

OCEAN NAVIGATION FAIRWAYS THROUGH GULF OF MEXICO " OILFIELDS "

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THE CHANGING NATURE OF OCEAN SPACE ACTIVITY

For centuries the predominant picture of ocean space activity has been fishing and navigation for transportation and military sea power. These ocean space activities are primarily utilization of the water as an instrumentality. Hence, the perspective of traditional political, social, economic and legal interests and attitudes regarding ocean space has had a water instrumentality orientation.

Scientific and technological strides of the past two decades have produced a new picture of ocean space activity. It has become increasingly clear that man has the ability to occupy ocean space. Political and economic incentives make certain that man will occupy ocean space. The last few years have yielded major advances, both conceptual and practical, toward the accomplishment of this task. The outlines of human requirements and capabilities underwater are becoming increasingly clear, as are the dimensions of the still unsolved problems. To a large extent a period of vision and conjecture is ending. Man now faces a period of intensive research, development, application and evaluation of ocean space activity as an extension of his multi-purpose dry land activity. Viewed from this perspective, the water of ocean space is primarily an additional environmental factor which must be reckoned with in order to achieve the desired goals. Hence the newly drawn perspective of political, social, economic and legal interests and attitudes regarding ocean space has a water environment orientation.

From the overlay of the new picture of ocean space activity upon the old there are now appearing the broad outlines of a montage of the utilization of total ocean space — water surface, water column, seabed and subsoil — for a broad spectrum of diverse and often conflicting uses: expansion of navigation and fishing; extraction of oil and gas; harvesting of underseas " crops ", both fixed and migratory, at various levels and temperatures of submarine strata; extraction of chemicals from seawater; mining of ores from the seabed and subsoil; human habitation on the seabed.

In this montage of total ocean space activity the simultaneous existence of a water instrumentality orientation and a water environment orientation creates a perspective of disparate political, social, economic and legal interests and attitudes regarding the problems of the delimitation control and use of ocean space. These problems may be said to be of two general kinds : first, those relating directly to each particular use; and second, problems arising from conflicts among different uses of the same ocean space.

The present article is an attempt to focus upon the solution of the latter problem as it has arisen in the Gulf of Mexico with respect to conflict between navigation and exploitation of submarine oil resources. The decisional process of reconciling the various interests concerned, and operations under those decisions, provides a microcosmic test of the adequacy of the general principles of the 1958 Geneva Conventions On The Law of The Sea and of customary international law and adds to the practice and precedents available in this developing branch of the law — the Law of Ocean Space. In this article an attempt is made to review the considerations involved in the Gulf of Mexico, to note the technical and legal developments that have taken place and to consider these developments in the light of the various interests and legal principles concerned.

THE GENEVA CONVENTIONS ON THE LAW OF THE SEA

The traditional law of the sea is one of the oldest branches of law. For centuries it has been primarily a customary law, evidenced by the usages of mariners, maritime nations, national courts and an occasional *ad hoc* arbitral judgment. An attempt under League of Nations auspices to codify the law of the sea failed in 1930 because the times were out of joint for codification. By the end of the first decade after World War II changed political conditions, the nascent implications of new technology and other factors combined to bring a measure of success to United Nations efforts to codify the law of the sea.

After several years of preparatory work, a United Nations Conference On The Law Of The Sea at Geneva in 1958 reached agreement on four Conventions which collectively delineate a legal framework adequate for resolving most of the presently foreseeable problems. In discussing the Conventions herein, particular attention is given to those provisions bearing upon reconciliation of the conflicts with which the present article is concerned.

The Convention On The High Seas ⁽¹⁾

The Convention On The High Seas was adopted " as generally declaratory of established principles of international law ".

(1) Entered into force for the U. S. September 30, 1962; in force for 37 states as of March 30, 1966.

Article 2 pours meaning into the abstract doctrine of freedom of the high seas : it is exercised under the conditions laid down by the Convention and other rules of international law; it includes freedom of navigation and other freedoms " recognized by the general principles of international law "; it shall be exercised " with reasonable regard " for the interests of all others in their freedom of the high seas.

All states are entitled to lay pipelines on the bed of the high seas ⁽²⁾. States must ensure that ordinarily injury by their ships to pipelines is punishable ⁽³⁾, and that ships sacrificing an anchor to avoid injuring a pipeline shall be indemnified by the pipeline owner ⁽⁴⁾.

The Convention On The Territorial Sea And The Contiguous Zone ⁽⁵⁾

State sovereignty extends to a belt of adjacent territorial sea and is exercised subject to the Convention and other rules of international law ⁽⁶⁾.

Rights and duties of innocent passage of foreign ships through the territorial sea are specified. Passage must be in conformity with the Convention and other rules of international law ⁽⁷⁾ and includes stopping and anchoring incidental to ordinary navigation or when necessary due to *force majeure* or distress ⁽⁸⁾. The coastal state must not hamper passage and in particular must give " appropriate publicity " to navigational dangers of which it has knowledge ⁽⁹⁾. The coastal state may enact laws and regulations in conformity with the Convention and other rules of international law; foreign ships in passage must comply with such laws and regulation, particularly those relating to transport and navigation ⁽¹⁰⁾.

The Convention On The Continental Shelf ⁽¹¹⁾

The coastal state has " sovereign rights " over the shelf " for the purpose of exploring it and exploiting its natural resources " ⁽¹²⁾, but the superjacent water retains the legal status of high seas ⁽¹³⁾.

Much of Article 5 is devoted to laying down in very general terms principles applicable to conflicts between exploitation activities and other uses of ocean space. In particular, exploitation " must not result in any unjustifiable interference with navigation " ⁽¹⁴⁾. The coastal state is then

(2) Art. 26 (1).

(3) Art. 27.

(4) Art. 29.

(5) Entered into force for the U.S. September 10, 1964; in force for 29 states as of March 30, 1966.

(6) Art. 1.

(7) Art. 14.

(8) Art. 14 (3).

(9) Art. 15.

(10) Art. 17.

(11) Entered into force for the U.S. June 10, 1964; in force for 32 states as of March 30, 1966.

(12) Art. 2 (1).

(13) Art. 3.

(14) Art. 5 (1).

authorized to place and maintain exploitation installations and to take measures for their protection, including the establishment of safety zones extending not more than 500 metres around them which all ships must respect ⁽¹⁵⁾. Due notice must be given of the placing of such installations, they must be equipped with permanent warning devices and they must be removed upon abandonment ⁽¹⁶⁾. Installations are expressly prohibited "where interference may be caused to the use of recognized sea lanes essential to international navigation" ⁽¹⁷⁾.

Applying the Conventions

All states have not yet become parties to the Conventions and although it is likely that the Conventions will receive more adherents with the passage of time, it is to be expected that some states will probably not become parties to them. With respect to such states, the uses of ocean space will remain governed by principles of general international law and bilateral agreements. It is not likely that major difficulties will arise because of a lack of direct acceptance of the Conventions by some states. Past international experience indicates that such states will follow, on a basis of reciprocity, general principles essentially the same as those of the Conventions.

The consensus of states on general principles provides sound guidelines for the delimitation, control and use of offshore areas, but it is only a beginning.

The next step is to work out in practice the application of the Conventions' general rules to various particular situations. The effectuation of this step requires interpretations and extrapolations concerning factual situations which will vary widely.

The Conventions have been criticized for failure to give more specific guidelines ⁽¹⁸⁾. Such criticism fails to take account of the lesson of centuries of legal history that workable rules of law cannot be prefabricated in an abstract codification; they can only be derived from experience ⁽¹⁹⁾.

In factual necessity and in law, it is for the coastal state in the first instance to determine for its adjacent ocean space the necessary adjustments between the interests involved in conflicting uses, even though the determination is a matter of legitimate international concern ⁽²⁰⁾.

(15) Art. 5 (2) and (3).

(16) Art. 5 (5).

(17) Art. 5 (6).

(18) McDUGAL and BURKE, *Public Order of the Oceans*, p. 721 (1962).

(19) Cf. O. W. HOLMES, JR., *The Common Law*, p. 1 (1881): "The life of the law has not been logic: it has been experience. The felt necessities of the time, the prevalent moral and political theories, intuitions of public policy, avowed or unconscious, even the prejudices which judges share with their fellow-men, have had a good deal more to do than the syllogism in determining the rules by which men should be governed".

(20) Cf. *Fisheries Case (Eng. v. Nor.)*, 1951 International Court of Justice Reports, p. 116: "The delimitation of sea areas has always an international aspect; it cannot be dependent merely upon the will of the coastal State as expressed in its municipal law. Although it is true that the act of delimitation is necessarily a unilateral act, because only the coastal State is competent to undertake it, the validity of the delimitation with regard to other States depends upon international law".

The Gulf of Mexico situation, discussed below ⁽²¹⁾, illustrates some of the practical problems involved in the reconciliation of navigation and resource exploitation. The shelf Convention provides that installations must not interfere with "recognized sea lanes essential to international navigation" ⁽²²⁾. But, what is a "recognized sea lane essential to international navigation" in an area which has traditionally been crisscrossed by ships without the necessity of their having to avoid installations? Once sea lanes are fixed, must they be regarded as immutably fixed, as most mariners would prefer, or may they reasonably be relocated upon due notice in order to facilitate exploitation of underlying resources? What are the criteria for determining how wide a sea lane must be?

One of the most valuable results of the United States experience in the Gulf of Mexico, and of the current ferment in the North Sea ⁽²³⁾, could be the emergence of a body of accepted interpretations of the several Conventions' generalized guidelines regarding the equitable reconciliation of conflicting uses.

In most situations an absolute choice between conflicting uses will most likely not be necessary. The problem will more likely be: what is a reasonable accommodation between specific conflicting uses in a specific area when all relevant factors are taken into account? The relevant factors would include: (1) the relative economic importance of the conflicting uses to the states concerned; (2) the economic effect of any change on the interested states; (3) the availability of alternative locations; (4) the availability of alternative techniques; (5) the long-range benefits or detriments to be derived from a particular solution. Doubtless there are other factors. The factors and the underlying general problem are very similar to the problem of reconciling conflicting uses of the waters of international rivers and lakes, concerning which there is a wealth of international experience and literature ⁽²⁴⁾. Other analogies and precedents are to be found in the fishery arrangements of the North Sea, in the work of the International Council for the Exploration of the Sea and in the work of the Organization for Economic Co-operation and Development.

UNITED STATES LAW CONCERNING NAVIGATION ABOVE, AND EXPLOITATION OF, THE CONTINENTAL SHELF

The Submerged Lands Act

The United States dominion over lands underlying its territorial sea was granted to the coastal States of the United States by the Submerged

(21) P. 14.

(22) Art. 5 (6).

(23) See: YOUNG, "Offshore Claims and problems in the North Sea", *American Journal of International Law*, vol. 59, No. 3, July 1965, pp. 505-522; and THOMAS, "The North Sea and Its Environs: Future Reservoir of Fuel?", *Geographical Review*, vol. LVI, No. 1, Jan. 1966, pp. 12-39.

(24) See, e.g., GRIFFIN, "The Use of Waters of International Drainage Basins Under Customary International Law", *American Journal of International Law*, vol. 53, No. 1, Jan. 1959, pp. 50-80.

Lands Act ⁽²⁵⁾. However, the United States retained "all its navigational servitude and rights in and powers of regulation and control of said lands and navigable waters for the constitutional purposes of commerce, navigation, national defense, and international affairs" ⁽²⁶⁾.

The Outer Continental Shelf Lands Act

The Outer Continental Shelf Lands Act ⁽²⁷⁾ makes applicable to the shelf, and to installations for resource exploitation, the "Constitution and laws and civil and political jurisdiction of the United States" ⁽²⁸⁾.

The United States Coast Guard is authorized to provide "reasonable regulations with respect to lights and other warning devices, safety equipment, and other matters relating to the promotion of safety of life and property" on the installations and adjacent waters ⁽²⁹⁾.

The United States Army Corps of Engineers is authorized to grant permits for installations in the superjacent waters of the continental shelf ⁽³⁰⁾.

The United States Department of the Interior, Bureau of Land Management, is responsible for the administration of leasing on the shelf ⁽³¹⁾.

NAVIGATION AND NATURAL RESOURCES EXPLOITATION IN THE GULF OF MEXICO

Physical Description of the Gulf

The Gulf of Mexico may be described as a partially land-locked body of ocean space indenting the southeastern periphery of the North American Continent. Its eastern, or seaward, boundary may be considered to be an arbitrary line drawn from the tip of the Yucatan Peninsula of Mexico to Key West at the southernmost tip of Florida. This boundary does not constitute a natural barrier ⁽³²⁾.

The Gulf's surface area is 615 000 square miles. The time and manner of its geological origin is still undetermined, but present evidence favors the conclusion that it was a shallow sea of about 1 000 feet in depth through most of the early Tertiary, the basin subsiding to its present maximum depth of around 12 000 feet during the late Tertiary ⁽³³⁾.

(25) 67 Stat. 29 (1953), 43 U.S.C. secs. 1301-15, 1311(b)(1) (1964). Thus administration of leasing of the bed of the territorial sea is a power of the adjacent State.

(26) 43 U.S.C. sec. 1314 (1964).

(27) 67 Stat. 462 (1953), 43 U.S.C. secs. 1331-43 (1964).

(28) 43 U.S.C. sec. 1333 (a)(1) (1964).

(29) 43 U.S.C. sec. 1333 (e) (1964).

(30) 43 U.S.C. sec. 133 (f) (1964), 33 U.S.C. sec. 403 (1964).

(31) 43 U.S.C. sec. 1334 (1964).

(32) U.S. Dept. of Interior, Fish and Wildlife Service, "Gulf of Mexico, its Origin, Waters, and Marine Life", Wash., Govt. Print. Office, 1954, p.v.

(33) *Id.*, pp. 82-83.

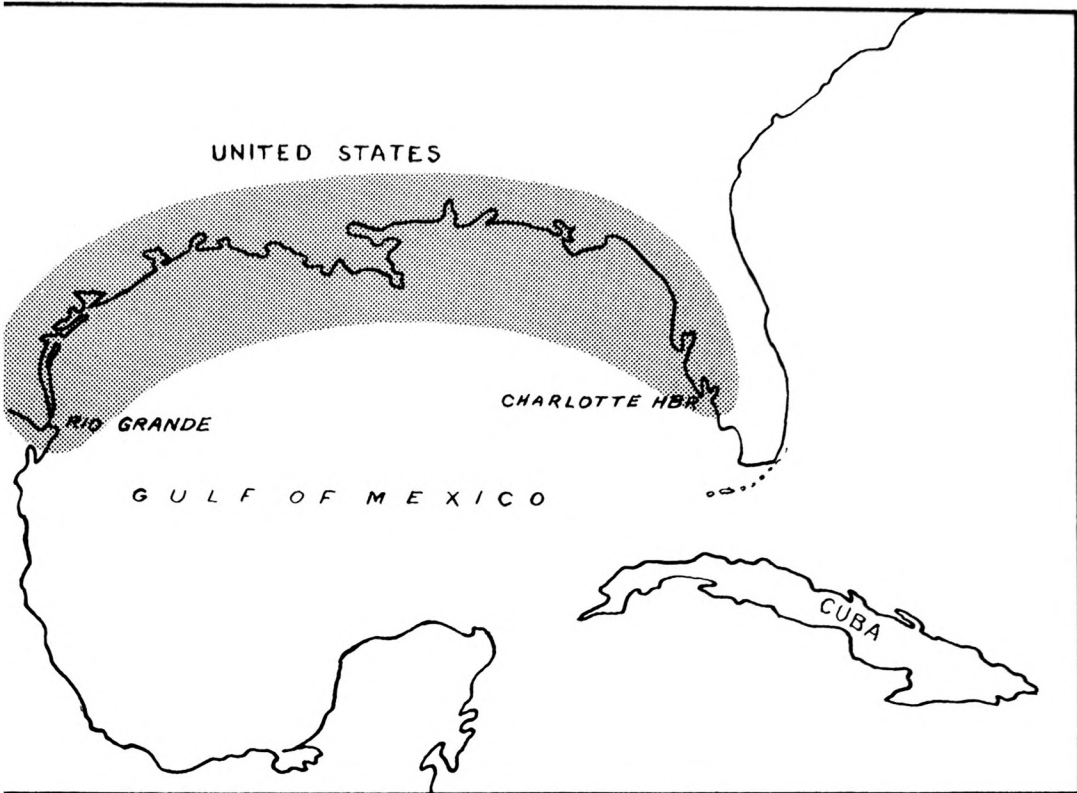


FIG. 1. — Shaded portion indicates area affected by fairways

The width of the Gulf geologic continental shelf off the United States varies generally between 50 and 125 nautical miles, with exceptions at Key West and the Mississippi delta where it narrows to 10 miles.

Shipping Traffic Volume in the Gulf

The picture of the increasing volume of shipping traffic in the Gulf of Mexico for the past several years is shown by the following table.

NUMBER OF SHIPS ENTERING AND CLEARING U.S. GULF OF MEXICO PORTS
IN FOREIGN TRADE ⁽³⁴⁾

ENTRANCES			
Year	U.S. Ships	Foreign Ships	TOTAL
1951	1 513	3 726	5 239
1956	1 351	5 341	6 692
1961	1 784	5 100	6 884
1965	1 689	5 551	7 240

(34) Based on U.S. Census Report FT 975. These figures give a conservative picture of the total volume of shipping traffic because they do not include any ships in coastwise movement.

CLEARANCES			
Year	U.S. Ships	Foreign Ships	TOTAL
1951	1 506	3 854	5 360
1956	1 099	5 602	6 701
1961	1 137	5 392	6 529
1965	1 114	6 183	7 297

Natural Resources Exploitation in the Gulf

Drilling and oil production activities in the Gulf have grown rapidly starting in 1947, and by 1965 the rate of production off Louisiana exceeded 500 000 barrels per day, which is 80 % of the United States offshore production. Offshore, Texas is now beginning to contribute significant production. By 1962 there were about 1 000 oil wells in the Gulf. By 1965 this number had grown to 2 000 (exclusive of bays and estuaries), some of whose structures rise above waters 300 feet deep and are 60 miles from shore. The oil industry is now spending about \$1.6 million dollars per day for drilling activities off Louisiana alone.

Drilling has already been conducted in water depths greater than 600 feet. This is done by a new underwater completion method in which the well is drilled from a floating platform, a fixed underwater structure is built on the seabed to a height of about 30 feet, oil lines are connected to a nearby barge or conventional bottom supported platform and the floating drilling platform is towed away, leaving no hazard to surface navigation. Of course, a ship's anchor could be a hazard to the underwater oil well and pipelines. Oil wells in water depths of 1 000 to 1 500 feet appear feasible with only minor extensions of existing technology.

Navigation Versus Oil Installations

The advent of increasingly significant numbers of oil installations in the Gulf soon demonstrated the reality of conflict between navigational and resource extraction uses of the same ocean space and the nature of the attendant economic loss and physical danger. Instances of navigational confusion, near-collision and collision began to occur, in spite of the inclusion of oil installations in the Navy Oceanographic Office's weekly "Notice to Mariners" and on the newly issued charts of the United States Coast and Geodetic Survey, and in spite of almost perfect compliance by oil installation operators with marking and lighting regulations.

Off the mouth of a channel to the Port of New Orleans a ship lost valuable time due to inability to find the key sea buoy at the entrance because it was hidden by an oil installation.

Off the Port of Galveston a ship lost 37 hours anchored in fog because

there were so many oil installations in the area of the sea buoys leading into Galveston that the ship's radar could not locate the sea buoys.

There have been 25 offshore and 23 inshore collisions of ships with oil installations in recent years.

Resolving the Conflict : Shipping Safety Fairways and Fairway Anchorages

As early as 1948 shipping interests perceived that if they were not to be ultimately closed off from access to Gulf ports traffic lanes would have to be established through the rapidly expanding Gulf oil fields. They took the problem to the Army Corps of Engineers because of the Corps' responsibility for the licensing of obstructions to navigation in the offshore areas of the United States ⁽³⁵⁾. The Corps of Engineers, after consultation with other interested agencies of the United States Government, agreed to designate lanes and anchorages in which it would not allow installations. In 1953 the Outer Continental Shelf Lands Act extended the Corps' authority in this regard beyond the territorial sea ⁽³⁶⁾ and in 1954 the sea lane — or fairways — program was begun. The actual operation of the procedural steps and consultation among the interested groups leading to the designation of particular fairways is illustrated by the following correspondence :

U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
Foot of Prytania Street
New Orleans, Louisiana

26 April 1963

TO WHOM IT MAY CONCERN:

A request dated 9 October 1962 was received from the Tenneco Oil Company, P.O. Box 1345, Oil Center Station, Lafayette, Louisiana, for revision of South and deletion of Southeast Fairways to Calcasieu Pass. To consider this request, a meeting was held in this office 10 January 1963 with representatives from the Federal and State agencies, navigation interests and oil operators, to secure their views on revision and deletion of these Fairways, at which time it was agreed that further discussion would be held between the oil operators and navigation interests.

On 25 January 1963, a meeting was held with representatives of the Tenneco Oil Company, the Offshore Operators Committee, the New Orleans Steamship Association, the Lake Charles Port Authorities, and the Committee on Safe Navigation-West Gulf Area. As a result of this meeting, Tenneco Oil Company has submitted a revised request for modification of this Fairway, as shown on the reverse side of this sheet.

(35) 33 U.S.C. sec. 403 (1964).

(36) 43 U.S.C. sec. 1333 (f) (1964).

The revised request most nearly meets the requirements of the Offshore Operators Committee and the New Orleans Steamship Association for a Fairway to be maintained free of obstructions for use as shipping lanes.

These modifications will also allow more complete development on existing mineral leases in the Gulf of Mexico.

Any comments in connection with the proposed changes should be forwarded to this office not later than 27 May 1963.

Sincerely yours,
 EDWARD B. JENNINGS
 Colonel, CE
 District Engineer

U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
 CORPS OF ENGINEERS
 Foot of Prytania Street
 New Orleans, Louisiana

29 May 1963

SUBJECT: Revision of Calcasieu Fairways
THRU: Division Engineer
 ATTN.: LMVKM
 U. S. Army Engr Division, Lower Miss. Valley
To: Chief of Engineers
 ATTN.: ENGCW-ON

1. Tenneco Oil Company has requested revision of the South and the deletion of the Southeast Fairways to Calcasieu Pass, as shown on inclosed drawing dated November 1962. As their Company and other operators have a number of oil leases that are located in the Southeast Fairway, and as no structures can be erected within this fairway, development of these fields cannot be accomplished.

2. To consider this request, a meeting was held with Federal and State agencies, navigation interests and oil operators to secure their views on the revision and deletion of these fairways, at which time navigation and local interests objected to the deletion of the Southeast Fairway. It was agreed that an additional conference would be held with oil operators and navigation interests to further discuss this problem. Another meeting was held 25 January 1963, and from the results of this meeting, Tenneco Oil Company has resubmitted its request for revision of the fairways as shown on the reverse side of the notice.

3. By notice dated 26 April 1963, navigation and other interests were advised of the proposed request of Tenneco Oil Company. No replies were received. Copy of this notice, together with mailing list, is inclosed.

4. The District Engineer of the Galveston District concurs in these changes.

5. It is recommended that the Calcasieu Fairway as shown on drawing on reverse side of notice be approved.

EDWARD B. JENNINGS
Colonel, CE
District Engineer

Office of the Chief of Engineers, Washington 25, D.C., 19 June 1963

To: Division Engineer, U. S. Army Engineer Division, Lower
Mississippi Valley.

Revision of the Calcasieu Pass Fairways, *Gulf of Mexico* as shown on the reverse side of notice dated 26 April 1963 is approved.

Incls w/d

For the Chief of Engineers:
JACKSON GRAHAM
Brigadier General, USA
Director of Civil Works

U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

Foot of Prytania Street
New Orleans, Louisiana

26 June 1963

TO WHOM IT MAY CONCERN:

Reference is made to notice dated 26 April 1963, regarding the revisions of Calcasieu and Sabine Pass Fairways.

The modifications of the fairways as shown on drawing on the reverse side are approved. This supersedes the fairways shown on map titled, "Gulf of Mexico Fairways and Anchorage Areas in the New Orleans District", dated 17 February 1955 (Revised 21 November 1961).

Sincerely yours,
EDWARD B. JENNINGS
Colonel, CE
District Engineer

By the early 1960's, it had become clear that merely creating the fairways, charting the oil installations and publishing their location in the "Notice to Mariners" was not sufficient. Although the fairways and anchorages areas had been in existence since 1953, mariners generally tended to disregard them, perhaps sometimes through reluctance to alter time-honored routes, but more often because of unawareness of their

existence. Maximum benefits from the fairways could only be achieved by marking them on the charts actually used by mariners.

The matter of charting the fairways was raised by the following letter from the British Hydrographer :

**HYDROGRAPHIC DEPARTMENT
(ADMIRALTY)
OXGATE LANE
CRICKLEWOOD
LONDON, N.W. 2**

15 March 1962

Sir,

I have the honour to refer to the very large number of drilling structures now in the Gulf of Mexico and listed in your Notice to Mariners No. 632 in the Weekly Edition dated 3rd February, 1962.

2. It has not been the U. K. practice, in view of the smaller scale charts, to show these individual structures on the charts but suitable cautions have been inserted at intervals from Corpus Christi, eastwards to the Mississippi River.

3. I should however be most interested to know whether any arrangements are in force to keep approach channels clear of structures and whether there is any chance of indicating such clearways on the charts in addition to the Cautions already employed.

I have the honour to be, Sir,
Your obedient Servant,

HYDROGRAPHER.

The Hydrographer,
U. S. Navy Hydrographic Office,
Washington 25, D.C.,
U.S.A.

As a result of the British Hydrographer's letter the Corps of Engineers proposed to the Coast and Geodetic Survey the charting of the fairways and anchorages. The Coast Guard concurred in this proposal and recommended a conference of the interested governmental agencies to discuss the matter. The conference was held 30 August 1962 in the office of Captain J. T. JARMAN, Assistant Director for Cartography, Coast and Geodetic Survey. The minutes of the conference are here reproduced verbatim in order to show the full gamut of the factors and interests involved ⁽³⁷⁾ :

"At 10:15 A.M. the meeting was opened by Captain JARMAN, who then said that this joint meeting was being held in accordance with a request

(37) The Agencies represented were : Coast Guard; Corps of Engineers; Bureau of Land Management, Dept. of Interior; Geological Survey; Naval Oceanographic Office (formerly Navy Hydrographic Office until 10 July 1962); Coast and Geodetic Survey.

in letter of August 3, 1962, from the Coast Guard. The purpose of the meeting, stated Captain JARMAN, was primarily to discuss and make recommendations as to charting the fairways through the oil fields in the Gulf of Mexico. Captain JARMAN said that all opinions expressed would be considered those of the representative and not necessarily those of his agency. Cdr. PAULSON was then asked to give some of the background for today's meeting.

" Cdr. PAULSON (Chief, Nautical Chart Div., C&GS): Our meeting this morning on the charting of fairways dates back to a letter of March 15, 1962, from the British Admiralty to the Naval Oceanographic Office. The British Admiralty wrote that the very large number of drilling structures now in the Gulf of Mexico and listed in Notice to Mariners Feb. 3, 1962, were of serious concern to them since the smaller scale of their charts prohibits showing individual structures. They conclude with " I should however be most interested to know whether any arrangements are in force to keep approach channels clear of structures and whether there is any chance of indicating such clearways on the charts in addition to the Cautions already employed ". Since the area in question is charted by the C&GS and the approval of permits for the erection of drilling structures falls within the purview of the Corps of Engineers, this letter was forwarded to the Coast and Geodetic Survey for consideration and coordination with the Corps of Engineers. Any decision of this very serious problem will affect at least each of the six government agencies represented here this morning, and that is why we are here.

" Mr. TICKELL (Naval Oceanographic Office) stated that for the past several years the Naval Oceanographic Office has been receiving numerous complaints from mariners about this dangerous situation, especially in the Ships' Reports. At present, there are over 1 000 oil wells in the Gulf of Mexico. They are increasing at a tremendous rate. The situation changes overnight. Some wells are removed or moved. At present, all offshore structures are identically marked with Quick Flashing Lights (privately maintained) sometimes making it very difficult for the mariner to identify the structure. Consideration should be given to individual characteristics for those structures along the fairways. There have been only seven revisions to established fairways since 1954 in the New Orleans area. Charting the fairways, even though not marked, would be helpful to the mariner.

" Mr. DOMINICK (Corps of Engineers) said that all agencies please forward copies of these complaints to the Corps of Engineers as soon as possible so that a thorough study can be made, including public hearings, etc. Perhaps a minimum of one year from receipt of these complaints would be required to set up the necessary procedure.

" Lt. Cdr. PERKINS (Coast Guard) commented that the Coast Guard must approach this problem very cautiously. For example, the establishment of one deep-water light would entail an initial cost of six to ten million dollars. A study must be made of what the mariners want. The Coast Guard prefers fairways of 4-mile width instead of the present 2-mile width. In many areas of the Gulf, particularly the Western part, navigation to within two miles of accuracy is not possible during periods of poor visibility. If the

fairways remain at their present width, aids to navigation would be required to permit safe passage during reduced visibility. The Coast Guard does not have authority to establish visual aids such as buoys or fixed structures in this instance. On the other hand, if Loran-A were installed in the Western Gulf it is believed that safe navigation of the fairways by loran alone would be possible if they were widened to approximately four miles. This would benefit, of course, only loran-equipped vessels. The Coast Guard is not in favor of the charting of fairways on C&GS charts until the matter is more satisfactorily resolved.

“ Mr. GUMM (Bureau of Land Management) said that the primary responsibility of the Bureau of Land Management is to lease these lands, or in some cases to withhold them. Public Law 85-337, referred to as the Engle Act, governs our policy. Before we lease any submerged land, we always inform the operator he must obtain a permit from the Corps of Engineers prior to erecting the structure. We also caution the operator that the area he is leasing may be in a fairway, in which case no permit to build in the area would be given by the Engineers.

“ Mr. SPRATT (Geological Survey) displayed a detailed layout in color depicting areas already leased. No fairways were shown thereon. All present commented that this indicated the seriousness of the situation. There were no areas where fairways could be established without prohibiting construction in many leased areas. Each leased area (square) consists of 5 000 acres. Submerged pipelines are a problem. Wells can be drilled as far as 4 000 feet horizontally.

“ Mr. SHALOWITZ (Coast and Geodetic Survey) pointed out that while the United States has an obligation under the Outer Continental Shelf Lands Act to develop the natural resources of the shelf, it still has an obligation to safeguard navigation. Even the Submerged Lands Act, which gave the states the right to explore the submerged lands within their boundaries, is made subject to the navigational servitude of the United States. Also, we must look forward to the day when the 1958 United Nations Convention on the Continental Shelf becomes operative (14 nations including the United States have thus far ratified it). The Convention recognizes the paramountcy of freedom of navigation over exploration for natural resources and does not countenance interference with the use of recognized sea lanes essential to international navigation. It would appear that the solution lies in establishing as nearly as possible permanent fairways in coordination with the Interior Department's leasing policies and then withhold from leasing as much of such lands as is necessary to safeguard navigation.

“ Mr. DOMINICK commented that the fairways must remain flexible to suit producing wells.

“ Captain JARMAN summarized by saying that the U.S. needs both shipping and oil. The C&GS agrees that the fairways should be charted, but not until control is instituted to declare that the fairways are permanent, or as nearly permanent as possible, and that the entire program is closely coordinated between all government agencies.

“ To assist in finding a solution, agency representatives present here agree that the minutes of this meeting will be the nucleus from which to

expand our efforts. It is further agreed that the " Agency Position " regarding this complex problem, or at least comments on the minutes of this meeting, will be forwarded to the Corps of Engineers for their review of the situation. It is suggested that copies of related information, especially requirements expressed by chart users, be incorporated in each reply.

" The Coast and Geodetic Survey will be pleased to cooperate in any way possible to expedite a solution.

" Mr. DOMINICK agreed that the Corps of Engineers, with the help of all agencies present today, will gladly review the entire situation and make recommendations as soon as practicable.

" After all agreed to cooperate, the meeting adjourned at 11.45 A.M. ".

On September 11, 1962 the following reply was sent to the British Hydrographer :

September 11, 1962
Your reference :
H. 345/62

The Hydrographer
Hydrographic Department
(Admiralty)
Oxgate Lane, Cricklewood
London, N.W. 2, England

Dear Sir :

Reference letter was forwarded to this bureau for consideration as noted in The Hydrographer's letter serial 4773 of April 6, 1962, to your department. As a result of your letter the matter of charting the Gulf of Mexico fairways has been reopened and discussed at length with the other agencies concerned with authority in the area.

At present the location and widths of the fairways are subject to imminent change and extension. Also, proposals for the establishment of a system of aids to navigation will require further extensive study. The consensus of opinion is that, while the charting of the fairways is desirable as a help to the mariner, it would be proper to defer charting them until permanency of the lanes is established. Meanwhile each agency concerned will intensify its effort leading toward a solution of this complex problem.

Sincerely yours,
H. Arnold KARO
Rear Admiral, USC&GS
Director

In April 1963 a conference of Federal and State Government officials in New Orleans gave further consideration to the problems attendant upon charting the fairways; it was decided the time had come to call a conference to obtain the views of private shipping and oil interests. The latter

conference was held 20 June 1963 at the headquarters of the Army Engineers District in New Orleans.

The meeting was presided over by Col. Edward B. JENNINGS, District Engineer of the New Orleans District. He stated the purpose of the meeting was to determine what can be done by Federal and State Government agencies to foster safe navigation and at the same time promote optimum development of natural resources of the continental shelf. There then followed a complete and unrestrained exchange of ideas regarding these conflicting objectives, with particular reference to aids to navigation, use of fairways, location of fairways, width of fairways, length of fairways, marking of fairways, permanence of fairways and the need and means of charting fairways.

The conference of 20 June 1963 revealed a significant shift in the attitude of shipping interests regarding the establishment and use of the fairways. When oil installations first began to appear in the Gulf, shipping interests wanted lanes reserved from oil installations primarily as a defensive measure. In other words, ships would continue to pick their way among the oil installations, but the fairways would be available to fall back on if oil installations became so thick as to block off all other paths. Now, ten years and 1 000 oil wells later, shipping interests had come to the position that in the interest of safe navigation the fairways must be designated as permanent, must be marked and charted, and that if this were to be done mariners would automatically use them voluntarily.

The oil interests recognized the need for fairways for protection of oil installations as well as ships, were in favor of their being marked and charted but were opposed to the concept of permanency of the fairways if this meant they were to be immutable.

The matter of permanency of the fairways, upon examination, proved to be more academic than real. From the very beginning there had been complete cooperation between shipping and oil interests in the locating and relocating of the fairways; they tend to become substantially permanent in fact, because over a ten year period there had been need for only a very few changes, which had been readily agreed upon. The manifested consensus of the meeting of 20 June 1963 was that the fairways and anchorages would remain in principle subject to modification but only after due notification and consideration of the views of all interested parties.

Consensus was also readily achieved upon the next most important matter, that of the width of the fairways.

From the navigator's viewpoint the desirable width of a fairway is related in some degree to the type and completeness of the channel marking and aids to navigation. In general, a two-mile wide fairway is adequate.

From the oil producer's viewpoint, the desirable width of a fairway is related in some degree to the technological capability of directional drilling for different objective depths and purposes; the greater the width of a fairway the greater is the financial burden of developing the resources. A fairway width of more than two miles substantially eliminates the availability of any underlying resources. Once a fairway is established, it is easier to try directional drilling than it is to move the fairway.

With regard to the length and marking of fairways, the consensus was readily achieved that each fairway must be considered separately because each presents its own particular problem, the factors being the draft of ships, the amount of traffic involved, the degree of congestion of the installations and the seaward limits of oil activity.

Finally, it was felt that it would be undesirable to attempt to require that ships must use the fairways. In bad weather it might be impossible to keep a ship within a fairway. If the safety of the ship was involved it might be undesirable to keep a ship within a fairway. This should be within the master's judgement, depending upon the circumstances. The consensus was that if the fairways were charted prudent mariners would normally use them. In the event of a collision outside a fairway it is likely a court would hold that the ship bears a heavier burden of due care.

By November 1965 the final administrative details were worked out for formalizing, publicizing and charting the traffic lanes and anchorage areas at entrances to ports.

The traffic lanes will be known officially as " Shipping Safety Fairways and Anchorage Areas, Gulf of Mexico ".

Shipping will not be required to use the lanes but it is anticipated they will normally be used because they provide safer entries and exits at Gulf ports.

The fairways and anchorages will be shown on approximately 45 charts released by the Coast and Geodetic Survey over a three year period ⁽³⁸⁾. The overall area covered by the 45 charts extends from Charlotte Harbor on the Florida Gulf Coast to Brazos Santiago on the Texas coast near the Mexican Border. The first charts to show the fairways and anchorages (C&GS Nautical Charts 1115 and 1116) were issued in January 1966 and cover the Gulf coast from Port St. Joe, Florida, to Galveston, Texas. The fairways and anchorages will be added to the charts involved as they come up for printing. These will include 32 charts scheduled for issuance in 1966, eight in 1967 and five in 1968.

The charts will include this explanatory note :

" Shipping Safety Fairways, shown by solid magenta lines established from Corps of Engineers coordinate positions, are areas wherein the Department of the Army has granted no permits for structures pursuant to 33 U.S.C. 403 and 43 U.S.C. 1333 (f), nor does it expect to do so. This reservation is subject to modification, but only after due notification and consideration of the views of interested parties, and advance publication of any adverse determination. Caution should be exercised when approaching or navigating these fairways ".

Official notice of the fairways and anchorages came into full force and effect thirty days after publication in the Federal Register on 25 January 1966 ⁽³⁹⁾. Copies of the notice were sent to all known interested parties and were also posted at post offices and other public places.

(38) The C&GS annually distributes approximately two million copies of nautical charts to military, commercial and recreational mariners.

(39) Pp. 955-957.

The official notice, as published in the Federal Register, and as it will appear in Title 33, Code of Federal Regulations, includes the following :

TITLE 33. — NAVIGATION AND NAVIGABLE WATERS

Chapter II. — Corps of Engineers

Department of the Army

PART 209. — ADMINISTRATIVE PROCEDURE

Shipping Safety Fairways and Anchorage Areas, Gulf of Mexico

Pursuant to the provisions of section 10 of the River and Harbor Act of March 3, 1899 (30 Stat. 1151; 33 U.S.C. 403), and section 4 of the Outer Continental Shelf Lands Act of August 7, 1953 (67 Stat. 462; 43 U.S.C. 1333(f)), Section 209.135 is hereby prescribed establishing shipping safety fairways and anchorage areas in the Gulf of Mexico effective upon publication in the FEDERAL REGISTER, as follows :

Section 209.135 SHIPPING SAFETY FAIRWAYS AND ANCHORAGE AREAS, GULF OF MEXICO.

(a) Purpose. Fairways and anchorage areas as described in this section are established to control the erection of structures therein to provide safe approaches through oil fields in the Gulf of Mexico to entrances to the major ports along the Gulf Coast.

(b) Permits. Department of the Army permits are required pursuant to law (30 Stat. 1151; 33 U.S.C. 403) and (67 Stat. 462; 43 U.S.C. 1333(f)) for work or structures in the Gulf of Mexico in coastal waters and the waters covering the outer continental shelf. The Department of the Army will grant no permits for the erection of structures in the areas designated as fairways, since structures located therein would constitute obstructions to navigation. Within an area designated as an anchorage area, not more than four (4) structures will be permitted at any time. Structures shall be not less than three (3) nautical miles apart and shall be not less than one and one-half (1 $\frac{1}{2}$) nautical miles from the sea buoy at any harbor entrance.

(c) Modification of the areas. The fairways and anchorage areas are subject to modification but only after due notification and consideration of the views of interested parties, and advance publication of any adverse determination (see Section 209.520 for notice of proposed rule making).

(d) The areas.

[There are thirty fairways and twenty-one anchorages, described by coordinates of latitude and longitude which outline their borders.

They are generally two miles wide. The shortest fairway is at Grand Bayou Pass, Louisiana, approximately one nautical mile long. The longest fairway extends along the coast from Calcasieu Pass, Louisiana, to Brazos Santiago, Texas, approximately 322 nautical miles. The longest fairway into a port extends approximately 125 nautical miles from the 100 fathom (600 feet) depth curve in the Gulf of Mexico to Sabine Pass, Texas.

The cities affected by the fairways are : *Florida* : Punta Gorda, Bradenton, St. Petersburg, Tampa, Port St. Joe, Panama City, Pensacola;

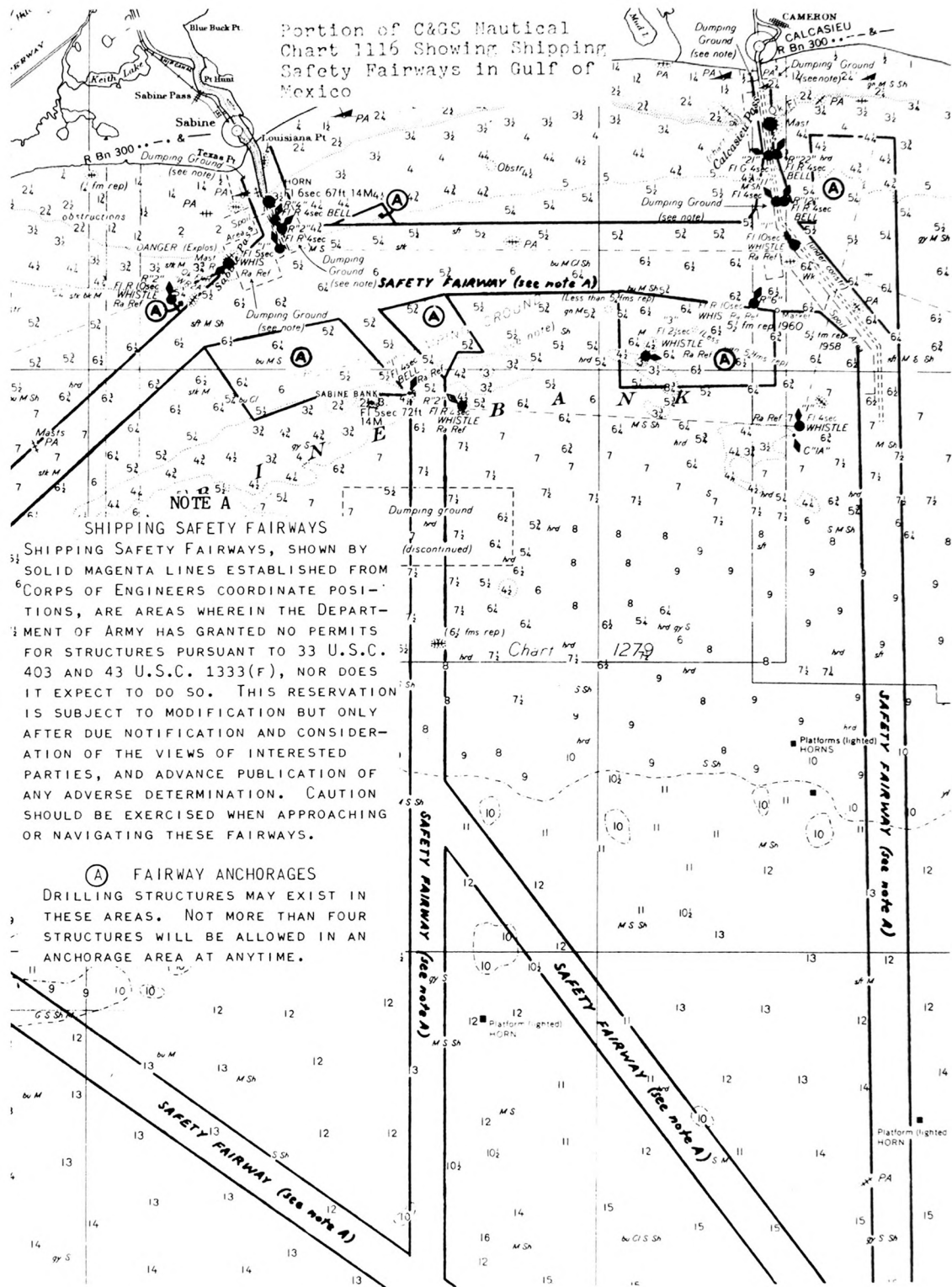


FIG. 2. — Portion of C&GS Nautical Chart 1116 Showing Shipping Safety Fairways in the Gulf of Mexico

Alabama : Mobile; *Mississippi* : Pascagoula, Biloxi, Gulfport; *Louisiana* : New Orleans, Houman, Cameron, Lake Charles; *Texas* : Port Arthur, Port O'Connor, Port Neches, Beaumont, Orange, Galveston, Houston, Freeport, Port Lavaca, Arkansas Pass, Corpus Christi, Port Mansfield, Port Isabel, Brownsville].

Thus is the adumbration of another chapter being added to the perpetual story of man's efforts to safeguard life and property in the utilization of ocean space environment for the production of wealth.