are requested and responses are evaluated. Current experience with development of other activities at Patriots Point gives the estimates much realism.

Taken from the previous Savannah study are the data on the ship's condition, the determinations of usable space aboard, and the preparations required for use of that space. Maximal usage of the space then requires use of the upper-limit estimates from the Savannah study. Fuller usage creates a greater revenue potential for Patriots Point, but it carries with it the need for greater initial preparatory and subsequent operational outlays.

The derivation of the projected income figures has been described in the preceding section.

3.1 Costs

There are basically two sets of costs to be considered for the addition of the N.S.SAVANNAH to Patriots Point: (1) Preparation of site and ship and installation of ship at site; and (2) Annual operating costs for use of the ship.

3.1.1 Preparation of site and ship

The preliminary estimate for the cost of preparing the site and installing the ship for use at the proposed site is summarized in Table 3-1. The estimate, as prepared by LBC&W, is for a total of \$902,000. Details of the site proposed for location of the ship, the proposed method of storage, etc. are described further in Section 4.4, below.

The LBC&W estimate does not include the cost of "site acquisition" since the site for the N.S.SAVANNAH at Patriots Point, as the remainder of the area for the Patriots Point project, are considered "available" or "obtained". Since participation of the N.S.SAVANNAH in the amortization of the original site acquisition costs was not posed as a task for this review, it is not considered further as a specific cost item here. It should be recalled, however, that acquisition of a suitable site was one of the obstacles that ultimately prevented implementation of the project proposed earlier for Savannah.

The LBC&W estimate also makes provision for "contingencies" (item 11 in Table 3-1). These "contingencies" are taken to be of an "engineering" nature instead of the financial kind. Thus the contingencies may relate to problems encountered in work at the site or aboard the ship. But they can not be expected to be used for defraying dock or anchorage charges in the event that the ship must wait in the Charleston port area before actually being moored at the final location at Patriots Point.

TABLE 3-1.—Estimated costs for installing the N.S. Savannah at Patriots Point

Work to be performed:	Cost
1. Dredging.....	\$175, 000
2. Pier.....	200, 000
3. Mooring dolphins.....	25, 000
4. Ballasting.....	55, 000
5. Backfill around hull.....	42, 500
Total.....	667, 500
6. Site utilities:	
a. Water.....	47, 000
b. Sanitary sewer.....	22, 000
c. Electricity and communication.....	37, 500
d. Pile bents for utilities.....	63, 500
Total.....	170, 000
7. Landscaping (drainage/grassing/grading).....	50, 000
8. Preparation of ship (cleanup/furniture/air-conditionier).....	50, 000
9. Engineering services (including surveys and borings).....	80, 000
10. Construction supervision.....	12, 000
11. Contingencies (5 percent).....	42, 500
Total.....	902, 000

Source: LBC&W South Carolina, July 18, 1975.

For the uses we have envisaged for the ship's spaces, the estimate for "preparation of ship" (item 8) must be approached with caution. Basically this item does not include the measures to repair and preserve the hull nor the repainting and refurbishing of the ship's superstructure and interior spaces. The preparation item is in addition to any of the basic maintenance work that would be accomplished by the Maritime Administration prior to turning over the ship to Patriots Point. The ship is now undergoing repairs and preparation for layup in the Reserve Fleet. The nature and specifications of this work are detailed further in Section 4.3, below. If, within the schedule constraints shown in Section 4.1, below, and predicated upon the legislative actions described in Section 4.2, the Maritime Administration contracts can be modified (and/or novated) in time in such a manner as to avoid having work done that would not prepare the ship for use at Patriots Point, the additional sums scheduled by LBC&W for preparation of the ship would indeed be sufficient to accomplish their purpose. Otherwise new additional outlays must be scheduled.

Finally, the LBC&W estimate contains what might be called a "transferable" item, the allowance for "Landscaping, etc." (item 7). This labor-intensive item is not unique to the installation of the N.S.SAVANNAH. In fact, it will probably be accomplished at the same time or near the same time when similar work must be performed also for other parts of the Patriots Point property. Because of the need to include this item, we extended our search for potentially available funding also to this area. And the results of that search disclosed that this type of activity could indeed be covered by newly available funding from Federal programs. Thus, although our inquiries were made specifically in connection with the N.S.SAVANNAH project segment, the results are applicable to all of Patriots Point. If the landscaping item is thus covered by specially available funding and if, as it were, this determination generates funding also for other similar work required at Patriots Point, the total of the LBC&W estimate can at least be lowered—relatively speaking—by the value of this item. This will again be taken into account when provenance of funding is addressed below.

3.1.2 Organization and operations

The annual operating costs for the N.S.SAVANNAH at Patriots Point will consist, in turn, of two major categories: (1) payroll; and (2) utility-service, maintenance and supply costs. We estimate annual operating costs at \$215,000.

The proposed payroll has been recalculated from the Savannah study to reflect appropriately the different general use of the ship at Patriots Point from that originally proposed for Savannah.¹⁰ At Patriots Point a general overall organization is now in being and operating as a going concern. On the other hand, as an operating organization the present staff of Patriots Point cannot be expected to shoulder major new and continuous burdens without augmentation of personnel. Thus, if the new ship is to be truly a worthwhile addition to the project, it must produce sufficient income to "carry its own weight" financially, including its payroll burden.

The staff proposed in Table 3-2 reflects the requirements of the ship as an operation at Patriots Point while at the same time reflecting those findings from our Savannah study that are applicable to the operational characteristics of the ship as such in a non-transportation mode. The staff schedule does include management supervision and administrative liaison for contractors, concessions aboard, and leased operations. It does not provide for operation directly by the Patriots Point Development Authority of the passenger spaces as a "shiptel" or of the restaurant. If these latter facilities are to be operated by the Authority, provisions for a supplementary budget and supplementary payroll must be made.

¹⁰ ALA, *op.cit.*, at page 79.

TABLE 3-2.—Annual operating cost estimate for N.S. Savannah at Patriots Point

Payroll:	
Manager.....	\$25,000
Secretary and administrative assistant.....	7,000
Assistant manager, activities.....	18,000
Research analyst.....	10,000
Assistant manager, facilities and services.....	16,000
Clerk.....	6,000
Maintenance and repair, 2 men.....	22,000
Guard/night watchman.....	6,000
	110,000
Total payroll.....	110,000
Benefits.....	27,000
	137,000
Operating expenses:	
Office operating expenses.....	8,000
Utilities.....	10,000
Promotion, activity solicitation and implementation.....	30,000
Contracted repairs.....	10,000
Maintenance supplies.....	10,000
Contingency fund.....	10,000
	78,000
Total operating expenses.....	78,000
Total annual operating costs.....	215,000

The staff proposed for the N.S.SAVANNAH totals nine, with a total payroll of \$137,000, which includes full fringe benefits. The manager for the ship would report directly to the Executive Director of the Patriots Point Development Authority. Under the latter's direction, he would administer and supervise all visitor activities and leased operations and concession aboard. He would have a general secretary and administrative assistant who would also serve as facility bookkeeper and liaison with the central finance operation.

For the tour arrangements, functions, activities, and theme operations there would be a qualified and experienced assistant manager, supported by a research analyst (preferably with museum and survey-techniques experience). The staffing of these latter two positions may be delayed until the ship is in full operation because the manager will initially address most of the planning matters aboard the ship himself. On the other hand, the locating of displays and artefacts, negotiating for their acquisition or loan, coordinating their transfer and delivery, and obtaining the required funding might initially be accomplished with less delay and greater resources by contractual help. In that case, similar overall budget figures would apply.

Provision for a manager of facilities and services, with his own maintenance staff and an additional watchman's slot, would keep the N.S.SAVANNAH from becoming an excessive burden on the present Patriots Point work force. The watchman or guard need not be assigned to the N.S.SAVANNAH alone, but it is felt that the SAVANNAH budget should generate at least one additional security force position.

The estimates for the cost of utility services and for maintenance and basic supplies were kept at the same level as those previously validated for the Savannah report.

3.2 Financing

The financing requirements for the N.S.SAVANNAH at Patriots Point divide, as the costs, chiefly into the financing of the preparatory work and the advancement of initial operating funds until they can be earned back from current income. To cover the six months of preparation of site and ship and progressive use of the ship's spaces and facilities and the immediately following first full calendar year of operations—for a total period of eighteen months from start—an estimated \$1,117,000 is required.

Our Savannah report established the value of the ship as amply adequate to secure a loan in that amount and our findings were subsequently endorsed by a

committee of Savannah bank officials and financial advisers.¹¹ And the "earning capability" of the ship as derived from the visitor volume forecast and other proposed uses appears sufficient, as has proved to be the case with the USS Alabama Memorial in Mobile and the USS North Carolina in Wilmington, to repay a loan of the indicated size with interest in ten years or less.¹²

Intensive recent investigation for this assignment has established, however, that the financing of the addition of the N.S.SAVANNAH to Patriots Point might be accomplished more expeditiously and more advantageously. The sources for this financing have been summarized in preliminary fashion in Table 3-3. This listing concentrates on Federal and non-governmental sources so as not to detract from current and prior commitments to Patriots Point.

TABLE 3-3.—FEDERAL GOVERNMENT AND NONGOVERNMENTAL SOURCES FOR FUNDING N.S. SAVANNAH AT PATRIOTS POINT

Departments/agencies	Departmental elements	Programs
GOVERNMENTAL		
Principal sources:		
Commerce	Coastal Plains regional commission. Economic Development Administration. Maritime Administration	T.A., tourism promotion, excess property. T.A., title X. Modification of layout preparation specifications.
Interior	Bureau of Outdoor Recreation	
Other sources:		
American Revolution Bicentennial Administration.		
Energy Research and Development Administration.		
Health, Education, and Welfare	Office of Education	
Labor		
National Trust for Historic Preservation		
National Oceanic and Atmospheric Administration.		
Nuclear Regulatory Commission		
Smithsonian	Regional and maritime museum programs.	
NONGOVERNMENTAL		
Foundations		
Kings' Point Alumni Association		
Maritime trade organizations		
Private industry		
Propeller Club of the United States		
Labor unions		

3.2.1 Initial financing from Federal programs

Inquiry to date has confirmed that three categories of financing may be available for implementation of the N.S.SAVANNAH project at an early date: technical assistance funds for the promotion of tourism and economic development from the Coastal Plains Regional Commission and the Commerce Department's Economic Development Administration respectively and funding for labor-intensive tasks under the Job Opportunities Program (Title X, Public Works Act, and Section 301 of the Emergency Jobs and Unemployment Assistance Act of 1974) as also administered by the Commerce Department. If a definitive decision is made to proceed with the N.S.SAVANNAH project for Patriots Point, prompt application should be made to the Coastal Plains Regional Commission for a technical assistance grant of \$250,000 and to the Economic Development Administration for a technical assistance grant of \$400,000. For the labor-intensive category, the project's scheduled landscaping, drainage, grading, and grading requirements would render Patriot Point eligible for Title X funding. For the SAVANNAH development alone an outlay of \$50,000 has

¹¹ Letter from Malcolm Bell, Jr., Chairman, Savannah Port Authority Committee on N.S. Savannah, to George E. Patterson, Jr., Chairman, Savannah Port Authority, November 19, 1973; copy on request.

¹² ALA, *op.cit.*, pages 34-36 and esp. 80.

been scheduled (as listed in Table 3-1, item 7, above); but for Patriots Point even before the SAVANNAH planning an outlay of \$190,000 had already been suggested for site improvements by LBC&W in their 1974 report. Thus the previously cited "transferable" landscaping item for the N.S.SAVANNAH might be conjoined with the previously scheduled overall site improvement expenditure for a funding application of \$200,000 or more.

With at least the technical assistance funding, well over one half of the financing required to get the N.S.SAVANNAH segment of Patriots Point under way would be on hand. Title X funding, solicitation of funding from the other sources listed in Table 3-3, and income over cost from operations can substantially meet the balance. But use of this funding approach implies flexibility in applying available funding to the authorized purposes, if necessary, throughout the Patriots Point project and possibly "reimbursing" the SAVANNAH segment with services (e.g. dredging) or site improvement materials for which the technical assistance programs do not pay. And if prospective revenue over cost is used as a funding source, the aforementioned loan approach (issuance of bond obligations, etc.) will have to be activated. This may be necessary in any event in order to provide the necessary operating funds for the ship during the inphasing period and for the first year of full operation.

3.2.2 *Current income projection*

Based on the visitor volume projection of Section 2 and the ship's tour visitor-ship composition of Table 2-2, minimum annual receipts from increased admissions and concession and food services are expected to reach \$300,000. This does not include income from shiptel or conference-center operations but does include increases in visitorship generated by special exhibits or trade fairs. With the projected annual budget requirement of \$215,000 for the basic operation of the N.S.SAVANNAH,¹³ the cash flow would generate \$85,000 for interest set-aside, repayment of the principal loan balance, and—increasingly—the development reserve.

It is realized that if the N.S. SAVANNAH is accepted for Patriots Point, the ship will form an integral part of the entire project. For the visitor there will be no distinguishing in the admissions price whether he chooses to visit only one ship or all of the ships. But for the purpose of the present decision-making with respect to the N.S.SAVANNAH, a distinct and separate budget approach had to be used in the analysis, however artificial in the eventual practice.

It should be pointed out here, however, that if major restaurant operations are leased aboard the ship, a method for direct access to the ship may have to be developed for patrons bound for the restaurant only. This may require a reimbursement arrangement for the admissions charge levied at the front gate, possibly by partial or full credit on the lunch or dinner check. And the same may apply to conference-center visitors. The latter might be equipped with gate passes. For security purposes no separate approach to the N.S.SAVANNAH is proposed and the matter is therefore not further developed in the site and location discussion of Section 4.4, below.

3.2.3 *Income from other sources*

The other Federal and non-governmental sources of funding for the N.S.SAVANNAH project will require careful cultivation by specific and timely applications and promotions. Some of these sources might contribute early and substantially, possibly already to the development phase. Others are restricted to support of operating ventures. And where the private sector is concerned, the decision to accept the ship must already have been made before contributions can be expected. Eventually considerable funding can be expected in this area for maintenance, improvement, and expansion of the N.S.SAVANNAH activities and offerings. But for the development phase contributions may be limited to \$50,000 and their receipt will be predicated on intensive solicitation efforts.

4. SCHEDULE CONSTRAINTS AND ACTION REQUIREMENTS

Following the inability of the City of Savannah to meet the schedule imposed by the Maritime Administration for obtaining the N.S.SAVANNAH, the Patriots Point Development Authority expressed its interest in obtaining the ship during a visit aboard by Authority members on April 17, 1975 and by a formal letter

¹³ As shown in table 3-2, above.

to the Maritime Administrator, the Assistant Secretary of Commerce for Maritime Affairs, of April 28, 1975.

While acknowledging the interest and efforts of the Patriots Point Development Authority, the Maritime Administration nevertheless proceeded with the implementation of the plan to prepare the ship for permanent layup in the Reserve Fleet No. 5 off Beaumont, Texas. Contracts were let for Maryland Drydock Corporation to inspect, repair, and apply preservative materials to the hull of the ship and for the Detyens Shipyard in Charleston, South Carolina, to prepare the superstructure of the ship and its interiors for the layup.

The ship left Savannah, Georgia, on July 28, 1975, in tow bound for the Baltimore drydock. This set in motion a series of actions that provide the context in which the decision must now be reached by the Patriots Point Development Authority whether to accept the ship, in what form and under what conditions, if it is offered. This action context was the substance of our preliminary briefing to the meeting of the Authority aboard the N.S.SAVANNAH in Savannah on July 12, 1975.

TABLE 4-1.—*Schedule of actions relating to ship offer to Patriots Point (1975)*

July 28.....	N.S. <i>Savannah</i> to depart Savannah, Ga., in tow for Baltimore.
August 3.....	Ship to arrive in Baltimore to enter Maryland Drydock for hull work (MARAD contract).
August 7.....	Ship to depart Maryland Drydock in tow for Charleston, S.C.
August 11.....	Ship to enter Detyens Shipyard, Charleston, S.C. (Mt. Pleasant) for layup preparation of superstructure and interiors (MARAD contract).
August 31.....	Ship scheduled to depart Charleston, S.C., in tow for Beaumont, Tex., Reserve Fleet.
Open.....	Completion of layup preparations for ship in Beaumont Tex.
September 3.....	Siting and securing of ship in layup anchorage.
September 18.....	Congress reconvenes.
	Earliest likely hearing of House Merchant Marine Subcommittee for H.R. 8741 (estimate; see section 4.2.1, below).
October 1.....	Earliest likely date for House vote on H.R. 8741 (estimate).
	Earliest likely date for Senate vote on S. 2142 (estimate; see section 4.2.1, below).
October 20.....	Earliest likely date for Presidential signature of public law authorizing offer of ship to Patriots Point (estimate).
October 27.....	Earliest likely offer of ship to Patriots Point by the Secretary of Commerce (estimate).

Source: ALA interviews with MARAD officials and congressional office and committee staffs.

4.1 Schedule

Table 4-1 presents a consolidated schedule for the work ordered by the Maritime Administration for the N.S.SAVANNAH and of the legislative leadtime before the ship can be formally offered to South Carolina. Since major savings can be effected if the work orders for the Detyens Shipyard are modified to prepare the ship for use at Patriots Point instead of the layup, a number of steps have to be taken at an early date. These steps consist of (1) Agreement of the Maritime Administration to delay the start of the proposed work in the Detyens Shipyard; (2) provision of a temporary mooring site for the ship in the Charleston port area until the work orders for the Detyens Shipyard are either reinstated for layup preparation or modified to accommodate the Patriots Point requirements; (3) definitive decision by the Patriots Point Development Authority of whether to accept the ship if formally offered; and (4) conveyance of the Authority's decision (as in 3, above) to the South Carolina congressional delegation and to the Maritime Administration so that appropriate legislative action can proceed and interim arrangements can be made with the Maritime Administration pending the ability to make the formal offer, particularly if the Authority definitely decides to obtain the ship.

For maximal effectiveness, the above steps must be properly fitted into the schedule presented in Table 4-1. To the extent that the Authority's definitive decision depends on assurance of the feasibility of the funding for the project, the assurance of such funding and the timing of its receipt must also be factored into the governing schedules.

4.2 Legislation

The Maritime Administration has stated that they require a legislative mandate to direct them to offer the N.S.SAVANNAH to Patriots Point. The legislative mandate can either authorize the Secretary of Commerce specifically to offer the ship to Patriots Point for museum or other non-transportation uses or to dispose of the ship as "excess property". The two approaches are taken up in turn.

4.2.1 Legislation to authorize an offer to Patriots Point

Legislation to authorize the Secretary of Commerce, resp. the Maritime Administrator in his behalf, to offer the ship to Patriots Point has been introduced in both the Senate and the House of Representatives. In the House, Congressman Mendel J. Davis introduced H.R. 8741 on July 18, 1975,¹⁴ and in the Senate Senator Strom Thurmond introduced S. 2142 on July 21, 1975,¹⁵ in cosponsorship with Senator Ernest F. Hollings. The House bill has been referred to the Committee on Merchant Marine and Fisheries and the Senate bill has been referred to the Committee on Commerce.

Two bills have previously been introduced in the House of Representatives for the original Savannah project and the latter of the two actually passed the House on October 16, 1973. But the Patriots Point bid for the N.S.SAVANNAH is the first action to receive *ab initio* support in both chambers.

4.2.1.1 Differences between the House and Senate bills

The two bills now before the Congress to authorize the offer to Patriots Point are similar in language except that the Senate bill omits the word "Federal" before referring to the Nuclear Regulatory Commission in Section 3 while the House version retained the word. And both bills refer to Patriots Point with an apostrophe ("Patriot's Point), an item suggested for clarification and/or correction by the Legislative Counsel of the Maritime Administration in his informal prior review of the legislative drafts.¹⁶

4.2.1.2 Requests to Maritime Administration to delay layup preparations

In introducing his bill in the House of Representatives, Congressman Davis also requested the assistance of Representatives Thomas N. Downing and Paul N. McCloskey, Jr., the chairman and ranking minority member, respectively, of the House Merchant Marine Subcommittee, "in asking the Maritime Administration for a short postponement" of final layup work on the ship so that "some modification" can be made to the layup-work contract "without any additional cost to the Maritime Administration" to prepare the ship for the museum use. On July 25, 1975, Representative Downing advised Representative Davis that he had contacted the Maritime Administration, that considerable time would elapse in any event before final layup of the ship, and that he had been promised further details on the matter. It is understood that Senator Hollings also addressed a letter to the Maritime Administration requesting delay in the disposition of the ship at least until September 15, 1975, to allow the Congress time to act on the legislation before it.¹⁷

Congressman Downing has stated that his subcommittee will have to hold hearings on the Davis bill. With Congress in recess during August, such hearings could not take place until the middle of September, with a House vote unlikely before the middle of October. It is not clear at this point whether there will also be hearings in the Senate. The leadtime implications of these legislative steps are reflected in the schedule in Table 4-1.

¹⁴ Annex B.

¹⁵ Annex C.

¹⁶ Annex E.

¹⁷ See Annex F.

4.2.2 *Transfer of ship as excess property—an alternative*

The alternative way to make the N.S.SAVANNAH available to Patriots Point is for the Secretary of Commerce to declare it "excess" to government needs. At that point the Federal Cochairman of the Coastal Plains Regional Commission, under Section 514 of the Public Works and Economic Development Act of 1965 as amended (P.L. 93-423, September 27, 1974), can acquire the ship as such excess property through the Administrator of General Services and give it, for purposes of economic development, to the Patriots Point Development Authority as an agency of the State of South Carolina.¹⁸

This alternative does not require further congressional directive to be used in each case. But in view of the value of the ship, the proposal to dedicate it to a non-transportation use, and the precedent of prior specific congressional legislative action and hearings thereon, at least a resolution expressing the sense of the Congress should precede, and in effect guide, the excessing of the ship. Either of the bills now pending could be converted to accomplish this purpose or a new bill could be introduced when the Congress returns from the recess.

Except for the possible acceleration of the actual offer of the ship, little would be gained by using the excess property method. And in the course of using it, some useful support might be forfeited both in the Congress and in the Commerce Department. The excess property method would not ease the burdens of decision-making for the Patriots Point Authority.

4.3 *Modification of the layup specifications*

Careful examination of the specifications for the layup preparation has disclosed that most of the work to be accomplished on the hull by the Maryland Drydock Corporation will not be at cross purposes to the needs of preparing the ship for Patriots Point. But exactly the opposite is true for the work specified to be performed at the Detyens Shipyard. If the ship is to go to Patriots Point, it would be most desirable to define by a new and detailed inspection aboard what should be done to prepare the ship properly and then to modify the affected work specifications accordingly. Without such modification of the work now scheduled for the Detyens Shipyard and without use of the Maritime Administration final funding for the ship, a major additional financial burden would have to be assumed by the Patriots Point Development Authority, which could amount to more than \$200,000. And a most important addition to the modified work specifications for Patriots Point would be the sealing and securing of the reactor in the manner specified further in Section 4.5 below.¹⁹

4.4 *Interim and final ship locations*

If the N.S.SAVANNAH is brought into the Charleston port area, but berthed at a temporary location either awaiting modification of the work specifications or awaiting the readiness of the Patriots Point site, it could be made available for public inspection tours and limited other usage. This would place additional burdens of negotiations, coordination, and funding on the Patriots Point Development Authority. But this possibility should not be dismissed out of hand entirely if it should prove a practical way to keep interest alive in the use of the ship.

The final location and methods of storage for the ship have been defined by LBC&W engineers in Figs. 4-1 to 4-3. The figures are related to the cost estimate for preparation of site and ship supplied in the earlier Table 3-1. Figure 4-1 shows the general site plan for Patriots Point with a new parking extension and the location proposed for the N.S.SAVANNAH indicated in relation to the YORKTOWN. Figure 4-2 shows the N.S.SAVANNAH berth for the detailed site plan. And Figure 4-3 shows the proposed method of storage for the N.S.SAVANNAH and the construction of the access-ways in sections of both berth and pier.

¹⁸ See Annex G.

¹⁹ Cf. Annex H.

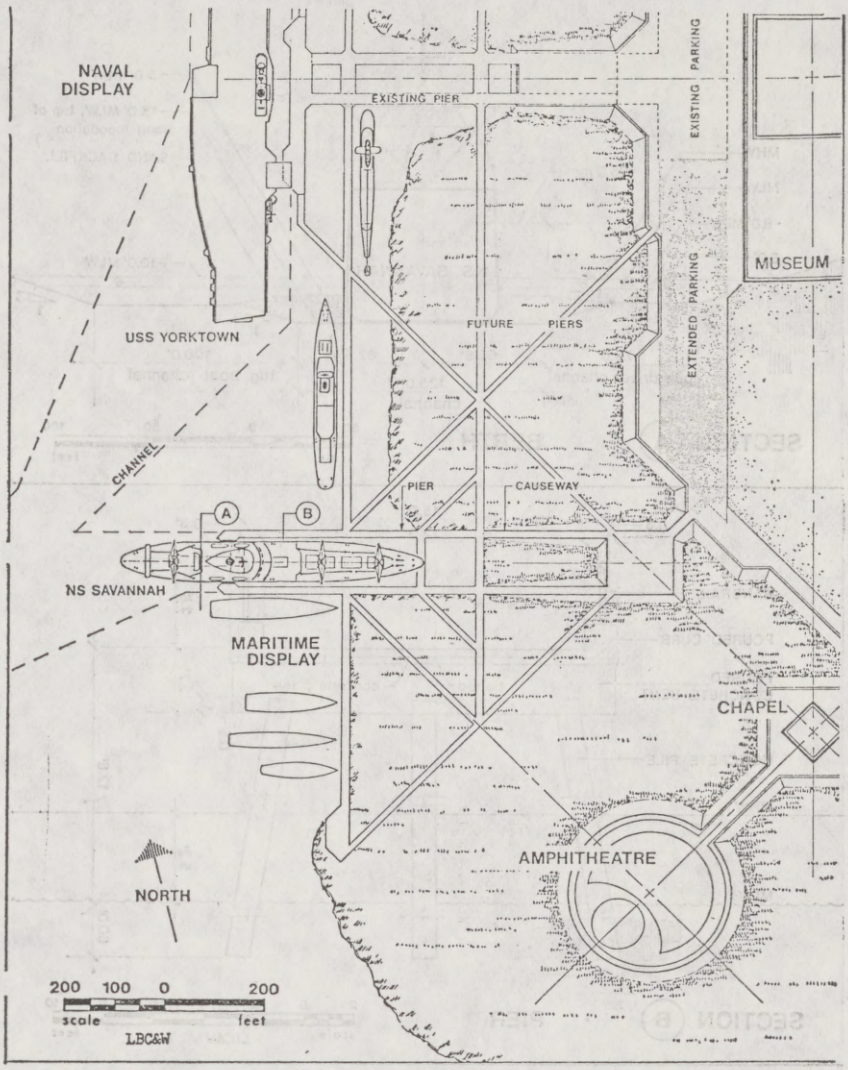


Figure 4-2. N.S.SAVANNAH Berth.

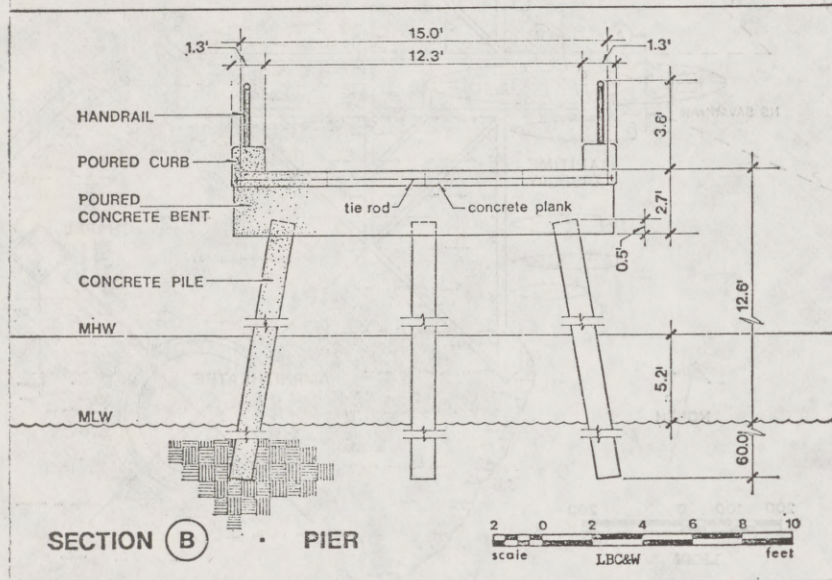
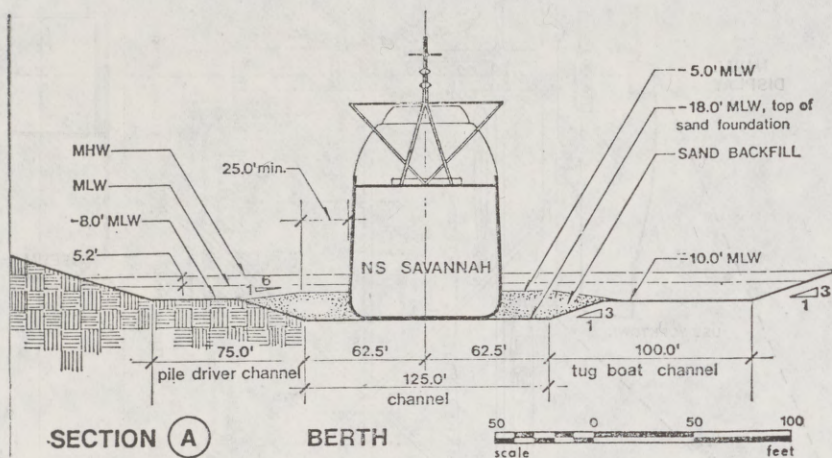


Figure 4-3. Sections: Berth and Pier.

4.5 *Reactor disposition and surveillance*

This section reviews the safety of placing the N.S.SAVANNAH with its reactor plant at Patriots Point, the nature of the residual radioactivity in the ship's reactor vessel and circulatory systems, and the provisions for future surveillance, control and disposition of the reactor portion of the ship at Patriots Point. The section also addresses the pertinent provisions in the authorizing legislation recently introduced in the Congress by Senators Thurmond and Hollings and Congressman Davis.

4.5.1 *The safety history and status of the N.S. SAVANNAH reactor*

The reactor plant of the N.S.SAVANNAH to date has proven, under continuous surveillance and regular inspection, one of the safest ever produced, with fewer operational problems than many of the land-based reactors that have been taken into use in recent years. The fuel element was removed from the reactor before the ship was delivered to Savannah. Thus the reactor plant has been considered, and is in fact now, inoperable.

Water chemistry has been maintained in the reactor vessel to prevent internal corrosion so that, technically, the reactor could be restored to use if a fuel element were reinserted. The water in the reactor, the reactor walls and circulatory systems, and devices in the reactor vessel retain specified residual radioactivity. Draining of the water would prevent the reactor from being taken into use again. But even in the dry internal state the reactor plant will have to remain under surveillance and access control because the residual radioactivity would remain. Removal of the reactor from the ship, as we have previously pointed out in the Savannah report, would be uneconomic before the ship is finally scrapped because it would require removal of large sections of the ship's structure at a cost of several million dollars.

The current safety status of the ship's reactor is reflected in the Port Operating Plan for Port of Charleston, S.C., issued for the N.S.SAVANNAH in July 1975. "Since there is no nuclear fuel in the reactor," states the Plan, "there are no population control zones required."²⁰ And, projecting in effect also what the future requirements will be, the Plan specifies that "Government furnished health physicists will monitor and control access to the portions of the ship which contain contaminated or radioactive materials, thus preventing casual entry by shipyard or other unauthorized personnel."²¹

4.5.2 *Clarification of current control requirements and future safety measures*

Before the ship is transferred to Patriots Point, the Maritime Administration would terminate the operating-facility license which it now holds from the Nuclear Regulatory Commission, resp. its precursor, the Atomic Energy Commission. The termination of the operating license could be consummated as soon as the reactor vessel is sealed or otherwise rendered permanently inoperable. Then a materials license could be issued to Patriots Point which would still assure government surveillance and control of the reactor, but in a greatly simplified way. Because materials licenses can be issued and administered by States that have agreements with the Federal Government to act for it and in its behalf in this area. As pointed out in our Savannah study, the State of Georgia was and is such an "Agreement State" and so is the State of South Carolina by virtue of Governor McNair's request to the Atomic Energy Commission of June 4, 1969, and the resultant agreement concluded at Columbia, South Carolina, on September 11, 1969.²²

The need for, and manner of, continuing surveillance of the reactor when the ship is used for museum and other non-transportation uses were examined in the report of the House Merchant Marine and Fisheries Committee of October 10, 1973,²³ which dealt with H.R. 9450, the bill introduced by Representative Bo Ginn on July 20, 1973, to authorize offering the ship to the City of Savannah. Upon issuance of the report, the then Federal Cochairman of the Coastal Plains Regional Commission, Hon. G. Fred Steele, Jr., convened a meeting of representatives of the Federal and State of Georgia agencies concerned and of the City of Savannah to clarify the ground rules for obtaining a materials license for the N.S.SAVANNAH and arrive at an agreement on the specific steps to be taken to secure the reactor permanently. The meeting was held at the

²⁰ At page 9.

²¹ *Ibid.* See also annex I.

²² See annex J.

²³ See page 28, above, and annex D.

Federal Cochairman's office in Washington, D.C., on October 23, 1973. The Legislative Assistant to Representative Ginn also participated in the meeting.

As a result of the Coastal Plains Commission meeting, a follow-up meeting was convened in Savannah, Georgia, on November 8, 1973, at which the Georgia Radiological Health Service officials specifically confirmed that they were now in a position to place the ship's residual radioactivity under effective surveillance. The Georgia officials used the occasion to inspect carefully the outside of the reactor and to test for radioactive leaks.

It was agreed at the Savannah meeting, that the then current maintenance contractor of the Maritime Administration for the ship would furnish the most recent curie inventory and content descriptions for the reactor vessel to the Georgia authorities who would then, with the results of their on-site inspections, recommend the specific steps to be taken for the final deactivation of the reactor. The curie inventory was received in Atlanta on December 27, 1973.²⁴ The definitive recommendations of the Georgia Radiological Health Service for the permanent securing of the reactor were stated in the letter from Mr. Jerry W. Morris, of the Service, of March 28, 1974, as follows: (1) Weld steel plates or rods on the pressure vessel flanges; (2) cut or remove all cables to the control rod mechanisms; (3) weld shut the containment vessel penetrations to preclude entry into the containment vessel; (4) seal all contaminated areas to preclude entry by the public; (5) if the ion exchange resin beds remain on-board, seal the inlet and outlet ports to preclude accidental discharge of contaminated resin; and (6) remove water from the primary and secondary systems.²⁵

There remained the question of whether the ultimate recipient would have to pay for the deactivation of the reactor. In response to an inquiry of Representative Ginn of December 3, 1973, the Maritime Administrator advised in a letter dated March 14, 1974, that the Maritime Administration would accomplish all of the steps cited in the (subsequent) Georgia letter before delivering the vessel. Administrator Blackwell further stated that if the ultimate recipient should: "at some time in the future decide to scrap the vessel, we think the fore and aft sections of the vessel should be scrapped in place, and that the reactor compartment and containment vessel section could be entombed in place by filling it and surrounding it with concrete, with a suitable plaque. * * *"

By way of precedent examples, Mr. Blackwell cited those of: "The Bonus reactor in Puerto Rico and the Hallam reactor in Nebraska [which] were entombed in place. These were central power station reactors and, of course, were very much larger than the SAVANNAH reactor. The cost of entombment of the reactor [Mr. Blackwell concluded] should be offset by the revenue from the salvage and scrapping of the vessel. * * *"²⁶

4.5.3 Administration of the materials license in South Carolina

At our first briefing of the Patriots Point Development Authority on June 20, 1975, in Columbia, we reported that the Nuclear Regulatory Commission in Washington, D.C., had confirmed to us that the South Carolina State Agreement of 1969 and the Georgia agreement of the same year were practically identical and were both continuing in full effect. The confirmation was given by the office of G. Wayne Kerr, Chief, Agreements and Exports Branch, Division of Materials and Fuel Cycle Facility Licensing, USNRC, Washington, D.C. 20555; telephone 301-492-7767.

A subsequent telephone conversation between Dr. Albert Levy and Mr. Richard Fetz, Chief of the Georgia Radiological Health Service, confirmed that the Georgia specifications for the deactivation of the N.S.SAVANNAH reactor and for issuance of a materials license for the plant after deactivation remained unchanged from the March 1974 letter. Mr. Fetz also suggested that Georgia and South Carolina were following similar inspection standards and licensing procedures, that he had been and was in continuous contact with his South Carolina counterpart, Mr. Heyward G. Shealy, and that he would assume that Mr. Shealy would follow similar procedures as had been discussed for Savannah should the ship go to Patriots Point. He formally offered to turn over to Mr. Shealy copies of all earlier records and findings for the ship that Mr. Shealy might require to make his determinations.

²⁴ See annex K.

²⁵ See annex L.

²⁶ See annex M.

When contacted in July 1975, Mr. Shealy confirmed his continuing collaboration with Mr. Fetz. He also stated that he was prepared to accept the Georgia findings and the recommendations for the definitive disposition of the reactor as stated both by the State of Georgia and the Maritime Administration. Mr. Shealy is the Director of the Division of Radiological Health, South Carolina Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201; telephone 803-758-5548.

Section 3 of the text of the aforementioned bills now pending before the Congress (H.R. 8741 and S. 2142) authorizes the Nuclear Regulatory Commission "to make appropriate agreements with agencies of the State of South Carolina to provide for control and disposition of the nuclear reactor materials remaining in the vessel, as required by law." This section was not included in the earlier House legislation of 1973, which led to specific requests in the House Merchant Marine Committee Report that this matter be clarified, that upon rendering the reactor inoperable the Maritime Administration's operating facility license be relinquished, and that the appropriate State agency for the ship's permanent location issue a materials license and establish continuing surveillance for the deactivated and secured reactor.

4.6 Planning for growth

With the acquisition of the N.S. SAVANNAH Patriots Point can inaugurate in spectacular fashion the merchant marine portion of its stated theme. While this report had to concentrate on the "mechanics" of obtaining the ship and on the feasibility of developing and operating it as a better-than-break-even venture, the parallel development of merchant-marine, maritime-trade and energy displays aboard and in the museum structure(s) ashore is considered of equal importance.

In the same manner this report has addressed for the most immediate and near-term periods the financial feasibility of using the nuclear ship at Patriots Point. It has related basic earning projections to visitor admissions, to concession income and to restaurant operations. We have alluded to conference-center, shiptel, and youth hostel operations and to expositions and trade-fair opportunities. But we have not assigned specific earnings to these latter activity categories since they are contingent on acquisition of the ship in the first place and on intensive promotion and development after the acquisition; they also may require additional policy decisions by the Authority to expand the basic theme operation. We are prepared to develop further detailed plans for the expanded use of the ship and the projected returns on investment in these added opportunities.

If the SAVANNAH inaugurates the merchant-marine portion of the Patriots Point project, further exhibit acquisitions ought to be programmed more or less apace, and in balance, with the naval acquisitions. For example, only two Liberty ships remain on the East Coast, in the Reserve Fleet No. 2 in the James River. A Liberty ship as such and use of its interiors for further displays should be considered.

BRIEFING SUMMARY ON USE OF N.S. SAVANNAH AS PART OF PATRIOTS POINT, SOUTH CAROLINA

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Summary of financial information for planning use of NS "Savannah" at Patriots Point, S.C.

1. U.S. Government investment in N.S. Savannah (construction cost, 1958 prices at keel-laying. Total N.S. Savannah program to date: \$108 million)-----	\$47, 600, 000
2. Scrap value of N.S. Savannah (estimated in 1975 prices, excluding reactor plant)-----	8, 000, 000
3. N.S. Savannah as security value for loan (Savannah Port Authority Special Financial Advisory Committee, Nov. 19, 1973 findings)-----	3, 000, 000
4. Loan recommendation for N.S. Savannah development for use in Savannah, Ga. (same committee as in 3, above) ¹ -----	1, 200, 000
5. Preliminary total cost estimate for installation and opening of N.S. Savannah at Patriots Point (LBC&W) ² -----	902, 000

¹ Based on 10-year experience with financial management of USS *Alabama* Memorial in Mobile, Ala., and USS *North Carolina* Memorial in Wilmington, N.C.

² For possible sources of funding and contributions see chart D, below.

Preliminary cost estimate for NS "Savannah" at Patriots Point

1. Dredging	\$175,000
2. Mooring dolphins (temporary)	25,000
3. Ballasting	55,000
4. Backfill around hull	42,500
5. Permanent pier	200,000
Total	667,500
6. Utilities:	
Water (temporary and permanent)	47,000
Sanitary sewer	22,000
Electricity and communications	37,500
Pile bents on site	63,500
Total	170,000
7. Roads, parking, site preparation	25,000
8. Landscaping and grassing	25,000
9. Plumbing work on board	50,000
10. Engineering (including surveys and boring)	80,000
11. Construction supervision	12,000
12. Contingencies (5 percent)	42,500
Total	902,000

PROPOSED USES FOR NS SAVANNAH AT PATRIOTS POINT

1. Tour Exhibit and Technological Museum.
2. Restaurant, Snack Bars, and Gift Shop.
3. Conference Center and Meeting Rooms including residential conference-center use (60-100 persons).
4. Special Expositions and/or Trade Fairs (multi-level use of hold spaces; possible Foreign-Trade Sub-Zone designation for Trade-Fair Use).
5. Use of First Class and Officers' Cabins as "Shiptel" on lease.
6. Use of Crew Quarters as well-equipped Youth Hostel especially for Bicentennial visitors.
7. Training Center.

FEDERAL GOVERNMENT AND NONGOVERNMENTAL SOURCES FOR FUNDING N.S. SAVANNAH AT PATRIOTS POINT

Departments/agencies	Departmental elements	Programs
GOVERNMENTAL		
Principal sources:		
Commerce	Coastal Plains Regional Commission. Economic Development Administration. Maritime Administration.....	T.A., tourism promotion excess property. T.A. title X. Modification of layup preparation specifications.
Interior	Bureau of Outdoor Recreation.....	
Other sources:		
American Revolution Bicentennial Administration.		
Energy Research and Development Administration.		
Health, Education, and Welfare	Office of Education.....	
Labor		
National Trust for Historic Preservation.....		
National Oceanic and Atmospheric Administration.		
Nuclear Regulatory Commission.....		
Smithsonian.....	Regional and maritime museum programs.	
NONGOVERNMENTAL		
Foundations	Private industry.....	
King's Point Alumni Association.....	Propeller Club of the United States.	
Maritime trade organizations.....	Labor unions.....	

Patriot's Point—initial stage development costs

Item:	Cost
Site acquisition-----	\$150,000
Aircraft carrier renovation and display preparation-----	1,100,000
PT boats—preparation and display-----	275,000
Dredging—channel and berth-----	300,000
Causeway to aircraft carrier-----	325,000
Utilities—on site and to ship-----	75,000
Land fill—30 acres at \$20,000 per acre-----	600,000
Paving—dock and concourse areas-----	95,000
Parking for 1,000 cars-----	100,000
Roads-----	165,000
Site improvements—landscaping, cleanup, clearing, walks, etc-----	190,000
Total-----	3,375,000

Source: LBC&W consultants, Patriot's Point Report (1974), table 1, p. 21.

TABLE 6.2

FIGURE OF MERIT: ESTIMATED REVENUE FROM VISITORS
 VISITOR AND TOTAL REVENUE POTENTIAL FROM TOURS AT PATRIOT'S POINT

Number of Days Visited	Year	Visitor Category	Admission Price	Admission Fee Collection
302,000		Tourist Visitors (Total)	\$1.50	\$453,000
50,000		Convention Visitors	3.00	150,000
20,000		Professional Tourist Visitors	1.25	25,000
20,000		Student-group and Under-12 Visitors	.50	10,000
200,000		Total Estimated Visitors with Provide Minimum Total Revenue of		\$362,500

Source: ALA Study Savannah 1973

Table 3
 ANTICIPATED CUMULATIVE CASH FLOW FOR INITIAL STAGE OF PATRIOT'S POINT DEVELOPMENT (in Thousands)

	0 (1974-75)	1 (1976)	2 (1977)	3 (1978)	4 (1979)	5 (1980)	Total
Income							
Paid Attendance		300	263	400	400	530	2,035
Total Income		\$ 500	\$1,035	\$1,200	\$1,380	\$1,590	\$ 6,105
Costs							
Capital	\$3,375	-	-	-	-	-	3,375
Operating	-	400	400	400	400	400	2,000
Carrying (1)	-	202	182	158	119	68	733
Total	3,375	603	585	558	519	468	6,103
Remaining Cost Relationships							
Debt	3,375	-	-	-	-	-	-
Cash Flow	-	297	450	642	861	1,122	-
Accumulated Debt	3,375	3,078	2,628	1,986	1,125	3	3
Accumulated Cash Flow	-	-	-	-	-	-	-

(1) Assumes interest rate of 6 percent

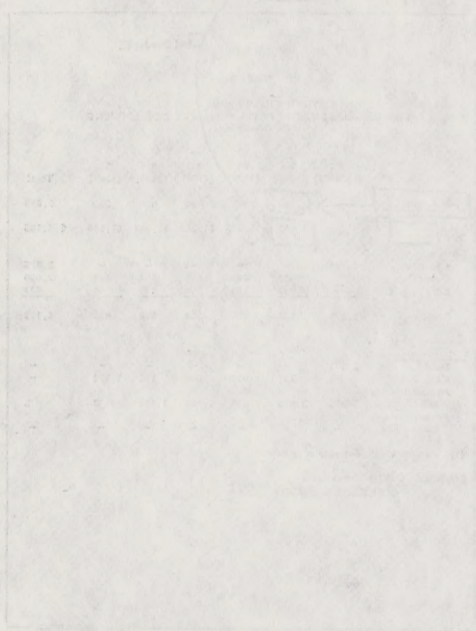
SOURCE: LBC&W Consultants
 Patriots Point 1974

G. Comparison of Visitor and Income Potentials: ALA and LBC&W Reports

Note: Mutual confirmation of independent estimates for Southeastern Area, with subsequent allowance for energy crisis effects. Proportionate correspondence in earnings projections.



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