gress tends to measure higher and lower and technical and nontechnical education by different standards, and the same applies when it is recalled that the problems of church and state, segregation, and fiscal conservatism continue to hang over federal aid to the lower levels of education, regardless of whether the aid is specific or general. Nevertheless, there is much encouragement to be found in the good legislative prospects of the administration's poverty program, which, in its emphasis on education at the lower levels, might have had a far different reception if it were blended into a general aid program.

Since there is still some life in the venerable argument that federal aid inevitably brings federal control, the commission pointed out that the federal government's principal venture into general aid for education—aid to federally impacted areas—has never evoked complaints of federal control. (And, curiously, many congressmen who regularly oppose general aid on the grounds of federal invasion of local prerogatives, appear to be quite pleased to bring home such aid to their own impacted district.) However, the report argues, the Congress, in its aversion for general aid and its insistence upon pinpointing its assistance to education, is inadvertently creating federal interference in local educational activities. When funds are made available on a matching basis for specific programs, the Congress lures educational systems into depleting one area to qualify for support in another. And, the report adds, under the impacted aid program "many comparatively wealthy school districts receive funds while poorer ones do not."

In keeping with its emphasis on the importance of recognizing the political realities of federal aid to education, the commission rejected the proposed establishment of an independent federal education agency on the grounds that it "tends toward the very thing most educators want to avoid—control—and shows little promise of achieving what they most need—money." Its preference in the way of a new institutional arrangement, it concluded, would be a cabinet-level Department of Education to give "education a higher status at home and abroad and more direct access to the Executive policy-making machinery." There is little danger, it said, that such a department would undermine state and local control. "The far greater risk is the erosion of the power of education caused by insufficient support, for penury is a particularly vicious form of control, causing schools to choose not the right alternatives, but the cheap. Associated with this risk is the impact of specific federal programs which favor parts of the curriculum. The real dangers of control, then, are functions, not of federal administrative structure, but of federal policies."

It is too soon to say whether the commission's recommendations will be reflected in the policies and the lobbying activities of the public education organizations. But the educators have shown themselves to be politically educable, which is encouraging after many years of evidence to the contrary.

The members of the commission are: Arthur F. Corey, chairman; Margaret Lindsey, vice-chairman; Roberta S. Barnes, George B. Brain, Samuel M. Brownell, William G. Carr, Forrest E. Conner, J. W. Edgar, Wendell Godwin, Clarice Kline, Rachel R. Knutson, Max Lerner, James D. Logsdon, J. Win Payne, James W. Reynolds, Lina Sartor, H. E. Tate, O. Meredith Wilson, and Robert H. Wyatt.

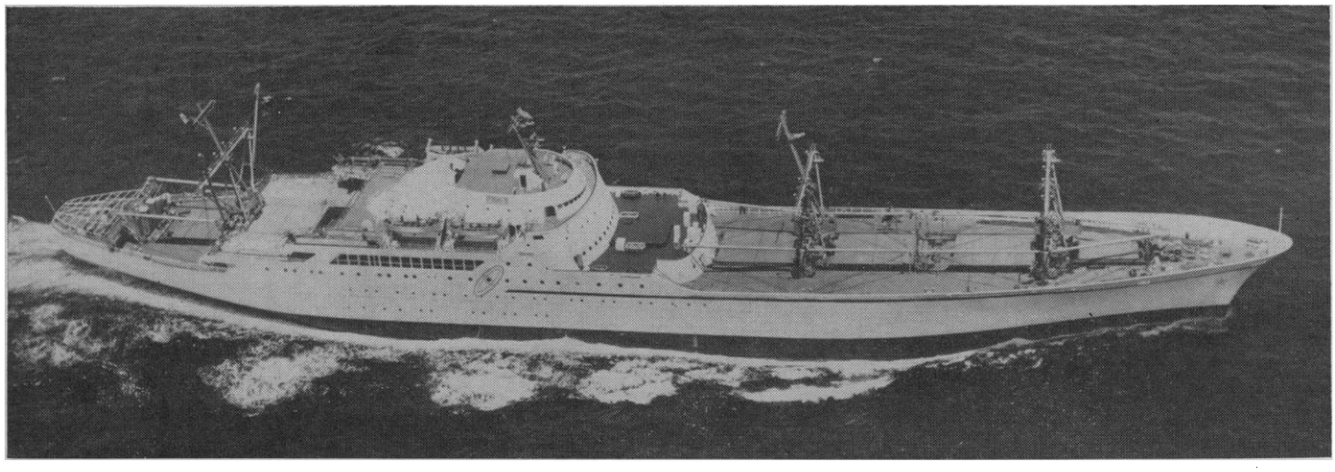
—D. S. GREENBERG

N.S. Savannah: Trouble-Ridden Nuclear Ship Gets Under Way with New Crews and High Spirits

Two weeks ago, the nuclear ship *Savannah* completed her maiden transatlantic voyage and pulled into Bremerhaven. Repeating a pattern of fanfare established in the *Savannah's* calls at domestic ports, there was great ceremony. Fireboats and small craft filled the harbor, tooting their whistles, welcoming her in. Planes flew low overhead. Flags waved. A crowd applauded. A German police band played the German and American national anthems. (In Boston, somewhat indiscreetly, a firemen's band had led off with "There'll be a Hot Time in the Old Town Tonight.") And officials, German and American, made speeches reassuring each other as to the historic importance of the occasion. But whether Germany's welcome for the *Savannah* is a tribute to a scientific feat or a pat on the back for the vessel's awakening from a public relations nightmare is a little hard to say. For the *Savannah*, designed to be the harbinger of a nuclear maritime age, became landlocked in a labor dispute of such complexity that the technical problems of nuclear propulsion look simple by comparison.

Originally conceived during the Eisenhower administration as a demonstration of America's intent to make peaceful use of the atom, the *Savannah* project acquired a further objective—encouraging the development of a nuclear merchant marine. A nuclear merchant fleet, it was thought, would secure the future of shipping against a possible world-wide shortage of conventional fuel. The possibility of freeing ships from dependence on bulky fuel supplies, enabling them to make faster runs and carry larger cargoes, was to inspire a lagging American merchant marine. The *Savannah* was, in contradiction to its primary peaceful purpose, to prove the feasibility of a nuclear merchant marine as a backup to a nuclear navy in the event of war. It was to fortify American prestige against the possibility of a Russian maritime coup on the order of Sputnik. And, finally, it was to precipitate and solve all the problems—technical, legal, political, and psychological—that would obstruct the development of commercial nuclear ships. Ship and reactor design, and the integration of the two, would have to be worked out. Crews to man and service the vessel would have to be trained. Hazards to crew and public from radiation had to be eliminated, and the public had to be persuaded of the ship's safety. Running an atomic ship in international waters would require new and elaborate agreements on such matters as the disposal of radioactive wastes. A variety of measures would have to be taken to insure that the ship had the necessary access to and acceptance in the ports of the world. The rationale for the *Savannah*, in short, was something like the rationale for exposing preschool children to mumps: it will be rough any time, but it's better to have them while you're young.

Construction of the *Savannah*, a 595-foot (180-meter) combined cargo and passenger ship, was authorized in 1956, under the direction of a so-called Joint Group of representatives of the Atomic Energy Commission and the Maritime Administration, an agency of the Department of Commerce. In the beginning, aside from unsurprising difficulties with construction schedules, the project proceeded fairly well. The contract for



The N.S. *Savannah*

the ship's reactor—a pressurized water system—was signed with Babcock and Wilcox in April 1957; the ship was designed by George G. Sharp, Inc., and built by the New York Shipbuilding Corporation at its yards in Camden, New Jersey. The keel was laid in May 1957, and the ship was launched in July 1959. Construction was essentially completed in the spring of 1961, and in December the *Savannah* left Camden —under auxiliary power—for several months of sea trials and full reactor operation at Yorktown, Virginia. Costs for the project in the 1955–1961 period were about $55 million.

Seeking to emphasize the commercial prospects of the *Savannah*—to put over the idea that in all essentials the ship would be handled just like any other—the government decided to turn the actual operation over to a regular shipping firm, which would have the necessary foreign and domestic port agents, and experience with cargo, to make something approaching normal operation possible. A half-dozen companies, spurred by the opportunity for prestige, for publicity, and for training and experience, expressed an interest, and in July 1958 a contract was signed with the States Marine Lines.

Shortly thereafter, the training of the *Savannah* crews, all employees of States Marine, began. Most intensively trained were the engineers, who received up to 18 months' training in reactor installations in a course which included academic, field, and on-the-job work. The time between their certification by the AEC and the *Savannah's* completion was utilized for further study. Intensive training was also given the deck officers, and less sustained programs were devised for the ship's doctor, the instrumentation experts, and certain key technicians. The labor difficulties began shortly after the *Savannah* was put into operation, in May 1962.

The details of the dispute are ridiculously complex. States Marine Lines was running the *Savannah* with crews representing several unions: the engineers were members of the National Marine Engineers Beneficial Association; the deck officers, members of the International Organization of Masters, Mates, and Pilots. Other unions represented were the National Maritime Union and the American Radio Association. Briefly stated, what happened was that the engineers' union, acting without the knowledge of the others, won an increase in wages from the company, on the basis of their special training and licensing as reactor operators. The deck officers, apparently as jealous of their status as they were worried over their pocketbooks, objected to the wage increase for engineers and staged a 10-day sit-down strike, refusing to sail the ship. In August 1962 the deck officers agreed to submit the dispute to a binding arbitration, and the *Savannah* sailed from Yorktown, Virginia, to her namesake city, Savannah, Georgia, then to ports along the West Coast. In November, when the ship was at Long Beach, California, the arbitrator announced his decision: the deck officers would get a substantial increase in salary and, in addition, the wages of the deck officers would maintain a specified fixed relationship to the wages of the engineers, the wages of the deck officers being always proportionately higher. Any raises for the engineers would automatically be paralleled by raises for the deck officers.

The engineers, opposing the provision for a fixed-wage relationship, announced their resignation, which the company refused to accept. The engineers then refused to bring the reactor up to full power, and the *Savannah* made her entrance into Los Angeles, where welcoming ceremonies were planned, ingloriously towed.

When the company and the government agreed to go to court to seek reversal of the arbitration award, the engineers went back to work, and the *Savannah* sailed off to Hawaii, other West Coast ports, and the Canal Zone. The New York State Court which heard the case upheld the award; the case was appealed; later the appellate court also sustained the award.

Meanwhile, the *Savannah* had returned to Galveston, where its service dock is located, in preparation for its planned visit to Europe, originally scheduled for May 1963. From February to May the dispute raged, with the engineers increasingly taking the position that they would not sail until a favorable settlement was made. On several occasions it appeared that agreement had been reached, but all near agreements contained some fatal flaw, making them unacceptable to one or the other union, or to the company. On 6 May the engineers shut down the reactor, thus canceling a scheduled trip for 7 May from Galveston to Houston, and on 9 May they shut down the rest of the ship's facilities. The government made several more attempts to rescue the *Savannah* from its difficulties, but in the end all efforts failed. On 17 May the government terminated the contract with States Marine, hired Babcock and Wilcox to tend the reactor, and resigned

(*Continued on page 1617*)

(*Continued from page 1560*)

itself to finding a new way to get the *Savannah* going. Gone with the contract were about $8½ million paid out to States Marine, the only crew trained to operate the nuclear ship, and a good deal of the *Savannah's* public appeal. Of the engineers' performance in the affair, Secretary of Commerce Luther Hodges said: "They have taken advantage of the evident unavailability of trained personnel who would . . . compete with them for their positions on board the *Savannah*. Having been trained at public expense to perform important duties aboard the only nuclear-powered merchant vessel in the world, they have turned on the government and dared it to incur the disappointment and damage to the nation's prestige which would inevitably attach to the delay which has now been forced upon us."

What should be done next? The government considered several alternatives for running the *Savannah*. It was proposed that the Maritime Administration take over and run the ship directly, on a civil-service basis. It was proposed that the Navy operate the ship. And it was proposed, warily, that the government try again to run the *Savannah* as a commercial venture by contracting with a different shipping company. Finally, the third alternative was chosen, and in July 1963 the American Export and Isbrandtsen Lines took over as the *Savannah's* General Agent.

Although a handful of deck officers and engineers changed their union affiliation to follow the *Savannah* from States Marine to American Export (where deck officers and engineers are members of the same union, the Brotherhood of Marine Officers), the new crew had essentially to be trained from scratch.

Where training of the first crew had lasted in some cases nearly 2 years, for the second there was no such luxury. Academic training lasted about 4 months, and there was an additional 10 weeks for work on the *Savannah* itself before the ship was taken out for sea trials with the new crew in February. Trials and training continued until May, when, 1 year late, the *Savannah* left Galveston for the trip that marked the beginning of the real work of the nuclear ship. A future article will discuss the *Savannah's* current problems and prospects.

—ELINOR LANGER

Announcements

The Office of Naval Research, Harvard's Museum of Comparative Zoology, and the American Geographical Society have made available an inventory of material and data on the **marine environment of the western North Atlantic**. The inventory is the result of a project begun in 1960 to assemble information on the locations of oceanographic data and specimens for the convenience of the scientific community, to determine gaps in the geographic distribution of collection efforts, and to preserve unpublished data which might otherwise be lost. It includes items on fauna, geology, research vessel cruises, and uncorrected water temperatures. Information is recorded on small file cards, and unpublished or obscure documents are either reproduced on microcards or abstracted. The data are available from the Director, National Oceanographic Data Center, Washington, D.C. 20550, or the Director, Museum of Comparative Zoology, Harvard University, Cambridge 38, Mass.

Columbia University plans to initiate a program this fall combining study in **science and Soviet affairs**, leading to an advanced degree in science or engineering and the certificate of the Russian Institute. Participants will be required to complete all the requirements both for the science or engineering degree and for the Institute certificate. Enrollment will be limited, and the program will be adjusted to meet the needs of each participant. The program is designed, according to Alexander Dallin, director of the Russian Institute, to provide training "useful in analyzing Soviet economic and agricultural policies, in evaluating achievements in science and space technology, and in estimating Soviet military capabilities and the sincerity of initiatives in disarmament and arms control." Additional information on the program is available from Professor Dallin, at Columbia.

Meeting Notes

The Marine Biological Association of India invites papers for a symposium on **crustacea**, planned for January 1965, the exact dates to be announced. The meeting is to cover systematics, biology, and fishery. The present position and problems of crustacea will be discussed and future research planned for. Dead-