MIAU-T-75-007

University of Miami
School of Law

OCEAN AND COASTAL LAW PROGRAM
COMMUNITY LEGAL PROBLEM SERVICES

Title: Legal Problems of Undersea Storage: Considerations in the Development of Technology and Practice of Grain and Fish Storage in the Ocean

Requested by: NOAA Inquiry following scientific paper presented at the American Association for the Advancement of Science 1975 Annual Meeting

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Project No. R/L-1 in the University of Miami Sea Grant Institutional Program

Report No. FY75-6
June, 1975

A. INTRODUCTION. Recent tests and study by Dr. Stanley Charm of the New England Enzyme Center at Tufts University and Donald Whitaker of the National Marine Fisheries Service (NOAA) have proven the technological practicality of undersea storage of grain and fish, and presumably any other edible commodity susceptible of infestation and spoilage which is amenable to bulk storage over substantial time periods. "Effect of Preservation on Food Supply (Ocean Storage of Grain to Increase Availability)," paper delivered at the AAAS 141st Annual Meeting, New York City, January 30, 1975. While a detailed economic analysis has yet to be made, indications point to undersea storage gaining economic acceptability. Estimating that there is a 30% grain harvest loss due to predator infestation resulting from inadequate storage facilities, the researchers found that double wall plastic bags placed under water provide a secure mode of storage at a cost in all likelihood less than the cost of producing the otherwise lost grain plus its conventional storage and transportation expenses.

The undersea environment of cold temperature and high pressure offers significant advantages in retarding natural spoilage. This is of special concern to fishermen who must sacrifice a substantial portion of their first caught catch on a voyage due to its rapid rate of decomposition, even when under refrigeration in the vessel's hold. By placing the initial catch in relatively deep water to be retrieved on the return leg of the fishing

voyage, the underwater extremes of high pressure and cold temperature bring the natural decomposition process to a near halt, thus enabling fishermen to recover a substantially higher economic return for the same amount of catch and fishing effort.

While much of the study was conducted with an eye toward its implementation in the underdeveloped countries where grain predator losses are most severe, existing storage facilities are most inadequate, and grain and food shortages are most pressing, the technique has just as great a potential applicability in the United States where a favorable technologically innovative climate should move it through the experimental and developmental stages into actual use much more rapidly than elsewhere.

Attractive as undersea storage appears to be, however, implementation of the technique may meet legal impediments which raise numerous issues, such as maintenance of property rights, civil liability, and exposure to jurisdictions of multiple governmental subdivisions. Due to the presence of this activity in the marine environment, some of these issues may be resolved in a manner different from the treatment which would be accorded if the activity were conducted ashore. As the technique presently is in its developmental stages, one cannot anticipate all of the problems and issues which may later arise. Yet, in an attempt to encourage development of the technique along lines which offer the least legal resistance, or to determine what laws or legal principles should be modified to accommodate this new use of the sea, it is not premature to analyze the potential legal conflicts which may arise.

The approach taken here is initially to outline and describe the various governmental jurisdictions overlaying offshore areas, and then to posit various hypothetical conflict situations and indicate their probable resolution under existing law. Policymakers can take account of these potential conflict situations, and inadequacies in the law, and devise means for their resolution at an early stage in the development of undersea storage. With increasing realization of the ability of the world population to outstrip the earth's food support capacity, rapid

development of means more fully to utilize existing food resources can come about none too soon.

B. EXISTING STATE, FEDERAL AND INTERNATIONAL LEGAL JURISDICTIONAL RELATIONSHIPS. The United States presently claims a 3 mile territorial sea (likely to be soon extended to 12 miles in conjunction with a law of the sea treaty). According to customary law and international agreement,[1] a coastal nation may exercise within the territorial sea the same degree of sovereignty as it exercises upon its land territory, subject to certain international "nautical easements," of which only several are relevant to this problem. The coastal nation must respect the rights of vessels of other nations to engage in innocent passage through its territorial sea, and as well is required to give appropriate publicity to any dangers to navigation existing therein.

Beyond the territorial sea lies the high seas where any exclusive sovereignty rights of a coastal nation give way to the inclusive, commonly held rights of all nations. The key feature of the high seas is the freedom of all nations to use the high seas as they wish so long as the activity does not prejudice the interests of other nations in their exercise of freedom of the high seas. Three freedoms specifically enumerated in the 1958 Convention on the High Seas which are of concern here are the freedom of navigation, the freedom of fishing and the freedom to lay submarine cables and pipelines.[2] Interference with these

enumerated freedoms (or others not enumerated) by a coastal nation would be construed as a violation of international law.

Leaving the ocean surface and descending to the sea floor, one encounters a different set of principles, namely those governing the continental shelf jurisdiction of coastal nations. Gaining an impetus from President Truman's 1945 declaration extension of the United States' ownership and jurisdiction to the natural resources of the seabed and subsoil of the continental shelf,[3] a large segment of the international community has come to accept the principle of a coastal nation's exclusive sovereignty over the living and non-living natural resources lying on and under its continental shelf. While these exclusive sovereignty rights to explore and exploit continental shelf natural resources include the right to construct and maintain or operate installations and devices necessary to conduct these activities, these rights cannot be exercised in such a manner as to unjustifiably interfere with navigation, fishing, conservation of living marine resources, or scientific research. Wherever such installations are constructed, due notice and warning of their presence must be maintained.

Although international law might tolerate certain shelf installations which minimally interfere with navigation and other high seas rights as long as notice and warning is given, the federal law of the United States is less accommodating. Being

charged with the maintenance of navigation rights over all navigable waters of the United States, the Army Corps of Engineers must approve of and grant a permit to any project which involves construction in, or an obstruction of, navigable waters. Taking a broad view of what may be termed construction, the Corps would have cognizance over any underwater installation pursuant to its powers to preserve navigation. While international law authorizes a coastal nation to exercise authority over navigation only within its territorial sea, and, to a lesser extent, its contiguous zone (presently 12 miles), this has not stopped the United States under its grant of power to the Corps of Engineers from attempting to preserve and protect navigation rights in all areas extending out and overlying the limits of the continental shelf. While the Rivers and Harbors Act affirmatively imposes a duty upon the owner of a sunken craft to mark it with a buoy[4] (implying that the presence of a buoy alone would not be a hazard to navigation), it also imposes the duty upon the owner to commence "immediate removal of the same, and prosecute such removal diligently, and failure to do so shall be considered as an abandonment of such craft, and subject to the same to removal by the United States" (implying that a private marking buoy might not be tolerated over an indefinite period of time and that ultimately it might be considered an impediment to navigation).

Turning to the ownership and jurisdictional relationships

existing between the federal and state governments, the United States Supreme Court recognized no ownership rights in the states to offshore continental shelf areas, United States v. California, 332 U.S. 19 (1947). This was changed by Congress in 1953 by the Submerged Lands Act, 43 U.S.C. §§1301-1315, which gave to all the coastal states whatever ownership rights had theretofore been held by the federal government in a 3 mile wide strip of offshore submerged land. (The Submerged Lands Act also confirmed title in the states to any pre-existing historical property rights which might exceed 3 miles--the only two states so recognized were Texas and the Gulf of Mexico coast of Florida, which were permitted 9 miles).

Anticipating the existence of substantial offshore oil deposits beyond the 3 mile limit, in 1969 numerous Atlantic states asserted an historical claim to offshore areas beyond 3 miles on the grounds of historical grants from England at the time of colonization, but with the recent decision in United States v. Maine, et al., 95 S. Ct. 1155 (1975), confirming the 3 mile boundary, we are left with a uniform rule allocating state and federal interests on both the Pacific and Atlantic coasts.

Turning to other state and federal laws not directly related to allocating property rights or jurisdiction in offshore areas, most federal statutes fall under territorial jurisdiction, having no applicability beyond the limits of the territorial sea.

Exceptions to this are in some areas of personal status and obligations, and the special maritime jurisdiction which regulates certain conduct of United States citizens or any person aboard a United States vessel anywhere on the high seas.

The 1953 Outer Continental Shelf Lands Act, 43 U.S.C. §§1331-1343, which meshed with the Submerged Lands Act, provided that in regard to activities conducted on or under the continental shelf beyond the 3 mile line of ownership and jurisdiction given to the states, the applicable federal law included the adjacent state's law to the extent that it does not conflict with federal law--an arrangement similar to that existing on federal enclaves within state territory.

C. MAINTENANCE OF PROPERTY RIGHTS IN AN OFFSHORE "WAREHOUSE". Given this legal framework of ownership and jurisdictional relationships, what is its impact upon initiating offshore undersea food storage? For reasons of probable difference in rules based on participants (the public versus private sectors), location, probable time span of each storage event, and the commodity being stored, the two presently contemplated storage uses--grain storage and fish catch storage--will be analyzed separately.

Most large scale grain storage is done either by the federal government or by private enterprise under a warehouse license granted by the Secretary of Agriculture. The United States Warehouse Act, 7 U.S.C. §§241-273, sets forth the provisions

applicable to all licensed warehouses and warehousemen. Although nothing in the Act appears prohibitive of using undersea storage facilities, it is obvious from the Act's wording that it was written without contemplating the use of the sea as a site for storage of agricultural products. Section 242 defines warehouse as ". . . every building, structure, or other protected inclosure in which any agricultural product is or may be stored for interstate or foreign commerce, or, if located within any place under the exclusive jurisdiction of the United States, in which any agricultural product is or may be stored." Section 247 requires the tendering of a performance bond to the United States by any warehouseman as a condition of receiving a license, while Section 265 provides for examination of stored products. Section 269 allows the Secretary of Agriculture to cooperate with state officials charged with enforcing state laws relating to warehouses. And Section 270 imposes criminal penalties for unauthorized removal of agricultural products from licensed warehouses.

Depending upon the underwater site, the method of anchoring, the means of monitoring its location, and security measures, a warehouseperson may find it difficult to secure a performance bond as required by the Act or to comply with other provisions providing for examination of the products or taking of samples. Although measures were taken following Anthony De Angelis' infamous "salad oil swindle" to tighten regulations surrounding extensions

of credit based on commodity warehouse receipts and inspection of storage facilities, the relative difficulty inherent in inspecting and preventing loss or fraud when the storage facility is submerged offshore would virtually necessitate a complete overhaul of some of these existing regulations. For reasons such as these, it is anticipated that initially at least, this activity will be conducted solely or primarily by the federal government.

But regardless of who might be conducting the activity, siting remains a problem. There are important reasons why an underwater storage site should be located within the territorial sea (as noted earlier, presently 3 miles in width but likely to be extended to 12 miles). A grain storage site would likely be utilized on a long term basis. Thus if a buoy were used for surface identification outside the territorial sea it may be considered an obstruction to navigation and a potential violation of international law. As a practical matter, however, the frequency with which countries routinely buoy sites beyond their territorial sea, and the tolerance which the international community has exercised with respect to them and to platforms and artificial islands (which are more serious obstructions to navigation) would reduce such a finding to a mere technicality.

By keeping the activity within one's territorial sea, the only burden imposed would be the requirement of respect for the

innocent passage rights of other states. This would not present conflicts to the same extent as would occur on the high seas, where any use can lawfully be exercised only to the extent that it does not intefere with the high seas rights of other nations. Furthermore, within the territorial sea one would receive far broader measures of protection of United States law since nearly all internal enactments extend to the limits of the territorial sea.

Keeping in mind the strategic nature of food stockpiles, the closer they remained to the coast, the better control the coastal nation could maintain over them, not only from internal security threats, but also from foreign sabotage. Fortunately coastal proximity conforms with the ideal marine environmental conditions for grain storage. The primary concern in locating grain stockpiles is a site free from insect and rodent infestation and which requires only inexpensive maintenance. The low temperature and high pressure extremes of the ocean depths are not of major concern here. It may in fact be a detriment, as under extended storage at high pressure it is feared that the natural oils contained inside grain may be squeezed out. A 3 mile or 12 mile territorial sea should provide an ample number of sites in which the tempreature is cool enough to prevent deterioration and the pressure safe enough to not incur damage to grain.

Additional advantages to a site proximate to the shore

would be that an identifying buoy may not be necessary since reliance could be placed on obtaining a coastal navigational fix. The function of a buoy however might be more than mere identification--it might act as a warning that storage facilities lie below and that diving is prohibited. But unless security measures were instituted, such action would amount to nothing more than a waving flag inviting theft or vandalism. Whether buoyed or not, anytime activities are initiated upon the United States continental shelf which amount to construction or an obstruction affecting navigation (without regard to whether it is inside or outside the territorial sea) a permit must be obtained from the Army Corps of Engineers.

An ideal arrangement would be to site the storage facility in conjunction with an offshore complex designed for other uses as well, for example, offshore port facilities. Since stored grain is often held for later transshipment or export, this would eliminate the logistical problem encountered of trying to coordinate railway grain shipments with ship movements of finding sufficient dockside storage space. Dock area storage is inevitably limited and expensive, and substantial losses occur through theft, fire, vandalism, and so on. The existence of loading equipment at an offshore port would further ease the handling problem. Not only would such an arrangement mesh with the functions of an offshore port facility, but more secure monitoring devices could be

installed than in the case of siting in the open sea a substantial distance from the coast.

As long as the activity is conducted within the territorial sea by the federal government or its licensee under Title 7 U.S.C. there would not appear to be any problem regarding maintenance of property rights, as Section 270 of the Warehouse Act affords legal protection to the owner. Undersea storage conducted by an individual without this protection, or conducted outside the territorial sea, may leave property rights less secure. Both the Truman Proclamation and the provisions of the Convention on the Continental Shelf and Contiguous Zone speak only to the property rights and jurisdiction over natural resources of the continental shelf seabed and subsoil. What then is the status of a cache of grain emplaced thereon? Agricultural commodities are not natural resources of the shelf; they are intruders from land. As such, the Truman Proclamation and Article Z of the Continental Shelf and Contiguous Zone Convention are unable to give them shelter. Even the Army Corps of Engineers' authority under amendments to the Rivers and Harbors Act extending out to the limits of the continental shelf seeks to threaten their status as an obstruction to navigation, rather than to offer aid and protection.

All is not despair however. In the absence of legislative enactments, one would have to rely on judicial common law to protect one's interests. This being a new use of the sea, one would

not anticipate as much precedent. But man's activities on and in the sea have been varied and extensive throughout history. Similar issues of maintaining property rights over things which were not being held in actual physical possession have arisen before.

Principles of rights in personal property were developed on land and generally reflected some element of possession, that is, an owner of personal property would normally maintain possession over it unless it were lost, mislaid, abandoned, stolen or given to another as a bailment. While possession could not be found unless there existed the power and intent to exclude others from exerting a like measure of control,[5] nevertheless the law permitted some flexibility in this regard by recognizing that the concept of possession was relative and was dependent on the nature of the thing possessed. Desiring to infuse some stability into the relations of people who maintained peaceful and quiet possession over property, the law upheld the rights of one in possession as against everyone except the true owner, or an agent of the true owner who stood in his shoes (hence the source of the incorrect and oft-misunderstood expression that "possession is nine points of the law"). This concept is traceable to the celebrated English case of Armory v. Delamirie (K.B. 1722) 1 Strange 505, where it was held that a chimney sweep who found a jewel maintained rights superior to those of a jewel merchant to

whom he had taken it for appraisal (or for that matter, rights superior to anyone except the rightful owner).

Shifting these principles to the marine environment, and taking account of the fact that man is no longer within his native habitat and therefore is unable to exercise the same measures and incidents of ownership (including possession), the law must accommodate these human disabilities. The bulk of the cases dealing with this issue involve competing ownership claims over those resources of the sea which are goods freely claimable by anyone who can capture them--traditionally fishing and whaling. Ghen v. Rich, 8 F. 159 (D.C. Mass. 1881) was a suit in admiralty to recover the value of a whale that the libellant had killed. The local practice among whalers was to use a distinctive identifiable bomb-lance instead of a harpoon and line due to the speed with which the particular species of whale could swim. After being killed, the whale would sink, only to rise again to the surface several days later and be recovered on the beach or towed into port by other vessels. With the lance in place, the owner would be identified and would normally pay the finder a salvage reward. Considering the technological limitations inherent in hunting this animal, the industry usage and admiralty law had worked well both for the whalers and the finders. The Ghen v. Rich case involved a finder who had disregarded the custom and sold the whale he had found to another without making any attempt to locate the person

who had fired the lance which killed the whale. The court upheld the property rights of the one whose lance had killed the whale as against a third party who had innocently purchased the whale, on the grounds that the custom had been recognized and acquiesced in for many years and that in order for this branch of industry to survive, it would be necessary to uphold the custom since no one would have an incentive to continue, if the fruits of his labor could be appropriated by any chance finder and sold to an innocent purchaser who would get legal title. It should be sufficient, the court held, that the whaler did all that was possible to do to make the animal his own.

Another case to which the court made reference involved a whale that had been anchored and left with marks of appropriation, Taber v. Jenny, 23 F. Cas. 605 (No. 13720)(D.C. Mass. 1856). When found by another, even though it may have dragged from its anchorage, it remained the property of the original captors. As long as the first takers had done all that was practicable in order to secure it, it should remain their property. Both of these cases, and others involving proprietary rights in whales or fish, place heavy emphasis upon the custom and usage of the industry, and on the human limitations in exercising a greater measure of control and possession over the "captured" animals under the circumstances. And correctly so; the law should not impose a burden upon a sector of human activity to which the participants would find it impossible

to conform.

What applicability do these principles then have to the development of a new use of the sea such as underwater food storage? At the outset, it must be kept in mind that the cases on whaling involved the capture of wild animals in their native habitat--the exercise of a right held by anyone. The disputes over ownership are traceable to the status of the animals as common property resources. Each hunter has a right of pursuit equal to that of any other hunter and the issue becomes one of exactly when and under what circumstances do the property rights come to rest in one hunter to the exclusion of all others, that is, did one hunter exercise a sufficient measure of possession and control to exclude his competitors, given the technological limitations of his doing so? Contrasted with this is underseas grain storage. Here, property rights were clearly established prior to the introduction of the commodity into the marine environment. It never was a common property resource open to competing claims, thus it clearly must belong to someone. By its very character, it is a stranger to the sea and must have been placed there by man as opposed to an occurrence which is natural to that environment. If property rights are maintainable vis-a-vis competing hunters in a common property resource native to the sea by the simple act of leaving an identifiable lance in the animal or by anchoring and marking it, then a fortiori property

rights should be upheld to a commodity whose ownership was always vested in someone, and was not intended to be open to capture by anyone as it is properly marked, anchored or identified. The counter-argument would be that since property rights had been clearly vested prior to its being consigned to ocean depths, such a voluntary relinquishment of possession and control amounted to a relinquishment of one's proprietary interest in it. The law of abandonment of property, both on land and sea has, however, consistently required an intent to abandon, or at least acts which, considered in context, clearly indicate such intent. Then too, the time frame under consideration in grain storage would tend to be of a semi-permanent nature--not the short-term emergency type of procedures which sufficed to lay claim to one's whale pending more favorable conditions to take it into actual possession. At some point in time, one's proprietary interest would expire if the whale were left on the beach or left at anchor without doing anything more. Similar principles would govern the rights to grain stored under the sea.

But one must be influenced by the custom and usage of the industry. While it cannot be said that a custom or industry usage already exists for ocean food storage, similar to the practice of reporting a found whale to the person who mortally wounded him, in order for undersea storage as a branch of industry to survive, it will be necessary to uphold the property rights of

any person who did all that was reasonably possible to protect his rights while engaging in the use of the sea as a place to store his grain. Such an entrepreneur, then, would be well advised to utilize every reasonable means of identifying, giving notice, and securely anchoring the storage facility. The dilemma that this places him in, however, is that ironically the greater the knowledge and notoriety with which he asserts possession and ownership over a remote storage site to ensure protection of his proprietary interest, the greater the likelihood that it will be subject to theft or vandalism. And, by the nature of the commodity, being fungible goods, once removed from the storage site and separated from the means of identification and notice of ownership, it becomes virtually impossible to distinguish identification and reestablish ownership. Add to this disability the fact that, although under the Outer Continental Shelf Lands Act, state law would be applied as surrogate United States law (so long as it is not inconsistent with federal law) on that portion of the continental shelf and the fixed structures thereon beyond 3 miles for the purposes of exploring and exploiting natural resources, it is questionable whether state criminal law would even be applicable to undersea storage, as this is not a continental shelf natural resource use.

18 U.S.C.A. Section 661 places the crimes of embezzlement and theft within the special maritime and territorial jurisdiction

as does Section 662 with respect to receiving stolen property. Criminal case law amplifies the applicability of these principles to the subject under discussion. Miller v. United States, 242 F. 907 (1917) was decided under a United States criminal code provision prior to the enactment of Sections 661 and 662 in 1948, but in a criminal trial under today's special maritime and territorial jurisdiction of the United States, a judge should find the case persuasive. The facts disclose that a New Jersey fish company maintained an unsupervised fish pound more than 3 miles from shore in the Atlantic Ocean. Its construction was such that fish, having a natural tendency to swim in one direction at that location, were led by a series of piles into a pocket net opening from which they were unlikely to escape although they were able to. The defendants were apprehended as they were fishing the semi-enclosed fish with a hook and line from a boat moored to the fish pound. They were charged with, and found guilty of, larceny, and the appellate court sustained the convictions. The court was persuaded by the finding that even though the fish were capable of escaping, they had been sufficiently reduced to the possession of the fish pound operator that property rights had become vested. In handling the argument that the taking had been on the high seas, the court said:

> "Theft is theft, wherever committed, and the fact that the thief steals on the high seas, instead of on land, does not change the character of his act. If the fish had become the

> qualified property of an individual, the law of some jurisdiction--in this case, the law of the United States--protected them in a pound, just as it would have protected them in a boat or on a line. The vital question was whether the fish had been sufficiently reduced to possession, so as to become the qualified property of the company, and, if this was true, the accused was guilty."

With the United States special maritime jurisdiction specifically and clearly addressing the issue of theft, ownership rights in undersea storage facilities should be adequately protected under the criminal laws. This would cover crimes committed by United States vessels, but would not extend beyond the territorial sea to foreign flag ships, moreover, criminal laws offer protection only commensurate with their enforcement and ability to apprehend offenders. Remote uninhabited areas of the sea would still remain an easy target for theft which further supports the proposition, advanced above, that a storage facility should be sited, if at all possible, in conjunction with some other offshore installation allowing better security and monitoring techniques than would be available in the open ocean, and also preferably within the territorial sea where both state and federal legislative enactments could afford a better measure of protection.

Before leaving this subject it should be questioned in what ways the rules might be different for temporary deep sea storage of fish catches. First of all, the objectives differ.

Whereas grain storage is primarily to avoid pest and rodent infestation and exposure spoilage, for which shallow depths are ideal, storage of fish catches would require taking more extensive advantage of the cold temperatures and high pressures of the depths--most likely off the continental shelf. Running through the various jurisdictions from shoreward out to sea, within the territorial sea there would be little difference from those points earlier made in regard to grain storage, except that it is less likely that fish storage would be undertaken by a governmental subdivision and it would not be subject to the benefits and disabilities of the Warehouse Act. Upon the continental shelf beyond the territorial sea, one would run into the same statutory void that existed for grain storage--even though one is dealing with marine natural resources, unless they were sedentary species of the shelf, fish storage would not gain any more help from the Outer Continental Shelf Lands Act or the Convention on the Continental Shelf and Contiguous Zone than did grain storage because swimming fish are not classed as a resource of the continental shelf.

The United States has declared a 12 mile fisheries contiguous zone, 16 U.S.C. Sections 1091-1094, within which the same exclusive rights are exercised in respect to fisheries as within the territorial sea, subject to the continuation of recognized traditional foreign fishing. But this law would have

little effect upon undersea storage, except possibly to prevent foreign interference. Although it would appear that this statute would become completely superfluous if and when the United States extends its territorial sea to 12 miles, it is worded in such a manner (Section 1092: "The fisheries zone has as its inner boundary the outer limits of the territorial sea and as its seaward boundary a line drawn so that each point on the line is nine nautical miles from the nearest point in the inner boundary.") that it could be interpreted to maintain an additional 9 mile fishery contiguous zone beyond the territorial sea, no matter what width the territorial sea may be. For example, if the United States adopted a 12 mile territorial sea, the fisheries contiguous zone would, absent amendment of the statute, extend out to 21 miles. But all indications are that if an international agreement is obtained regarding a 12 mile territorial sea, it will be only one part of a total package which likely will contain a 200 mile economic resource zone including fisheries, and such a resource zone would swallow up any fisheries contiguous zone. If a 200 mile economic resource zone were adopted which included provisions for exclusive fishing or fisheries management, logically short-term underseas storage of fish catches would be a proper adjunct of any fisheries management scheme to maximize the fishery's economic yield--toxic decomposing fish add little to a fisherman's revenues. As part of that management plan, the

coastal nation would be able to promulgate protective regulations such as uniform means of identifying storage drop sites, buoys, and so on, and adopt legislation which specifically assured the maintenance of property rights in stored catches. By encouraging the use of this technique with implementing legislation, not only might the usable and economic yield of any given fish catch be improved, but it might actually provide a more efficient fishing technique, thereby increasing the catch per unit effort. As an example, a fisherman owning several boats or a group of fishermen wishing to increase their efficiency through the use of a fishing cooperative might utilize several small boats designed to do nothing other than engage in actual fishing activities, dropping each haul into undersea storage with a buoy identifying the location and boat making the catch. The storage sites of these smaller boats could then be tracked by a larger pickup boat whose only function would be to make the pickup, tally the catches among the fishing boats, and transport the catch to shore for sale. This would increase the specialization and efficiency of all the participants through elimination of much of the equipment and labor downtime wasted by making numerous round trips between the fishery and the shore in an effort to sell the catch before it started deteriorating. (It should be noted, however, that past technological improvements in increasing catch per unit effort have already pushed most United States fisheries far

beyond the point of maximum sustainable yield or maximum economic yield. It is hoped that with the establishment of a 200 mile economic resource zone better fishery stock management will be instituted so that proposing a more efficient fishing technique will no longer be shouted down as destructive to the industry.)

Even with the establishment of a 200 mile economic resource zone, the coastal nation's prescribing competence therein would only extend to the economic resources. Everything beyond the territorial sea would still be the high seas and would be subject to all the high seas rights and obligations. Thus, too much reliance should not be placed on the establishment of the 200 mile zone. On 9 May 1975 the Third United Nations Conference on the Law of the Sea ended without coming to any formal agreements, and with a number of countries even challenging the continued feasibility of the economic resource zone concept. If and when an economic resource zone is established any underseas storage would have to accommodate the commonly held rights of free navigation and laying of submarine cables and pipelines, and others.

As any underseas fish storage would be of a short term nature, even if it were temporarily anchored and buoyed, it is doubtful that anyone would consider it an impediment to navigation or an infringement upon a high seas usage. Due to the shorter time period, the probable more random locations of the storage points (wherever the fishery happened to be located),

and the greater distance offshore (not being able to rely on a coastal triangulation fix) a buoy means of site identification would almost be a necessity. These same factors, coupled with the fact that a fish storage site would generally entail a relatively small quantity being stored, suggest a smaller theft risk than at the more permanent grain storage sites closer to shore which also likely contain substantial quantities of the stored commodity. The earlier cited cases upholding property rights in caught whales and the criminal law case of Miller v. United States are even more directly on point when applied to fish storage. This leads to the conclusion that, even absent establishment of a 200 mile economic resource zone and absent special legislation, common law principles of property rights in caught fish and the criminal law provisions of the United States special maritime jurisdiction should provide adequate protection (as against United States vessels) and an incentive to begin using this to complement existing fishing techniques.

D. WHAT LEGAL POLICIES WILL ENCOURAGE THE RETURN OF STORED PROPERTY IF LOST: WHAT OF SALVAGE REWARD, AND THE LIKE? The discussion up to now has been confined to the laws and issues determinative of the legality of initiating undersea storage and protection of property interests when in the marine environment, and where all technological factors were working the way they were expected to work. But actual marine environmental conditions

being what they are, one can anticipate that things may not always work out the way they are planned. What anticipated problems might arise and how should the law handle them? One can conjure up all sorts of disruptive phenomena both natural and man-made. Typically, what would happen if the storage containers broke free of the anchorage and became lost? What rules should encourage their retrieval without making intentional interference on the part of strangers too attractive? Would the rules differ depending upon whether the lost items were afloat, submerged or cast upon the beach when they were found?

The historical development of rules designed to aid in the retrieval of lost property followed a different course for property lost on land and at sea. Numerous reasons have been cited for this, most commonly that property lost at sea is subject to far greater peril in the marine environment than if it were lost ashore. Another policy reason is that, due to the difficulty and danger inherent in attempting to save property lost at sea, a greater measure of encouragement should be given to persons finding and saving property lost at sea.[6] Origins may also have been in public policy designed to encourage trade among nations,[7] the idea apparently being, at a time when commercial carriage of goods by sea was a far more dangerous undertaking than it is today, that a public policy designed to encourage all attempts to save property lost upon the sea would induce more

merchants to assume the risk of international trade or would diminish the insurance premium if they chose to shift that risk to another's shoulders. Lastly, it may have had some origins in the recognition of human frailties of conscience,[8] where in return for the honesty of one who saved property at sea and made an attempt to find its owner (when in fact it may have been quite easy to conceal the action of saving the property when no strangers observed what happened at sea) a liberal reward should be given. Whatever combination of factors led to its evolution, the principles of marine salvage are historically well established.

Regardless how meritorious or valuable the actions of one saving and returning to the rightful owner property on land may be, there arises no legal obligation on the part of the owner to pay for that service.[9] The voluntary salvor of property on land is responsible to its owner for his negligence, if any, in saving the property, and he gets no reward, except from the generosity of the owner. However, when maritime property is subject to a peril of the sea and through a voluntary act one successfully salvages it, a liberal salvage award will be given by an admiralty court. One difficult question here obviously is whether undersea storage containers are "maritime property." Under traditional English admiralty law, maritime property comprised only vessels, cargo, wreck and freight.[10] In various United States' jurisdictions this has been broadened somewhat to include such property as

a fishtrap frame found adrift,[11] a drifting fish net,[12] a sum of money,[13] and rafts of logs and timber.[14] In denying a salvage award for saving a navigation beacon separated from its anchorage, England has more rigidly adhered to the strict interpretation of "vessels and cargo."[15]

While any underseas storage deposit would, during its transport to or from the shore, probably be considered cargo, the question is what is its status after emplacement at a storage site. There, the risks of loss are probably the greatest. The question is partially circumvented with the answer that, as long as it remained where it was placed and continued serving its function as a storage facility, it could hardly be considered subject to a marine peril from which it could not have been rescued without the salvor's assistance. It was merely fulfilling the function for which it was designed, and which necessitated being exposed to the ordinary perils of the sea. Any rule to the contrary would tend to encourage interference with a lawful and legitimate use of the sea. In such a case it would be the salvor himself who was causing the peril (a dislocation of the storage containers) and it is a well-established principle that one who causes the distress is not entitled to an award for salvage services.[16]

The problem of intentionally putting maritime property in peril is not new. With motives more rooted in a larcenous

intent than in the hope of collecting a salvage award, inhabitants of coastal areas have at times set up false light signals on the beaches at night with the objective of misleading ships to wreckage.[17] A detailed account of some of these abusive practices by which the "harvests of the sea might be made more abundant" is outlined in the case of Murphy v. Dunham, 38 F. 503, 507 (1889). Fraudulent salvage can be a problem with undersea storage facilities. However, the courts require proof that the salved property was in fact in marine peril, and would appear so to the salvor. The easiest way for the owner of an undersea storage facility to limit the incidence of fraudulent salvage would be to list conspicuously and explicitly on any storage container, buoy, anchor, or whatever, the sole conditions under which salvage services would be accepted and that any and all other attempts at "salvage" of any portions of the facility would be rejected. Not only can a fraudulent salvage claim be resisted, damages should be recoverable for any loss which occurred. As the owner of maritime property has the right to reject salvage services at the time they are offered, such terms and conditions should be upheld in the courts.

The more complex problem arises where some extraordinary event, over which the salvor had no influence, placed the stored commodities in a genuine peril involving a substantial risk of loss, for example, storage containers breaking loose and

becoming lost at sea. Upon fulfilling the criteria of voluntary, successful salvage from an actual marine peril, the only remaining disputed issue would be whether the property was maritime property. In the strictest sense of the words, undersea storage containers after being placed on the sea floor would be considered neither vessel nor cargo. Nevertheless, the total design was for operation in the marine environment, continually being subjected to the ordinary perils of the sea. If some extraordinary event placed them in genuine peril of being lost, the same arguments applicable to salvage of vessels and cargo would apply and it would be reasonable for an admiralty court to consider such facilities and property a proper subject of salvage. Rather than taking the restrictive English view, the preferable approach would lie in agreeing with the court in Maltby v. Steam Derrick Boat, 16 Fed. Cas. 564, 566, Case No. 9000 (E.D. Va. 1879) which was approvingly quoted (although noting that exceptions would exist) in the opinion in Broere v. $2133, 72 F.Supp. 115 (E.D. N.Y. 1947), "But I think the test as to what is the subject of salvage is no longer, whether it is a vessel engaged in commerce or its cargo or furniture, but whether the thing saved is a movable thing, possessing the attributes of property, susceptible of being lost and saved in places within the local jurisdiction of the admiralty." Whatever may be the United States practice, awareness of the salvage law of other nations may become relevant. Although whenever

an act of salvage occurs within a nation's territorial sea, the law of the littoral nation is applied whatever the nationality of the ship, on the high seas the law of the nation of the salving ship is generally applied.[18]

If, in the course of the peril to which it was exposed, it washed ashore, would it retain its status as property subject to a salvage award? This would probably turn on whether it was located above or below the high water mark--in other words, whether or not it remained subject to further marine perils capable of causing its loss.

If it were determined that storage containers were not subject to an admiralty salvage award under any circumstances, state legislation may impose a statutory reward upon the finder of lost property, and this would be applicable to property salved in the adjacent territorial sea. The landmark case in this area holding such statutes constitutional is Flood v. City National Bank, 253 N.W. 509 (1934), cert. denied, 298 U.S. 666 (1936), which involved a 10% statutory reward paid to the finder of the proceeds of a bank robbery which had been hidden by the thieves. Although the case involved an inland state, to the extent that such a statute did not conflict with the federal admiralty jurisdiction, if enacted by a coastal state, presumably it would be applicable out to the 3 mile state jurisdictional limits.

E. PROBLEMS OF TORT LIABILITY, TAXATION, AND MISCELLANEOUS ISSUES. A set of issues surrounds what rules of liability will be applied in the event that a vessel collided with an identifying buoy or in some other manner caused damage to the storage facility. Marine collision liability is generally based upon fault, as is land tort liability. Thus, if a boat collides with a floating obstruction to navigation which had not been given a permit by the Army Corps of Engineers, or after it had drifted from its proper location due to negligence of its owners or operators, the negligent party would be liable for the damages. Cases coming to this result have involved floating logs (holding the United States liable,[19] a swimming float,[20] a crane boom protruding 50 feet over the water which was not authorized by the Corps of Engineers (holding a municipality liable).[21]

Where both the vessel, and the owners/operators of the undersea storage facility are at fault, damages are apportioned according to the comparative negligence of each. If anything should go wrong with an undersea storage facility or its surface means of identification, which a court might interpret as a negligent act causing an obstruction to navigation, and that obstruction caused damage to a vessel exercising its right of navigation, the owner of the storage facility might find himself subject to a large measure of potential liability even where the damaged vessel was itself negligent in its actions. In the

converse situation (which is the more likely of the two) the vessel owner, if negligent, would be liable for damage to the storage facility. But as a practical matter this would offer little consolation where, in the absence of maintaining constant surveillance over the facility, the discovery of damage would not occur until long after the vessel had departed without leaving a calling card acknowledging liability.

While operators of storage facilities on land are presently liable for the consequences of their negligent acts just as they would be if the activity were carried on at sea, a crucial difference lies in the paucity of risk exposure experience in the marine environment. Such experience is a necessary part of any cost calculation leading up to an investment decision. Due to the smaller scale, less costly investment required and the shorter term of risk exposure, it is recommended that pilot usage of this technique be initiated in the fishing industry to gain some risk experience before it is initiated on a larger scale for grain storage. On the other hand, if undersea grain storage were initiated by the government (which it is anticipated it would be) liability and lack of risk experience would not have the same priority as in private enterprise, and thus they would not present the same impediments to an investment.

While arguably projects of this sort would be within the discretionary powers of government officials and thus entitled

to the shield of sovereign immunity, the better approach appears to be the one applied in cases involving negligent acts relating to proper placement of aids to navigation, and the like, where the government has been held liable to injured parties.

To the extent that a number of these questions, as well as those discussed earlier concerning property rights and salvage remain unanswered, the whole area of undersea storage would be a proper subject of further legal research, and of legislative enactment. Like so many areas of the law, the manner in which the issue is resolved is less important than producing certainty of expectations--a clear understanding by all participants of what their rights and obligations are so they can order their affairs in accommodation to the adopted rule. Any uncertainties regarding the legal situation of undersea storage can be expected to have a retarding effect on the development of this new use of the sea.

Several minor collateral issues warrant mention. Within the 3 mile limit of state jurisdiction and continental shelf ownership can the coastal state extract rent from the use of its submerged lands as a storage depository? Probably yes, as under the public trust doctrine recognized in many states all submerged lands that have not been properly sold by the states are held in public trust for the common use of the public. To the extent that a storage site would diminish those public

rights, the state could demand a price for the use of its submerged lands. Presumably they could prohibit the activity altogether. But even if a rental agreement were made which conferred a property interest on the user, the exercise of his rights would still be subject to the superior federal powers to make rules for navigation.

Regarding the issue of taxation, within the 3 mile territorial sea the treatment for tax purposes would be essentially the same at both state and federal levels as it would if the activity were carried out on land. Moving out beyond the territorial sea, the Outer Continental Shelf Lands Act specifically excludes the application of state taxation laws. Thus, by going outside the 3 mile reach of the state a storage facility should be able legally to avoid paying state property taxes. Liability for state income taxes would probably remain since most state income tax laws are tied to the residence of the taxpayer and not to the situs of the income producing event, except to the extent that deductions are allowed for income taxes paid to other states in taxing income producing events in their states. Obviously, this statement is a generality and individual state income tax laws would have to be researched for a definitive answer.

The Federal Internal Revenue Code has several sections which would be applicable to this problem. Sections 862 and 863 differentiate between income produced within the United States

and outside the United States, drawing the line of distinction at the outer limit territorial sea. For a United States citizen the treatment and taxation of both are the same, except that income produced outside the United States is capable of being offset by foreign tax credit where that particular income had been subjected to foreign income taxation (not of relevance here). For a non-resident alien however, the Internal Revenue Service does not assess a tax obligation on income produced outside the United States. For one operating an undersea storage facility outside the territorial sea, the income tax consequences would be the same as within the United States for United States citizens. Non-resident aliens (individuals and corporations) operating there, avoid United States tax liability.

The Internal Revenue Code Section 638 specifically covers income producing activities on the outer continental shelf, although the section is limited to income from mines, oil and gas wells and other natural deposits on the continental shelf (limited to nonliving resources of the continental shelf--I.R.C. Regs. Section 1.638-1(a)). Paralleling the above discussion in connection with the Truman Proclamation and the Convention on the Continental Shelf and Contiguous Zone, these provisions are not relevant to undersea storage facilities as they do not involve natural resources of the continental shelf. Under I.R.C. Section 38, an investment in grain storage facilities, whether on or

offshore, should qualify for investment tax credit. On the theory that tax laws serve a dual function of raising revenue as well as encouraging or discouraging certain patterns of behavior and investment decisions, consideration should be given to tax incentives beyond those available under the existing tax structure to encourage this new use of the sea.

FOOTNOTES

[1]Convention on the Territorial Sea and the Contiguous Zone, Geneva, 29 April 1958, T.I.A.S. 5637, 516 U.N.T.S. 205.

[2]Convention on the High Seas, Geneva, 29 April 1958, T.I.A.S. 5200, 450 U.N.T.S. 82.

[3]Policy Declaration with Respect to Natural Resources of the Continental Shelf, No. 2667, 28 Sept. 1945, 59 Stat. 884.

[4]Rivers and Harbors Act, 33 U.S.C. §403, 409.

[5]Brown, The Law of Personal Property, 2d ed., 21 (1955).

[6]Gilmore and Black, The Law of Admiralty, 2d ed., 532 (1975).

[7]McGuffie, Kennedy's Civil Salvage, 4th ed., 12-13 (1958).

[8]Gilmore and Black, supra at 532.

[9]Brown, supra at 30

[10]McGuffie, supra at 4.

[11]Colby v. Todd Packing Co., 77 F. Supp. 956 (D.C. Alaska 1948).

[12]Medina v. One Nylon Purse Seine, 259 F. Supp. 769 (S.D. Cal. 1966).

[13]Broere v. $2133, 72 F. Supp. 115 (E.D.N.Y. 1947).

[14]50,000 Feet of Timber, 9 F. Cas. 47 (No. 4783)(D.C. Mass. 1871).

[15]Wells and Another v. The Gas Float Whitten No. 2, 8 Asp. M.L.C. 272 (1897).

[16]Gilmore and Black, supra at 554; Norris, The Law of Salvage, 168-218 (1958).

[17]Colombos, The International Law of the Sea, 6th ed., 346 (1967).

[18]Id. at 348.

[19]Chelette v. United States, 228 F. Supp. 653 (E.D. Texas 1964).

[20]Morden v. Mullins 153 S.E. 2d 629 (1967).

[21]City of Portland v. Luckenbach S.S. Co., 217 F. 2d (9th Cir. 1954).