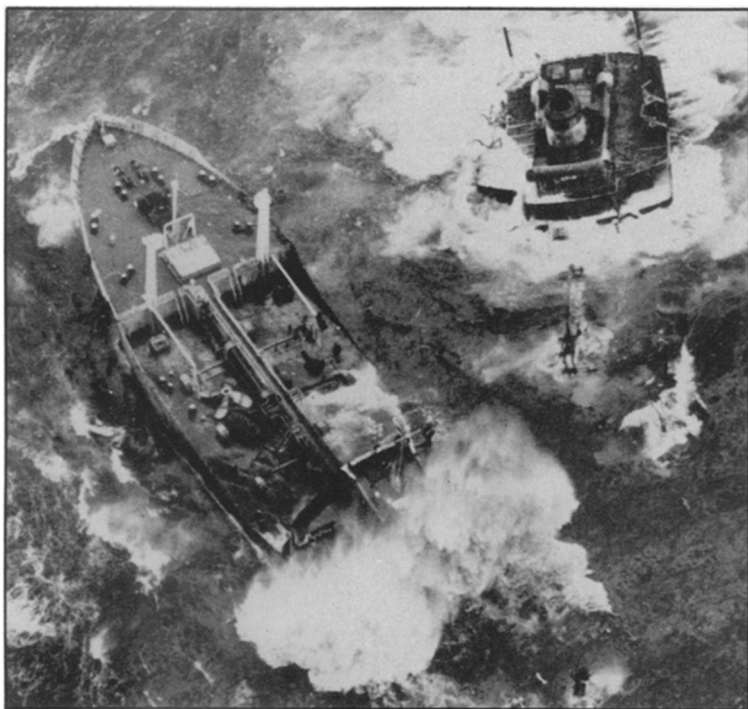


## Pouring troubled oil on Atlantic waters



*Argo Merchant split asunder: Oil spill may dislodge tanker-safety initiatives.*

Nothing stimulates prevention like an accident it could have forestalled. Thus the spilling of 7.5 million gallons of oil off Nantucket Island before Christmas promises to loose a flurry of tanker safety initiatives that have been stalled in Congress for months or years.

The sinking of the *Argo Merchant* underscored almost every weakness in the present system of shipping oil:

- The ship itself was 23 years old and has had 18 other accidents since 1964, including two previous groundings. Within a week after becoming stuck on a sandy shoal, the aging 640-foot vessel broke into three pieces, spilling its entire cargo.

- The ownership of the oil is being disputed among three separate companies, each claiming it belongs to another. Four national jurisdictions may be involved.

- Responsibility for the vessel has also been hard to assign. Like many tankers, the *Argo Merchant* is essentially an independent enterprise, operated by a one-ship company registered in Liberia. The owners are reportedly a group of Greek shippers based in New York. (Liberia nominally has the world's largest merchant fleet, although 40 percent of the vessels are actually American-owned. Liberian taxes and marine safety requirements are among the most lenient in the world.)

- Authority for investigating the accident is unclear. The ship was 10 miles off course when it went aground, and a depth sounder on board should have warned of danger in time to steer away. The Coast Guard has said it received information from a crew member indicating

the ship had intentionally been run aground and that the crew had been ordered not to cooperate with salvage parties. Yet, because the accident occurred 27 miles offshore, the Coast Guard may not be able to investigate the matter further.

- Existing methods were clearly inadequate to contain the spill. The thickness of the oil would have made it difficult to ignite, which might have caused more problems anyway. Skimmers and chemical dispersants could not be used because of heavy seas. The Coast Guard considered trying to tow the bow portion farther out to sea or to pump out the remaining oil, but it broke apart first.

- Knowledge of the effect of such spills remains rudimentary. The No. 6 industrial fuel oil—used to fuel electric power generators—was dispersed this week over an area covering at least 3,000 square miles, some of it over a part of the rich Georges Bank fishing grounds. The effect on flounder and haddock, as they approach their spawning season, is uncertain. So is the possibility of spread to other areas: Should the oil reach the turbulent region where the Gulf Stream meets the Continental Shelf, it could be scattered up and down the East Coast. Research vessels from the Woods Hole Oceanographic Institution, the National Marine Fishery Service and the University of Rhode Island were to sample marine life and make other studies.

Congressional action was immediate and furious. Sen. Edward M. Kennedy (D-Mass.) quickly organized an unusual evening hearing of his Subcommittee on Administrative Practice and Procedure to

question the handling of the affair. He also released a strongly worded statement indicating his belief that authority already exists to allow a full investigation and assessment of damages:

"I believe that Congress intended adoption of the 200-mile-limit bill to establish U.S. jurisdiction over incidents of this kind without further supportive legislation. . . . There are legal precedents in suits stemming from the Santa Barbara spill which indicate a right for private claims, even outside territorial waters, when the damage affects individual livelihoods."

These and other legal questions involved in the *Argo Merchant* incident will, of course, take years to sort out through the courts. (Says one knowledgeable observer, "The international lawyers are having a field day.") But several legislative initiatives are also underway. The Coast Guard will be pushed to set stricter standards for tankers entering American ports, possibly requiring double hulls. A liability fund among shippers may be established to ensure payment of damages even before responsibility is fully established. Legislation regulating offshore drilling may be modified to require buried pipelines, rather than tankers for carrying petroleum to shore. Treaties will be pushed to require better training of ship officers and crew, and better standards of ship construction. More research on the environmental effects of such spills will probably be funded.

Environmental Protection Agency Administrator Russell E. Train called the incident "the biggest oil spill disaster in our history." Usually it takes just such an event to shake loose all the preventive measures that have sat around waiting to be considered seriously. □

## Salem witchcraft: Ergotism rebutted

One of the more interesting if enigmatic tidbits in American history has been the 1692 outbreak of so-called witchcraft in Salem, Mass. Last year Linnda R. Caporael of the University of California at Santa Barbara hypothesized that ergotism, an illness resulting from the ingestion of ergot, a fungus with LSD-like properties, could have been responsible for the strange behavior of the eight young girls who made witchcraft accusations against their neighbors (SN: 4/3/76, p. 215). Caporael's explanation is plausible, but it has not convinced everyone. In the Dec. 24 *SCIENCE* Nicholas P. Spanos and Jack Gottlieb of Carleton University in Ottawa, Ontario, attempt to show that Caporael's arguments are not well founded.

First, say Spanos and Gottlieb, convulsive ergotism, the type of ergot poisoning