MEMORIAL OF THE LIBYAN ARAB JAMAHIRIYA

MÉMOIRE DE LA JAMAHIRIYA ARABE LIBYENNE

INTRODUCTION

1. This Memorial is filed in accordance with the Order made by the Vice-President of the Court in the present case on 20 February 1979 fixing 30 May 1980 as the time-limit for the filing of Memorials by the Republic of Tunisia (hereinafter referred to as "Tunisia") and the Socialist People's Libyan Arab Jamahiriya (hereinafter referred to as "Libya")[1]. The Order was made having regard to Article 48 of the Statute of the Court and the relevant Articles of the Rules of Court and taking into account the Special Agreement between Tunisia and Libya signed at Tunis on 10 June 1977 by which the Parties agreed to have recourse to the Court concerning the question of delimitation of the areas of the continental shelf appertaining to the two States.

2. The Special Agreement was signed on 10 June 1977 and instruments of ratification were exchanged in Tripoli on 27 February 1978. It was notified to the Court, in accordance with Article 5 of the Special Agreement, by letter dated 25 November 1978 from the Minister of Foreign Affairs of Tunisia which was filed in the Registry of the Court on 1 December 1978. That letter also transmitted a copy of the Special Agreement in the Arabic language together with a translation into French. On 2 December 1978, Libya received a telegram from the Registrar of the Court informing it of the notification of the Special Agreement and on 10 January 1979 also received a letter from the Registrar to the same effect.

3. By a letter dated 14 February 1979, the Secretary of Foreign Affairs of Libya transmitted a copy of the Special Agreement in Arabic to the Registrar together with a translation in English certified as accurate[2]. As indicated in paragraph 3 of the letter, the original Arabic text is the authentic text of the Special Agreement. It is the only authentic text. Libya, however, has regarded the English translation enclosed with that letter as a true and correct translation and (in addition to the observations set forth in paragraphs 5 through 8 below) reiterates its reservation with respect to any discrepancies between the English translation and the French translation mentioned in paragraph 2 above. Unless a contrary intention is expressed or appears from the context, references in this Memorial to the text of the Special Agreement are to the Arabic text and, as appropriate, to the English translation enclosed with the letter of 14 February 1979.

4. The English translation of the Special Agreement reads as follows:

[See Special Agreement, pp. 26-27, supra*]*

[1] The term "Libya" refers to the State of Libya and its government, whatever the form of government at the relevant time, and, as may appear from the context, also to the territory which now belongs to the Socialist People's Libyan Arab Jamahiriya.

[2] Copies of the letter dated 14 Feb. 1979 and the original Arabic text and English translation of the Special Agreement are attached as ***Annex I-1***.

5. The role assigned to the Court by the Special Agreement is defined in Articles 1 through 3. In this connection, the Parties have agreed to have recourse to the Court to facilitate the delimitation by themselves of the area of the continental shelf appertaining to Libya and the area of the continental shelf appertaining to Tunisia in accordance with the judgment of the Court and with its explanations and clarifications (if any should be required).

6. Article 1 of the Special Agreement requests the Court to render a judgment. Pursuant to Article 38 of the Statute of the Court and Article 1 of the Special Agreement, that judgment is to reflect the relevant principles and rules of international law for the delimitation by the Parties of the areas referred to in paragraph 5 above.

In Article 1 the Parties also request the Court to take its decision—

> "... according to equitable principles, and the relevant circumstances which characterise the area, as well as the new accepted trends in the Third Conference on the Law of the Sea[1]."

This reference to "equitable principles" does not confer power on the Court to decide the case *ex aequo et bono*, since here, as in the *North Sea Continental Shelf Cases*—

> "[t]here is ... no question in this case of any decision *ex aequo et bono*, such as would only be possible under the conditions prescribed by Article 38, paragraph 2, of the Court's Statute[2]."

7. Although the second paragraph of Article 1 of the Special Agreement requests the Court "... to clarify the practical method for the application of these principles and rules in this specific situation ...", it does not transfer the task of delimitation from the Parties to the Court. The express purpose of the request made to the Court in that paragraph is to obtain sufficient clarification of the practical method for the application of these principles and rules to enable the experts of the two countries to delimit the areas without any difficulties. Accordingly, there is no foundation for the insertion of the words "avec précision" in the expression "de clarifier avec précision la manière pratique" in the first line of paragraph 2 of Article 1 in the French translation[3] transmitted to the Court with the Tunisian letter dated 25 November 1978 since the original Arabic text provides no justification for their insertion.

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[1] See para. 82 below and fn. 2 at p. 35 below with regard to the *Informal Composite Negotiating Text/Revision 2*, Third United Nations Conference on the Law of the Sea. Any references to the work of the Conference in the Special Agreement or in this Memorial or these proceedings generally should be without prejudice to any position taken or to be taken by Libya in connection therewith.

[2] *I.C.J. Reports 1969*, p. 48, para. 88.

[3] See *Annex 1-2* for a copy of the French translation of the Special Agreement as submitted to the Registrar by the Tunisian Minister of Foreign Affairs.

8. If further explanations or clarifications should be required to enable the Parties to determine the line of delimitation of the continental shelf areas, it is clear that they may be sought under Article 3 of the Special Agreement. At the present stage no issue turns on Article 3, but it may be observed that the power under that Article is not confined to mere interpretation of the judgment under Article 1. By virtue of Article 3, any such explanations and clarifications—as well as the judgment under Article 1—will be binding on the Parties.

9. In compliance with Article 49 of the Rules of Court, this Memorial is divided into the following parts:

Part I contains a statement of the relevant facts, including the history of the matter, the historical background of the area as a whole, and the geological and geographical facts relating to the area concerned.

Part II contains a statement of the law.

Part III contains the legal arguments developed by Libya in support of its Submissions, together with application of these arguments to the facts of this case.

Part IV contains a summary of the Memorial.

The final portion of the Memorial sets forth Libya's Submissions to the Court.

In addition, documents cited in this Memorial, together with English or French translations if the text is not in one of the official languages of the Court, are filed herewith in Volume I of the Annexes. Volume II of the Annexes consists of a geological Study.

PREFATORY NOTE

10. At the outset, it may be useful to point out that, as will be evident from the history of their discussions, the Parties have not, to the present, had occasion to define major factual and legal issues which must form the predicate of any dispute and provide a necessary focus for resolution. In the present case, Memorials are being filed simultaneously against a background of some uncertainty and confusion concerning facts and issues upon which the Parties have relied or may intend to rely. Certain positions have been taken, and claims asserted, during a sporadic course of discussions. These may, or may not, continue to reflect current views. It is, accordingly, a prime function of the present proceedings to provide—for the first time—an occasion for the mutual effort of the Parties to marshal facts and formulate issues which, from their respective viewpoints, provide a focus for the Court's deliberations within the framework envisaged by the Special Agreement. This Memorial seeks to accomplish this goal, with an economy intended to avoid an excess of anticipatory rebuttal of unpredictable contentions, while at the same time stressing those preponderant considerations of fact and law which, in the view of Libya, lead to and justify its Submissions. Libya reserves the right to supplement these considerations and its Submissions in the light of the Tunisian pleadings and the further development of the issues between the Parties.

PART I
THE FACTS

CHAPTER I
GENERAL HISTORICAL BACKGROUND

11. Part I of this Memorial is concerned with factual background which is of significance to an examination of *The Law* (Part II) and to the *Application of the Law to the Facts* (Part III). It commences with a brief summary of general historical background.

12. Libya became an independent State on 24 December 1951. Tunisia became an independent State on 20 March 1956. Independence, so recently achieved by both Libya and Tunisia, was the culmination of centuries of varying degrees of foreign domination. This had continued from at least as early as the Seventh Century BC. The history of that domination and the emergence of Libya and Tunisia to independence is outlined very briefly in the following paragraphs. (The position of Libya and Tunisia on the African Continent is portrayed by *Map No. 1*[1].)

13. The traditional territory of Libya consists of three parts, Cyrenaica, Tripolitania and Fezzan, corresponding to the three provinces at the date of independence. Cyrenaica and Tripolitania border on the Mediterranean Sea and Fezzan is inland to the south. Cyrenaica was first colonized by Greeks, and later came under the control of the Ptolemies followed by the Romans. Tripoli was originally a Phoenician colony and became dependent on Carthage. It also fell under the power of Rome. In the Fifth Century both Tripoli and Cyrenaica were conquered by the Vandals, but in the following century their power was destroyed by the Byzantines.

14. In the middle of the Seventh Century the whole country came under Arab control and Christianity gave place to Islam. There followed a period of many centuries during which the government of Tripoli was linked with that of Tunis. In the middle of the 16th Century the territory became a part of the Ottoman Empire, whose power soon became considerably weakened; between 1714 and 1835 Tripoli was practically independent. In 1835 the Ottomans took advantage of a civil war to reassert their direct authority, which continued until the Italians occupied Tripoli in 1911.

15. The Italo-Turkish War of 1911-1912 ended with the Treaty of Ouchy by which the Porte recognized Italian sovereignty over the province

[1] *Map No. 1.* and the other specially prepared maps incorporated into this Memorial (i.e., *Map Nos. 2, 3, 4,* and *8*) were prepared by the Department of Cartographic Services of the University of Maryland with the assistance of Dr. G. Etzel Pearcy, formerly The Geographer, United States Department of State.

(41) (42)

of Tripoli, but fighting continued between the Libyans and the Italians. By the spring of 1914 the Italians had occupied the whole country. During World War I, however, Italy's control was limited to key points on the coastal area. After a period of uncertainty, Italy initiated fresh efforts in 1921 to reestablish control. Early in the 1930s, Italy succeeded in subduing the entire country, and the administration became almost exclusively Italian. In 1934 the colony was renamed Libya (the ancient name for Africa) and, in 1939, the territory of Libya was incorporated into the metropolitan Kingdom of Italy. World War II brought reverses of fortune for Italy in North Africa. By the spring of 1943, the Italo-German forces were expelled from Libya. British forces occupied Cyrenaica and Tripolitania and French forces occupied Fezzan; the entire area was accordingly placed under Allied military administration.

16. By the Italian Peace Treaty of 1947, Italy formally renounced title to Libya and the future of Libya was referred to the United Nations. This led in December 1951 to the establishment of a united Libya as a kingdom with a federal constitution. Foreign troops remained present, however, until the completion of the evacuation of British and United States forces in 1970. Meanwhile, on 27 April 1963, the federal constitution was abolished and Libya became a unitary State. On 1 September 1969, the King was deposed and Libya was proclaimed the Libyan Arab Republic. On 2 March 1977 it was proclaimed the Socialist People's Libyan Arab Jamahiriya.

17. As regards Tunisia, there is no need for the purposes of this brief historical review to go further back than the establishment of Carthage (now a suburb of Tunis) by the Phoenicians. The Romans, who supplanted the Carthaginians, held sway in Tunisia until ousted by the Vandals who took Carthage in AD 439. The province was recovered by the Romans in AD 533-534 and remained Roman until they were supplanted by Arabs in the middle of the Seventh Century. Latin culture and Christianity were replaced by Islam which was readily accepted by the Tunisian people.

18. During the 16th Century, the Ottomans established control over Tunis and the surrounding areas. Up to 1705, political power was in the hands of a "Dey" elected by the "janissaries" of the Ottoman army. In that year, the ruling "Dey" was killed in battle. Power was assumed by the Beys, whose rule continued until the 20th Century. Although the Beys were beset both by frequent wars with Algiers and by acute financial problems, the power of the Porte virtually became reduced to a claim of suzerainty. During the 19th Century, France came to regard Tunisia as a natural adjunct to Algeria, and during the second half of the Century mounted increasing pressure against the Beys.

19. In 1881, a French force crossed the Algerian frontier, quickly captured the capital, and compelled the Bey to accept the French protectorate. In spite of serious Moslem opposition, especially at Sfax, Tunisia was then brought completely under French control. In 1883, the new situation under the French protectorate was recognized by the British

government. The other powers followed suit, except Italy and the Porte. Italy recognized the full consequences of the French protectorate in 1896.

20. The Treaty of Bardo 1881 (as amplified by the Convention of Al Marsa 1883) provided for the transfer of the foreign relations and military security of Tunisia to France. Otherwise, the Bey was in theory left an absolute ruler, although in fact he was under French control. The position of the French grew stronger, but in 1907 began to meet opposition from the Tunisian people. In 1920, nationalist Tunisians claimed the emancipation of Tunisia as a nation. This was, in effect, the beginning of a long struggle for independence. Eventually, the Tunisian government secured French recognition of Tunisia's independence on 20 March 1956.

21. Tunisia and Libya have historically been both distinct and closely-related. Apart from their geographic links as neighbours, they have Arabic as a common language and the religion and culture of Islam as a common heritage. Both countries, therefore, have strong incentives for cooperation and unified action.

CHAPTER II

SPECIFIC HISTORY OF THE BOUNDARIES

22. The land boundary between Tunisia and Tripolitania was determined by the Convention signed on behalf of the Emperor of the Ottomans and the Bey of Tunis on 19 May 1910 (the "1910 Convention"). A copy of the 1910 Convention is attached as *Annex I-3*[1]. According to a recent study by Professor Ian Brownlie:

> "During the period of Turkish rule in Tripoli, France and Turkey entered into one or more agreements concerned with delimitation. The status of these agreements is obscure and the results were less than definitive[2]."

It is unnecessary at this stage to examine the question of these supposed "agreements". On the other hand, it is important to note that, at least prior to 1887, the Tunisian boundary with the Turkish vilayet of Tripoli started at El Biban and ran inland from a point at the middle of the narrow entrance to the Bahiret El Biban. The location was at 33° 16′ N, 11° 19′ E; *this is nearly 32 kilometres in a westerly direction from Ras Ajdir* (33° 10′ N, 11° 33′ E)[3], the point from which the land boundary started according to Article 1 of the 1910 Convention.

23. Indeed, a review of Libyan/Tunisian land boundaries in modern times demonstrates that the *leitmotif* of that history is a continuing eastward movement of the boundary at the hands of colonial powers.

24. There is in fact evidence that early in the 19th Century the boundary between the vilayet of Tripoli and the territories of Tunis was considered to be even much further to the west. This may have been as far west as the town of Gabes (33° 53′ N, 10° 06′ E)[4]. However, irrespective of the weight of this evidence, it is an indisputable fact that the land boundary reached the sea at El Biban (through Wadi Fessi), and maps prior to 1887 so indicate[5]. *Map No. 2* (facing this page) portrays the land boundary and adjoining coastlines of Libya and Tunisia.

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[1] The land boundary terminating at Ras Ajdir is described and discussed in this Memorial in terms of the 1910 Convention in the context of these proceedings only.

[2] BROWNLIE, Ian: *African Boundaries*. London, C. Hurst & Company, 1979, p. 141. See *Annex I-4*.

[3] Coordinates contained in this Memorial are derived from the following sources: *Mediterranean Pilot:* 10th edition. Taunton, England, Hydrographer of the Navy, 1978, Vol. 1; *Mediterranean Pilot*: 6th edition. Taunton, England, Hydrographer of the Navy, 1976, Vol. 5; and separate Gazetteers for Libya (1973) and Tunisia (1964) published by the Board of Geographic Names, United States Department of the Interior, Washington, D.C. In accordance with Article 50, para. 2 of the Rules of Court, copies of Vols. 1 and 5 of the *Mediterranean Pilot* and of the Gazetteers have been deposited with the Registrar. For the convenience of the Court, a glossary of place names is set forth as *Annex I-28*.

[4] See *Annex I-6*, photographic copy of a map published in London (1814), appearing in *Pinkerton's Modern Atlas*.

[5] MARTEL, André: *Les Confins Saharo-Tripolitains de la Tunisie*. Tome Premier. Paris, Presses Universitaires de Paris, 1965, p. 374 (a copy of this page is attached as *Annex I-5)*; and for example the photographic copies of 1830 and 1867 German maps found in *Annex I-6*.

25. The eastward shift of the boundary point from El Biban to Ras Ajdir was due not to natural features, but rather to external political forces: France desired to protect and expand its interests in Algeria and Tunisia; the power of the Ottoman Empire, still nominal suzerain of Tunisia and sovereign of Tripolitania, was on the wane; and Italy, with reluctant support from the Austro-Hungarian Empire, Germany and Great Britain, had well-known pretensions against Ottoman possessions. In this political atmosphere, France had no difficulty with the initial stages of her intervention in Tunisia which began in 1881. France rapidly occupied Tunis and the northern parts of the country and later extended her grip to the south. Penetration to the south and east against Libyan territory followed, the target of France being, not the adjacent maritime areas, but the acquisition of territories, wells and caravan routes and military roads inland. It was only in 1887 and afterwards that France succeeded in establishing *de facto* military control over the whole of the Bahiret El Biban. Ottoman representations were ineffective to stop French penetration, and large numbers of Tunisians crossed the traditional border and settled in Tripolitanian territory to the east. During the next two or three decades France was able to consolidate her position, the Ottoman Empire being in a state of final decline, Italy being too weak to intervene and other European powers adopting an attitude of indifference.

26. Thus, France succeeded in obtaining legal confirmation of its *de facto* position through the 1910 Convention between the Sultan and the Bey of Tunis[1]. As appears from the preamble of the 1910 Convention, the principal negotiators on the Tunisian side were French. There were no Libyans in the Ottoman delegation. In 1910-1911, the Tunisia/Tripolitania boundary was demarcated in accordance with the 1910 Convention (see paragraphs 27 and 28 below and the map accompanying the 1910 Convention, attached to this Memorial as *Annex I-7*[2]). On 29 September 1911, Italy declared war on the Ottoman Empire. Having protected her interests by the 1910 Convention, France adopted a "wholly cordial" attitude towards Italy. French support was too important for Italy to try to reopen the territorial settlement secured by France. Italy quickly defeated the Ottomans and established sovereignty over Tripolitania. Italian sovereignty over the three provinces of Libya continued until it was renounced following World War II (see paragraph 16 above).

27. The express purpose of the 1910 Convention was, according to its preamble, to delimit the boundaries of Tunisia and Tripolitania between the Mediterranean and the region ("le territoire dépendant") of the town of Ghadames. The delimitation was confined to the land boundary starting at Ras Ajdir on the coast and running in a roughly southerly direction, as is plain from the provisions of Articles 1 and 2. The 1910 Convention makes no mention of any pre-existing agreement. On the other hand, it does contain internal evidence of the motives which inspired it and the

[1] A copy of the text of the 1910 Convention is attached as *Annex I-3*.

[2] Not reproduced. See the portion of this map facing page 14. *[Note by the Registry.]*

circumstances in which it was made. As indicated above, the French target appears to have been to secure water resources and military routes inland in order to link its northern colonial possessions with its colonial possessions to the south. The importance of wells and water appears from paragraph 2 of Article 2, and Articles 1 and 2 contain internal evidence of the significance attached to communications, especially military roads[1].

28. The sub-commission for the demarcation of the boundary, established in accordance with Article 3 of the 1910 Convention, carried out its task between November 1910 and February 1911. Its report was signed on 1 March 1911. For the purposes of demarcation, the sub-commission used pillars (erected where necessary) and certain natural features. The first mark was pillar 31 on the Mediterranean coast at Ras Ajdir. From there the boundary ran more or less south to the most southerly mark, pillar 233 at Garet Hamel. (The last part of the boundary, between pillars 220 and 221, in fact now forms the beginning of the boundary between Libya and Algeria.) The resulting land boundary between Libya and Tunisia was approximately 460 kilometres long.

29. Since the 1910 Convention contained no provisions for the delimitation of the territorial sea, the sub-commission of course placed no marks beyond pillar 31 on the coast. The 1910 Convention is not explicit with respect to a maritime boundary. However, it does indicate in Article 1 that:

> "The boundary between the Regency of Tunis and the Vilayet of Tripoli shall start at Ras Ajdir, on the Mediterranean, *in a generally north-south direction*[2]."

In light of the boundary direction established by Article 1 of the 1910 Convention, it may be assumed, absent an agreement to the contrary, that the boundary on the seaward side of Ras Ajdir would continue, or could be expected to continue, in the same, that is a northerly, direction. There are no natural features to lead to any different conclusion, and it would also accord with the configuration of the coastline at that point.

A portion of the map attached to the 1910 Convention (a copy of which is attached as *Annex I-7*) is reproduced opposite this page.

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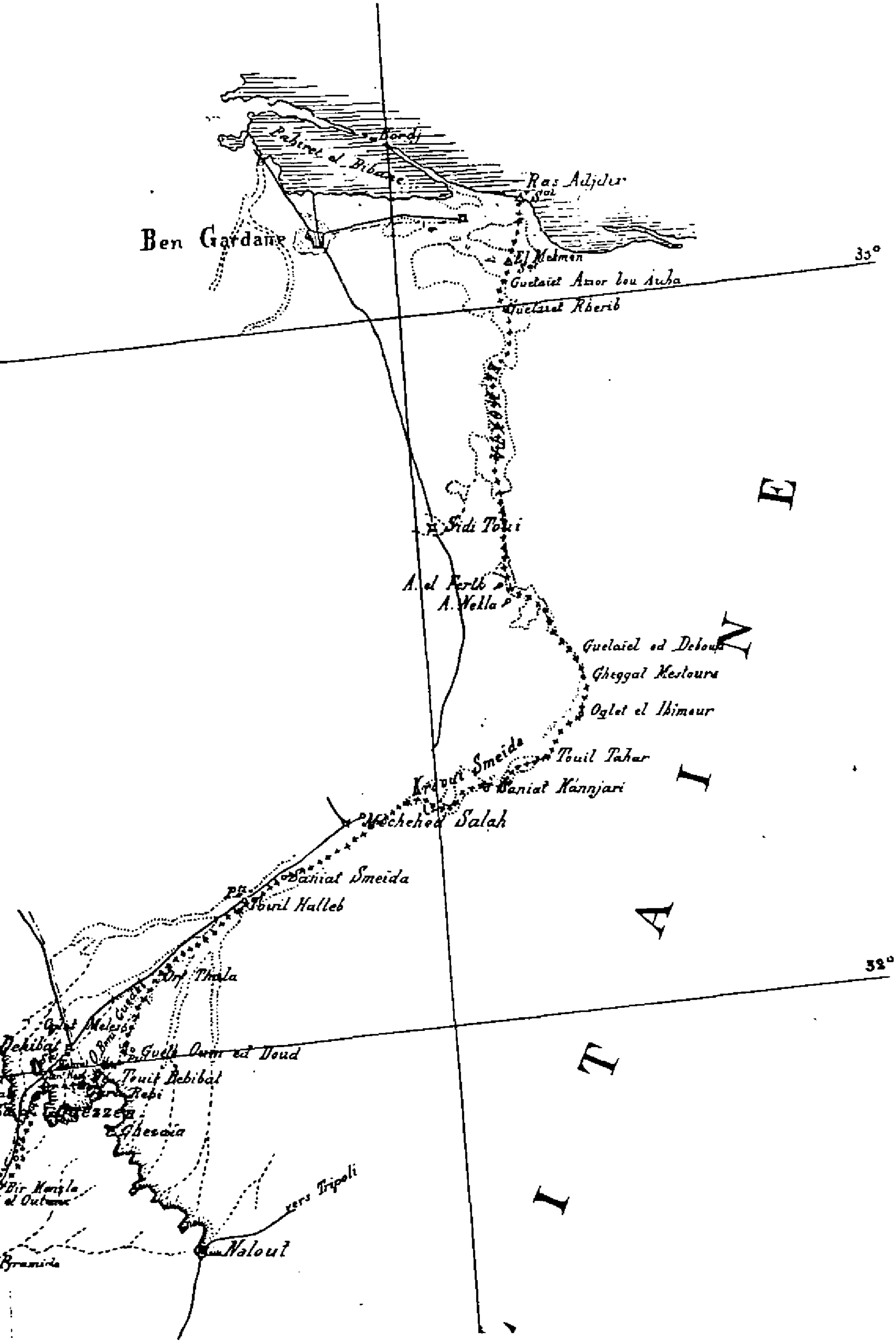
[1] See *Annex I-3*.

[2] Translation as included in *International Boundary Study: Libya - Tunisia Boundary*, Washington, D.C., Office of The Geographer, United States Department of State, No. 121, 7 Apr. 1972, pp. 1 and 2. Copies of the relevant pages are attached as *Annex I-8*. In accordance with Art. 50, para. 2 of the Rules of Court, a copy of the whole of this document has been deposited with the Registrar.



Ben Gardane
Bordj
Ras Adjder
El Mekmen
Gueläiet Rherib
Sidi Toui
A. Wella
Gheggal Mestoura
Touil Tahar
Mechehed Salah
Saniat Smeïda
Touil Halleb
Guelt Oum ed Doud
Touil Dehibat
Dehibat
Nalout
vers Tripoli
33°
32°

CHAPTER III

GENERAL HISTORY OF DISCUSSIONS BETWEEN THE PARTIES

30. Having regard to the nature of the request made to the Court in this Case, it would not, in the view of Libya, be of much assistance to the Court to examine in any detail the history of "negotiations" between the Parties. As the history shows, there was virtually no discussion of the question of delimitation. Libya was generally seeking a formula for joint exploitation, while Tunisia apparently was concerned mainly with establishing and extending its claims to areas of the continental shelf. In such circumstances, there was no prospect of fruitful or "meaningful" negotiations. Nevertheless, it may be of assistance to the Court to call attention to some of the highlights of the discussions.

31. On 21 April 1955, Libya issued Petroleum Law No. 25 of 1955 (the "Petroleum Law") which was published in Gazette No. 4 on 19 June 1955 and became effective on 19 July of that year. In accordance with Article 24 of the Petroleum Law, Petroleum Regulation No. 1 thereunder (the "Petroleum Regulation") was promulgated on 16 June 1955 and published, together with an official map of Libya entitled "Map No. 1[1]", in Gazette No. 7 on 30 August 1955. It came into force on the same day as the Petroleum Law[2].

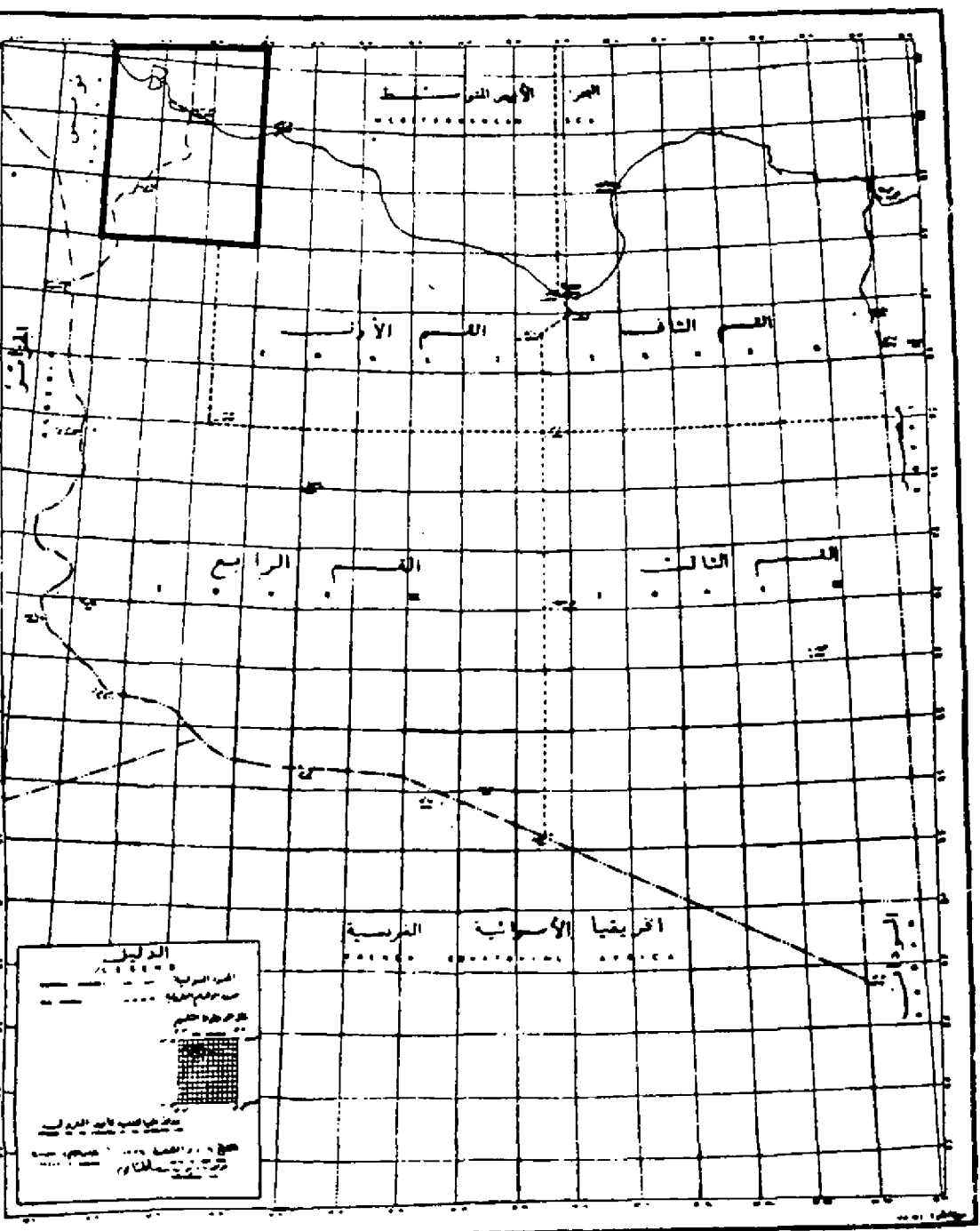
32. The Petroleum Law and the Petroleum Regulation provide the basis for the exploration and exploitation of all petroleum in Libya both on land and offshore. By Article 1 of the Petroleum Law, all petroleum in Libya in its natural state in strata is the property of the Libyan State and no person shall explore or prospect for, mine or produce petroleum in any part of Libya unless authorized by a permit or concession issued under the Petroleum Law. For this purpose, Article 3 divides Libyan territory into four Petroleum Zones. The first of these Zones includes the regions of Tripoli, the Western Mountains, Zawia, Al Khums and Misurata; the other three Zones are of no particular concern for the purposes of this case.

33. Paragraph (1) of Article 4 of the Petroleum Law is of importance. It provides as follows:

> "This Law shall extend to the seabed and subsoil which lie beneath the territorial waters and the high seas contiguous thereto under the

[1] References to "Map No. 1" should not be confused with *Map No. 1* facing p. 8 above.

[2] Both the Petroleum Law and the Petroleum Regulation have now been amended but it is not considered that any of the amendments are relevant to the present case. Copies of Arts. 1 through 9(8) inclusive, 10, 19, 23 and 24 of the Petroleum Law and Arts. 1 through 6 of the Petroleum Regulation (together with a reduced copy of "Map No. 1") are attached as *Annexes I-9A* and *I-9C* respectively. The copies are presented in the original Arabic, as enacted and published in 1955. The official English translations of the Petroleum Law and Petroleum Regulation are attached as *Annexes I-9B* and *I-9D*. In accordance with Art. 50, para. 2 of the Rules of Court, a copy of the whole of each document has been deposited with the Registrar.


البحر الأبيض المتوسط
القسم الثاني
القسم الأول
القسم الثالث
القسم الرابع
افريقيا الأسبانية الفرنسية
الدليل

control and jurisdiction of Libya[1]. Any such seabed and subsoil adjacent to any Zone shall for the purposes of this Law be deemed to be part of that Zone."

34. "Map No. 1", attached to the Petroleum Regulation, (see *Annex I-9B* and paragraph 31 above) indicates *inter alia* the international frontiers and the "Petroleum Zones". Article 2 of the Petroleum Regulation defines the four Petroleum Zones for the purposes of the Petroleum Law. The First Zone is defined as follows:

> "*The First Zone* - consists of the Province of Tripolitania bounded on the north by the limits of territorial waters and high seas contiguous thereto under the control and jurisdiction of Libya, and on the east by 18° 50′ longitude until it intersects the coast line, thence in a straight line in a southeasterly direction to the point where 30° latitude intersects 19° 5′ longitude, thence in a straight line running in a southwesterly direction to the point where 18° 30′ longitude intersects 29° 40′ latitude, thence directly south along 18° 30′ longitude to the intersection with 28° latitude, thence in a westerly direction along the 28° latitude to the intersection with 12° 15′ longitude, thence directly north along 12° 15′ longitude to the intersection with 31° latitude, *thence directly west along 31° latitude, to the border of Tunisia, thence in a general northerly direction along the international boundary*[2]."

35. "Map No. 1" shows a large area of "territorial waters and high seas contiguous thereto" as included in the First Zone, but leaves the northern boundary unmarked. It does, however, show the western boundary of the maritime area as running north from the termination on the coast of the land boundary with Tunisia at Ras Ajdir. To illustrate the foregoing, a reduction of "Map No. 1" has been placed on the previous page [3].

36. It was entirely within the competence of the Libyan authorities, by virtue of the Petroleum Law and the Petroleum Regulation, to grant concessions to explore for and exploit petroleum resources within the area defined in Article 2 of the Petroleum Regulation and shown by "Map No. 1". However, the Libyan authorities had not granted an offshore concession prior to the time Tunisia granted, late in 1967, a concession to a French company, SNAP-Aquitaine, within an area to the west of a stepped (or zigzag) line which ran in a direction north/northeast at about 26 degrees from Ras Ajdir. Subsequently, on 30 April 1968, acting upon an application by Aquitaine, the Libyan authorities granted Concession No. 137 to that company (together with another company known as "Exwarb") within the First Petroleum Zone . The area covered by this Concession was 6,846 square kilometres, lying to the eastward of a line

[1] See fn. at p. 1 above.
[2] See *Annex I-9D*, Art. 2 of the Petroleum Regulation (Italics added).
[3] For the convenience of the Court, the western boundary of the maritime area is outlined by a bold line on this map.

running south/southwest from the point 33° 55′ N, 12° E to a point about one nautical mile offshore. The point of origin viewed from Ras Ajdir is at an angle of 26 degrees. (The area of each concession is shown by *Map No. 3* facing page 18 below; the eastern limits of the Tunisian concession by SNAP-Aquitaine are shown by the stepped line on the same map.)

37. Shortly after the Libyan concession was granted, Tunisia suggested a meeting with representatives of Libya to discuss the respective "maritime boundaries" of the two countries. Such meetings were held from 17 to 21 July 1968 but involved only an exchange of views. Relations between Tunisia and Libya were good and the meetings took place in an atmosphere of cordiality. The Tunisian delegation expressed the view that agreement should be reached with Libya defining a point at sea outside the territorial waters of the two States, and lying on a line extending from Ras Ajdir[1], as the beginning of the maritime frontier between Libya and Tunisia. Unprepared to consider discussing any line demarcating their territorial waters, the Tunisian delegation took the position that historical fishery rights coupled with the coastal configuration established a line extending at an angle of 45 degrees to the 50 metre isobath[2]. The Libyan delegation stated that the point indicated by pillar 31 was the beginning of the maritime frontier between Libya and Tunisia, and that the line extending northwards from Ras Ajdir was the maritime frontier demarcating the offshore areas appertaining to the two States in question[3].

38. During 1970, representatives of Libya and Tunisia held discussions concerning the question of the continental shelf. Those discussions produced no progress. In December 1972, the question was raised to a higher level and was discussed between political leaders of the two countries in the context of closer economic and political cooperation between them. This resulted in agreement between them as to joint exploitation of the continental shelf, and the outcome of their discussions was the formation of a Supreme Committee chaired by the two Prime Ministers. The mandate of the Supreme Committee was to follow up the work of specialized technical committees. Among these was a Continental Shelf Committee, which met from 29 January to 1 February 1973 and considered that an appropriate formula should be found for the achievement of all phases of joint exploitation of the maritime areas of the two countries.

39. When the Continental Shelf Committee meetings were resumed in March 1973, fundamental differences of approach emerged. The Libyan members proposed the establishment of a joint Libyan/Tunisian authority for the utilization and exploitation of the continental shelf of the two States, without specific limitation of the area. This proposal was not

[1] The land boundary in accordance with the 1910 Convention. See paras. 22 through 29 above.

[2] See Art. 3 of the 1963 Tunisian Law set forth at para. 51 below.

[3] There is no agreed record of this meeting, or in general of the meetings between the two Parties.

acceptable to the Tunisian members, who proposed joint exploitation of a specified area. It was nevertheless agreed that the Committee should reconvene.

40. During 1974 and 1975, however, relations between Libya and Tunisia in this field began to deteriorate. When the Continental Shelf Committee resumed its meetings in August 1975, the Libyan members continued to favour discussion of draft agreements concerning joint exploitation, but the Tunisian members were intent on securing delimitation. At further meetings of the Committee in March 1976, the objective of joint exploitation became unattainable because the Tunisian members not only insisted that the maritime areas belonging to each State should be delimited, but also persisted in an attempt to prove the existence of an agreed state of "dispute" between them.

41. In the first half of 1976 there were incidents accompanied by protests and counter-protests. It was in these circumstances that, on 18 May 1976, Tunisia circulated a memorandum to diplomatic missions accredited to Tunisia other than the Libyan Mission in Tunis. The text of the memorandum is attached as *Annex I-10*. It may, however, be helpful to set out in full below the Tunisian position with respect to the "problem with Libya over the Continental Shelf", as stated in the 18 May memorandum:

> "1. A delimitation of sea boundaries between Tunisia and Libya, from the shore to the 50 metre isobath, has been established since the early times.
>
> 2. That delimitation comprises a 43° 21'[1] line running in a north-east direction from Ras Ajdir to the point of intersection with the 50 metre isobath.
>
> 3. This delimitation, established a long time ago, has been recognized, approved and applied in a peaceful, continuous and unambiguous manner by Tunisia, Libya, France, Italy, Great Britain, Turkey, Greece, the Austro-Hungarian Empire and Holland.
>
> 4. Upon their independence, both Tunisia and Libya inherited the delimitation described in paragraph 2 above.
>
> 5. On this basis, and according to the preamble and Chapter III of the Charter of the Organisation of African Unity which stipulate that African States should recognize the borders resulting from their independence, and the stability of such borders, the sea boundaries' delimitation referred to in paragraph 2 is unalterable.

[1] This figure appears on a copy of the memorandum received by Libya. However, since Tunisia did not furnish this memorandum to the Libyan Mission, the correctness of this figure remains to be verified. See also the reference to 45 degrees in para. 37 above and the text of Art. 3 of the 1963 Tunisian Law set forth in para. 51 below.

6. On the other hand, international practices and jurisprudence are unanimous on that the new State which replaces the colonial power (as is the case with both Tunisia and Libya) is bound, and shall continue to be bound, by any agreements fixing boundaries which may have been concluded by the colonial power.

7. Among the basic principles of law also is the one that states that a change of government does not deprive the state of any of its rights nor rid it of any of its commitments.

8. Therefore, the Tunisian-Libyan sea border described in paragraph 2 above is confirmed, established and unambiguous.

9. Proceeding from this, there remains the fixing of the sea boundaries beyond the 50 metre isobath.

10. This delimitation of the continental shelf beyond the 50 metre isobath should be effected by agreement between the two countries in accordance with international law and custom.

11. Accordingly, this delimitation should be based on international law and custom and the internationally recognized geographic and economic facts.

12. The 1958 Geneva Convention on the Continental Shelf, Article 6, stipulates that 'where the same continental shelf is adjacent to the territories of two adjacent states, the boundary of the continental shelf shall be determined by agreement between them. In the absence of agreement, and unless another boundary line is justified by special circumstances, the boundary shall be determined by application of the principle of equidistance from the nearest points of the baselines from which the breadth of the territorial sea of each state is measured.'

13. An examination of maps reveals that the general configuration of the Tunisian and Libyan coastlines is simple and does not create any difficulty in respect of the application of the standards and rules of international law and custom. Thus the delimitation of the continental shelf between Tunisia and Libya beyond the 50 metre isobath should be in conformity with an equidistance line drawn in accordance with international law, taking into account the geographical facts and the zones of economic interests, the long-standing exercise of which stands proof of their reality and importance.

14. Libya, on the contrary, did not agree to adhere to the framework of international law and custom, as proposed by Tunisia. It insisted that the delimitation of the continental shelf coincided with the limits of concession areas it granted to the petroleum companies.

15. However, the limits defined by the licences granted to the petroleum companies for mining exploration and exploitation cannot, under any circumstances, replace the delimitation of the continental shelf, which can only be effected by agreement between the two states concerned in accordance with international law.

16. In addition, international custom stipulates that, in granting licences inside areas not yet delimited between adjacent states, the limits of such licences be that agreed upon by the states concerned.

17. In view of this position by Libya, all hopes for arriving at a solution to this dispute through negotiations on the basis of international law and custom, have been shattered. For this reason Tunisia - having regard to good neighbourly relations - proposed to Libya that they resort to arbitration.

18. Thus Tunisia stands prepared to accept the resolution of the problem at the hands of an arbitrator between the two parties."

42. So far as the memorandum of 18 May 1976 expresses the view of Tunisia, Libya can only consider it as an official statement of the position of Tunisia. So far as the memorandum refers to the views of Libya, it is not accepted as an accurate reflection of such views. In addition, as noted above, paragraph 18 of the memorandum states that Tunisia was prepared to accept the resolution of the problem at the hands of an arbitrator between the Parties. The memorandum thus made it abundantly clear that there was no prospect of a solution being found by negotiation between the Parties, and that resort to arbitration appeared to be the only way of finding a peaceful solution[1].

43. In these circumstances attempts to find a formula for joint exploitation became abortive and Libya saw no alternative to recognizing the existence of a disagreement or dispute. Therefore, on 24 August 1976, after preparatory consultations, a joint communiqué expressing a decision to have recourse to the Court and to continue consultations to find an interim formula for joint exploitation was issued in Tunis in the following terms:

> "In seeking to strengthen the ties of good neighbourhood and close cooperation between the two fraternal countries, the Tunisian and Libyan Governments have decided to submit the issue of the delimitation of the continental shelf between Tunisia and the Libyan Arab Republic to the International Court of Justice and appeal to it in this case.

[1] This attitude is to be contrasted with that which was expressed by the joint communiqué of 24 Aug. 1976 (see para. 43 below) as well as by the Special Agreement.

Meanwhile, consultations continue between both parties to find an interim formula for the joint exploitation of the area of the continental shelf to be delimited within the lines of a framework agreed to by both countries, with a commitment to implement the decision of the International Court in the The Hague when handed down[1]."

44. Several meetings were then held for the purpose of giving effect to the provisions of the joint communiqué. The first series of meetings was held in Tripoli in September 1976 and the second series was held in Tunis in October 1976. At these meetings, draft proposals for a Special Agreement were submitted by the experts of both Tunisia and Libya. Comments on them were exchanged, but the experts did not succeed in preparing an agreed draft.

45. Colonel Muammar Ghadaffi, the leader of the First of September Revolution, in a public statement made on behalf of Libya on 2 June 1977, confirmed the willingness of his country to submit the question of delimitation of the continental shelf to arbitration or to the Court so as to clear away difficulties between brotherly countries. At this stage, the Secretary-General of the League of Arab States proposed meetings in his presence in Cairo at which the two Parties would resume negotiations. Libya suggested that the meetings be held in Tunis, and they were held there from 7 to 11 June 1977. The delegations of Tunisia and Libya were led by their respective Foreign Ministers and all the talks took place in the presence of the Secretary-General of the League of Arab States. In a final meeting, a Special Agreement was reached providing for resort to the International Court of Justice. The text of the Special Agreement was drawn up in the Arabic language and signed on 10 June 1977 (see *Annex I-1*).

46. As a result of the agreement reached by the two Parties during the talks of 7-10 June 1977, as referred to in a message from the Tunisian Foreign Minister signed on 10 June 1977, and confirmed in a message of 20 December 1977 from the Secretary of Foreign Affairs of Libya to the Tunisian Foreign Minister[2], it was agreed that the words, *duroof khassa*, in Article 1 in the original Arabic text should be translated into English as "relevant circumstances". Apart from this, the Parties were unable to agree upon the translation of the Arabic text into either English or French, although Libya stated in a *Note Verbale* dated 20 December 1977 (copy attached as *Annex I-13*) that it was willing to try to reach agreement on a translation.

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[1] A copy of the joint communiqué is attached as *Annex I-11*.

[2] Copies of the 10 June 1977 and 20 Dec. 1977 messages are attached as *Annex I-12*.

CHAPTER IV

QUESTION OF MARITIME LIMITS

47. Libya considers that some importance attaches to the question of delimitation of the territorial seas between Libya and Tunisia. If two adjoining States have a territorial sea of the same breadth which has previously been delimited by agreement, the normal starting point for the delimitation of the continental shelf would be the point where the boundary between their territorial waters reaches the outer limit of the territorial sea. However, as far as Libya is aware, there has never been an explicit agreement on delimitation of the territorial sea between Libya (or Tripolitania) and Tunisia, although it is clear that the territorial sea boundary could well start from pillar 31 at Ras Ajdir.

48. Article 2 of the Petroleum Regulation specified Libyan jurisdiction as being bounded by a line—

> " ... directly west along 31° latitude [well south of the coastline], to the border of Tunisia, thence in a general northerly direction along the international boundary."

Nevertheless, Libya has made no unilateral delimitation of the territorial sea boundary as such with Tunisia[1]. However, the breadth of the Libyan territorial sea was extended to twelve miles by Law No. 2 of 18 February 1959, which came into force on 31 March 1959[2]. The operative part of this Law is contained in Article 1 which simply states: "The Libyan territorial waters shall be fixed at twelve nautical miles."

49. The traditional breadth of the Tunisian territorial sea has been three miles, measured from the low-water mark along the coast. However, Libya is aware that in the past there have been specialized types of fixed fisheries (characterized by the use of nets fixed to the seabed) off the coast of Tunisia. These have existed for example, on the banks of the Kerkennah Islands. Libya is also aware of special fishing regulations issued during the French protectorate (for instance in 1892 and 1906) concerning sponge and octopus fishing. In this context, it is important to note that these regulations were applied to foreign as well as to Tunisian boats. Thus, it appears that the special fishing zone off the coasts of Tunisia was not a part of the territorial sea and that the fishing rights were not reserved to Tunisian citizens.

50. The first actual Tunisian law concerning the territorial sea of which Libya is aware was Law No. 62-35 of 16 October 1962 (copy attached as *Annex I-15*). That Law attempted to deal with both maritime fishing and the extent of Tunisian territorial waters. Although it seemed to be aimed at the establishment of a six-mile territorial sea and a twelve-mile fishery zone, the effect of that Law was not completely clear.

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[1] The Petroleum Law and Regulation (never protested by Tunisia) are quoted and discussed above in paras. 31 through 36.

[2] A copy of this Law is attached as *Annex I-14*.

No doubt, the Law was inspired by the "six-plus-six" proposal[1] which had failed of adoption (by the narrowest possible margin) at the Second United Nations Conference on the Law of the Sea held at Geneva in 1960.

51. The Tunisian position was somewhat clarified by Tunisian Law No. 63-49 of 30 December 1963 (the "1963 Tunisian Law")[2], which was no doubt also drafted with the provisions of the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone (the "1958 Convention") freshly in mind, as well as the proceedings of the Second United Nations Conference on the Law of the Sea. Article 3 of the 1963 Tunisian Law, replacing previous enactments, reads as follows:

> "(3) Est dénommée mer territoriale tunisienne: de la frontière tuniso-algérienne à la frontière tuniso-libyenne et autour des îles adjacentes, la partie de la mer comprise entre la laisse de basse mer et une ligne parallèle tracée à six milles au large, à l'exception du Golfe de Tunis qui, à l'intérieur de la ligne Cap-Farina, Ile Plane, Ile Zembra et Cap-Bon, est entièrement compris dans ladite mer.
>
> 'Une zone contiguë' à la mer territoriale tunisienne telle qu'elle est définie ci-dessus est réservée, dans laquelle seuls les navires battant pavillon tunisien pourront être autorisés à pratiquer la pêche.
>
> Cette zone est définie:
>
> *a)* de la frontière tuniso-algérienne à Ras Kapoudia par la partie de la mer comprise entre la ligne des six milles et celle des douze milles marins mesurés à partir de la laisse de basse mer;
>
> *b)* de Ras-Kapoudia à la frontière tuniso-libyenne: par la partie de la mer limitée par une ligne qui, partant du point d'aboutissement de la ligne des douze milles marins mentionnée au paragraphe *a)* ci-dessus rejoint, sur le parallèle de Ras Kapoudia, l'isobathe de cinquante mètres et suit cet isobathe jusqu'à son point de rencontre avec une ligne partant de Ras Aghadir [Ajdir] en direction du Nord-Est ZV = 45°."

52. The apparent intent of the 1963 Tunisian Law is relatively clear. It was intended to extend the breadth of the territorial sea of Tunisia to six miles from the low-water mark along the coast from the Algerian to the Libyan frontier and around the adjacent islands. An exception was made for the closure of the Gulf of Tunis, but *not for the "Gulf of Gabes*[3]".

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[1] This was a compromise proposal on the permissible breadth of the territorial sea which would have allowed States to have a six-mile territorial sea plus a six-mile contiguous fishery zone.

[2] A copy of this Law is attached as *Annex I-16*.

[3] Correct usage of the term "Gulf of Gabes" is defined in para. 78 below. In the context of Tunisian claims and in the works of certain authors mentioned in this Memorial, the term is inaccurately used and, therefore, will be enclosed in quotation marks in such cases.

53. The second paragraph of Article 3 purported to create a zone contiguous to the territorial sea in which fishing was reserved to boats flying the Tunisian flag. The validity in international law of this type of attempt to create a contiguous exclusive fishery zone was questionable, and was not admitted by Libya. Nevertheless, the wording of Article 3 makes it quite clear that the references in its sub-paragraph (b) to the 50 metre isobath and to the line running northeast from Ras Ajdir were only concerned with the definition of an asserted *exclusive fishery zone* contiguous to the territorial sea:

> " 'Une zone contiguë' à la mer territoriale tunisienne ... dans laquelle seuls les navires battant pavillon tunisien pourront être autorisés à pratiquer la pêche."

Article 3 of the 1963 Tunisian Law did not attempt any unilateral delimitation of the territorial sea.

54. In 1973, five years after it had originally raised the issue of the delimitation of the continental shelf, Tunisia suddenly adopted an entirely different approach. This time Tunisia was not content with extending the breadth of the territorial sea and claiming exclusive fishery zones; its obvious aim was to extend its territorial waters by the device of attempting to establish previously unimagined and unmentioned *baselines* which were not only extraordinarily generous to Tunisia, but also were not in conformity with international law. This plan was implemented by Tunisian Law No. 73-49 of 2 August 1973 (the "1973 Tunisian Law") concerning delimitation of territorial waters ("portant délimitation des eaux territoriales") and Decree No. 73-527 of 3 November 1973 (the "1973 Tunisian Decree") relating to baselines ("relatif aux lignes de base"), giving effect to Article 1 of the Law. (Copies of the 1973 Tunisian Law and Decree are attached as *Annex I-17*; the baselines so promulgated are portrayed by (42) *Map No. 4* facing this page[1].)

55. Articles 1 and 4 of the 1973 Tunisian Law read as follows:

> "Article Premier - La mer territoriale tunisienne est constituée, de la frontière tuniso-algérienne à la frontière tuniso-libyenne et autour des îles, des hauts-fonds de Chebba et des îles Kerkennah où sont installées des pêcheries fixes et des hauts-fonds découvrants d'El Bibane, par la partie de la mer qui s'étend jusqu'à une limite fixée à douze milles marins à partir des lignes de base.
>
> Les lignes de base sont constituées par la laisse de basse mer ainsi que par les lignes de base droites tirées vers les hauts-fonds de Chebba et des îles Kerkennah où sont installées des pêcheries fixes, et par les lignes de fermeture des Golfes de Tunis et de Gabès.

(42) [1] It is significant to observe that, as reflected by *Map No. 4*, the straight baselines imposed by the 1973 Tunisian Law and Decree extend only to Ras Kaboudia, and that north from Ras Kaboudia to Cape Bon the baselines follow the natural Tunisian coastline. Similarly, between the Island of Djerba and Ras Ajdir the coastline is followed.

Ces lignes de base seront précisées par décret.

Art. 4 - La souveraineté de l'Etat Tunisien s'étend à l'espace aérien, ainsi qu'au lit et au sous-sol de la mer dans la limite de la mer territoriale."

Article 1 of the 1973 Tunisian Decree reads as follows:

"Article Premier – Les lignes de base, à partir desquelles est mesurée la largeur de la mer territoriale tunisienne, sont constituées de la frontière Tuniso-Algérienne à la frontière Tuniso-Libyenne et autour des îles, des hauts-fonds de Chebba et des îles Kerkennah où sont installées des pêcheries fixes et des hauts-fonds découvrants d'El Bibane, par la laisse de basse mer ainsi que par les lignes de base droites tirées vers les hauts-fonds et par les lignes droites de fermeture des golfes de Tunis et de Gabès.

Ces lignes de base sont définies par:

1°)—La laisse de basse mer, de la frontière Tuniso-Algérienne au Cap Sidi Ali El Mekki;

2°)—La laisse de basse mer des écueils des Sorelles, du Galiton de la Galite, des Galitons de l'Est, des îles Fratelli, Cani et Pilau;

3°)—La ligne de fermeture du Golfe de Tunis constituée par les lignes de base droites joignant le Cap Sidi Ali Mekki, l'île Plane, la pointe Nord de l'île Zembra et le Cap-Bon;

4°)—La laisse de basse mer, du Cap-Bon à Ras Kapudia;

5°)—La laisse de basse mer des îles Kuriates;

6°)—Les lignes de base droites enveloppant les pêcheries fixes de Chebba et des îles Kerkennah et définies par Ras Kapudia et par les balises suivantes[1]:

a)—Chebba N° 1	35°08′40″	11°12′43″
b)—Maruka	35°01′20″	11°29′11″
c)—El Barani	34°55′21″	11°33′09″
d)—El Mzebla	34°51′27″	11°38′14″
e)—Sakib Hamida N° 1	34°45′17″	11°33′58″
f)—Sakib Hamida N° 2	34°43′48″	11°33′23″
g)—Oued Bou Zrara N° 1	34°42′36″	11°29′03″
h)—Oued Bou Zrara N° 2	34°41′22″	11°26′42″
i)—Oued Mimoun N° 4	34°40′25″	11°19′40″
j)—Oued Saadoun	34°39′10″	11°14′14″
k)—Samoum	34°34′54″	11°03′38″

[1] There are discrepancies between certain of the coordinates set forth below in the official translation into French and the original Arabic text.

7°)—La ligne droite de fermeture du Golfe de Gabès joignant la balise Samoum définie ci-dessus et Ras Turgueness;

8°)—La laisse de basse mer, de Ras Turgueness à la pointe de Sidi Garus;

9°)—La ligne de base droite joignant la pointe de Sidi Garus à Ras Marmor;

10°)—La laisse de basse mer, de Ras Marmor à la frontière Tuniso-Libyienne;

11°)—La laisse de basse mer, des hauts fonds découvrants d'El Bibane."

56. Libya does not admit the validity of these baselines in international law and also denies that they are opposable to Libya in the context of the present case. Further comment on the baselines will be given in paragraphs 128 through 142 below.

57. Neither the 1973 Tunisian Law nor Decree purports to determine the territorial sea boundary between Libya and Tunisia. Indeed, the maritime limits between Libya and Tunisia have never been agreed[1]. Nonetheless, in light of the boundary direction established by the 1910 Convention, it may be assumed that the maritime boundary between Libya and Tunisia would continue seaward from Ras Ajdir in a northerly direction[2]. Part III of this Memorial will demonstrate that such a boundary is entirely consistent with the appropriate and equitable delimitation of the continental shelf, reflecting the natural prolongation northward of the land territories of the Parties as determined by the relevant geological and geographical evidence and in accordance with State practice.

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[1] See para. 47 above.
[2] See para. 29 above.

CHAPTER V

PHYSICAL CIRCUMSTANCES CHARACTERIZING THE AREA

Introduction

58. As stated in the *North Sea Continental Shelf Cases*:

> "The institution of the continental shelf has arisen out of the recognition of a physical fact ... [t]he continental shelf is, by definition, an area physically extending the territory of most coastal States into a species of platform ...[1]".

This "idea of extension", which the Court considered to be "determinant", was described in the Judgment as—

> "... the natural prolongation or continuation of the land territory or domain, or land sovereignty of the coastal State, into and under the high seas, via the bed of its territorial sea which is under the full sovereignty of that State[2]."

59. In view of this language, it is apparent that the physical facts—geology and geography—are of paramount importance in any delimitation of the continental shelf. These facts are therefore considered in detail in this Chapter of the Memorial.

SECTION 1. Geological and Related Features

60. Libya is filing as *Annex II* to this Memorial a geological Study of the area of the continental shelf to be delimited. The technical findings of this Study are summarized briefly below. They support the conclusion that this area of the continental shelf is the natural prolongation northward of the North African landmass to the south.

A. GEOLOGY

61. The continental shelf area to be delimited by the Parties belongs to the Pelagian Basin region of the Mediterranean Sea. Plate 5 of *Annex II* indicates the clearly defined boundaries of the Pelagian Basin, which constitutes a distinct geological unit. The Pelagian Basin, like the Mediterranean Sea of which it is a part, lies between two entirely different structural realms: to the north, the mobile Alpine belt; to the south, the stable African platform. The Pelagian Basin is part of the African platform.

62. The boundaries of the Pelagian Basin are important to note, again with reference to Plate 5 of *Annex II*. The Basin lies generally between 32° N and 36° N and 10° E and 15° 30′ E. Its northern boundary runs along the Pantelleria Trough. On the south, it is bounded by the Gafsa-Jeffara fault, which is a part of a rift valley running from the edge of the Gulf of Sirt in Libya to the longitude of Gafsa in Tunisia. Thus, the Jeffara Plain, which is the northern coastal plain of Libya and which also

[1] *I.C.J. Reports 1969*, p. 51, para. 95.
[2] *Ibid.*, p. 31, para. 43.

runs into southeastern Tunisia, is included within the Pelagian Basin. To the east, the Pelagian Basin is cut off by a north/south fault zone at the eastern edge of the Medina Bank, known as the Misratah-Malta Escarpment. To the west, the Pelagian Basin terminates at the very pronounced north/south fault zone extending from Gabes in the south to Tunis in the north, thus encompassing as part of the Pelagian Basin the eastern part of Tunisia. This western boundary is particularly significant since it marks the division, noted above, between the stable African platform and the Atlas Mountain region, which is part of the mobile Alpine region, a quite different region geologically from the geological unit comprising the Pelagian Basin.

63. The Study (*Annex II*) sets forth in some detail the tectonic[1] characteristics of the Pelagian Basin. They are of prime geological significance since they relate to the basic structure of the area. The geomorphological and bathymetric characteristics of the Pelagian Basin result from the tectonic events that have occurred there. Within the Pelagian Basin, the main tectonic trend is the Sirt Basin rift system which runs northwest from the Sirt Basin into the Gabes-Sabratha Basin. A second tectonic trend running west-northwest/east-southeast, and identical to the trend of the Jeffara Plain in northwest Libya, appears to be related to the first and main tectonic trend from the Sirt Basin (a smaller basin within the larger Pelagian Basin). These tectonic trends are clearly portrayed in Figure 12 and Plate 5, *Annex II*.

64. Thus, the entire landmass of Tunisia west of the Pelagian Basin is, in tectonic terms, part of a totally different geological domain from the continental shelf off the Tunisian and Libyan coasts. This continental shelf is part of a large rift system, the Sirt Basin rift system, which runs from Libya into the Pelagian Basin. Moreover, it must be emphasized that this rift system is not an incidental feature; it is the dominant tectonic feature (comparable to the Red Sea and the East African rift system, further east) and it is this feature which illustrates beyond doubt the fundamental continuity between the shelf area in the Gabes-Sabratha Basin and the main Libyan landmass to the southeast.

65. In addition, there is clear evidence that the North African shoreline has changed radically throughout geological time. As Plate 4 of *Annex II* illustrates, that shoreline for a long period ran east/west, during the Cenozoic[2] era (Paleocene[3] to Miocene[4]), with most of what is now central

[1] The term "tectonics" refers to the branch of geology dealing with the broad architecture of the upper part of the Earth's crust, that is, the regional assembling of structured or deformational features. "Tectonic trends" refers to the direction of such features. The definitions of geological terms in this Memorial are based upon the *Glossary of Geology:* American Geological Institute, Washington, D.C., 1977; and these terms are discussed in greater detail in relevant context in *Annex II*.

[2] "Cenozoic" refers to the latest era of geological time covering a span of 70 million years.

[3] "Paleocene" refers to the earliest epoch of the Cenozoic era, the time period from 70 million to 53 million years ago.

[4] "Miocene" refers to an epoch during the time period from 26 million years to 7 million years ago.

and northern Tunisia and the whole shelf lying immediately to the north submerged. During Early Eocene times[1], the whole of the Sirt Basin was inundated, and the shoreline ran round the limits of what is now the Sirt rift system. This rift system and the Pelagian Basin were submerged at the same time. Thus, both developed geologically under the same conditions, leading to the geological identity between the two.

B. Geomorphology[2] and Bathymetry

66. The geomorphology of the area is closely related to the tectonic trends. Throughout the Sirt rift system the fault lines run northwest/southeast, roughly parallel to each other. These faults have created high areas (*horsts*) and low areas (*grabens*) which, running parallel, have resulted in formations that may be visualized as parallel structural ridges and valleys. These continue right through into the Gabes-Sabratha Basin. During the Post-Miocene[3] and Pleistocene[4] epochs or times, the Gabes-Sabratha Basin (and indeed the Pelagian Basin) was dry land. During this period of time, the parallel series of ridges and valleys created by the tectonic trends were subjected to considerable erosion. As a result, they became sculptured to give a surface profile, a geomorphological pattern, of well-defined parallel ridges and valleys. Subsequently this area was submerged as the sea level rose. The water depth was shallow in the west and deeper in the east because the whole area tilted downwards towards the east, and the parallel series of ridges and valleys, now submerged, became the seabed.

67. The same series of parallel ridges and valleys appear on the bathymetric maps and charts (see Plate 6 and Figure 13 of *Annex II*). One can see clearly the correlation between the geomorphology and bathymetry of the continental shelf and the underlying tectonic trends from Figure 13 of *Annex II*, which is a bathymetric overlay of a map showing the main tectonic trends. It is clearly apparent that the detailed bathymetric relief of the Pelagian Basin is closely related to the topographic relief present today in the Sirt Basin and that no equivalent topographic relief is found anywhere in the present Tunisian landmass.

C. Lithology

68. Finally, the Study attached as *Annex II* contains an analysis of the geology of the area in the specific sense of lithology (rock composition or *facies*)[5]. It shows that this shelf area may be identified with the adjoining landmass to the south especially in the Sirt Basin area, as a result of the

[1] "Eocene" refers to an epoch from 53 million to 37 million years ago.
[2] The term "geomorphology" refers to that branch of both physiography and geology which deals with the form of the earth, the general configuration of its surface, and the changes that take place in the evolution of land forms.
[3] "Post-Miocene" refers to any time more recent than 7 million years ago.
[4] "Pleistocene" refers to the time period since approximately 1.5 million years ago.
[5] See Chapter II, Section 2A of the Study attached as *Annex II*.

connection between the rock formations *(facies)* found onshore and offshore. A detailed discussion of this point may be found in Chapter II, Section 2A of the Study attached as Annex II—which also contains figures and plates keyed to the text.

SECTION 2. GEOGRAPHICAL AND RELATED FEATURES

69. The African continent, the Mediterranean Sea and Southern Europe are portrayed by *Map No. 1* (facing page 8 above). It is apparent from this map that the whole trend of the North African coast (some 3,200 nautical miles) from the Suez Canal to the Strait of Gibraltar is east/west. In the middle of the north-facing coast of Africa is a roughly rectangular shaped indentation. This indentation, however, does not alter the general northward-facing direction of the coast. The primarily west-facing coast of the indentation, in the vicinity of Benghazi, belongs to Libya while the primarily east-facing coast belongs to Tunisia.

70. Libya lies approximately between 34°N and 19°N and between 11° E and 25° E, and is roughly rectangular in shape. It has an area of approximately 1,775,500 square kilometres and a coastline of approximately 1,100 miles running in the same general direction as the North African coast. The average depth of Libya southward from the Mediterranean Sea is almost equal to the length of its northward-facing coastline between its boundary with Tunisia in the west and its boundary with Egypt in the east.

71. Libya is part of the great North African plateau. Northern Libya, with the exception of the Jabal al Akhdar (Green Mountain) in the east and the Jabal Nefusa in the west, slopes gently toward the Mediterranean. The Jabal al Akhdar, located in Cyrenaica, runs parallel to the Mediterranean eastward from the Gulf of Sirt. In Tripolitania, the Jabal Nefusa runs from Al Khums on the Mediterranean Sea to the vicinity of Wazin on the Tunisian border, a distance of some 360 kilometres. To the north of the Jabal Nefusa lies the Jeffara Plain. Though comparatively small in area (approximately 18,000 square kilometres), the Jeffara Plain contains most of the population of Libya and includes Tripoli, the capital and largest city of the country. To the south of the Jabal Nefusa lies a vast desert (Hamadah al Hamra) which not only forms the greater part of Libya, but extends into southern Tunisia as well. (These features are shown on *Maps 5 and 6 facing this page*[1].)

72. Tunisia lies approximately between 30° N and 38° N and between 7° E and 12° E and resembles an elongated rectangle. For its comparatively small size (roughly 164,150 square kilometres), Tunisia's geographical features are more complicated than Libya's. Unlike Libya, Tunisia has a southeastward- and eastward-facing as well as a north-facing coast.

[1] In accordance with Art. 50, para. 2 of the Rules of Court, the *National Atlas of the Socialist People's Libyan Arab Jamahiriya*, First Edition, Tripoli, 1978, from which *Map Nos. 5* and *6* are taken, has been deposited with the Registrar.

73. As shown by *Map No. 7*[1] (facing page 32 below), Tunisia may be regarded as falling into three regions: the southern, central and northern. From the tripoint of Tunisia's boundaries with Libya and Algeria northward to a line that runs roughly westward from Gabes, the southern region is essentially desert, climatically and topographically related to the Sahara. Indeed, this region may be considered to be an extension of the Sahara desert northward from the region of Ghadames across the border in Libya. West of Gabes lie the salt marshes (*chotts*) of Fedjadj, Djerid and El Rharsa. North of the salt marshes, in central Tunisia, is a transitional region comprised of steppes. The central region becomes hilly toward the north and mountainous toward the northwest. In the northern region, there are two predominant physical features: mountain ranges which cross the region and fan out westward in a general northeast/southwest direction; and the Wadi Medjerda (valley). The mountains in the northern region are an extension of the Atlas Mountains which, in turn, are a continuation of the Alps formation of Sicily and the main landmass of Italy and not related to the great North African plateau.

74. The geography of southern Tunisia and northwestern Libya demonstrates that the predominant common feature of these areas is the northward thrust of the Sahara desert and the great North African plateau. The predominant geological features (discussed in paragraphs 61 through 68 above) demonstrate that the continental shelf is the natural prolongation northward of this portion of the North African landmass. Although large segments of the Tunisian coast face southeastward and eastward, no areas of continental shelf appertain to these segments of the Tunisian coastline. Rather, an examination of the predominant geographical and geological features establishes that such areas of the continental shelf are, in fact, the natural prolongation northwards of the African landmass to the south.

75. As noted in paragraphs 69 and 70 above, the Libyan coast runs in a general east/west direction. For approximately 190 nautical miles, however, from the border at Ras Ajdir to the vicinity of the western limit of the Gulf of Sirt, its general direction becomes east/southeast. From Gabes eastward to Ras Ajdir, roughly 100 nautical miles, Tunisia's coast runs in a similar direction. The direction of this portion of the Tunisian coastline is broken only by a relatively brief sector marked by the projection northward of promontories at either end of the Bay of Bou Ghara.

76. The portion of the Libyan coast from Ras Ajdir to the western limit of the Gulf of Sirt is virtually without marked irregularities. There are no islands, bays or peninsulas of any significance. The only natural harbor for seagoing vessels on this stretch of the coast is at Tripoli. In contrast, Tunisia's coast is irregular and contains gulfs, promontories and offshore islands; for example, the Island of Djerba, Gulf of Gabes, Kerkennah Islands and the Ras Kaboudia promontory.

77. North of the Bay of Bou Ghara lies the Island of Djerba (500 square kilometres), looking as if it had been torn from the mainland,

[1] In accordance with Art. 50, para. 2 of the Rules of Court, a copy of the entire map has been deposited with the Registrar.

leaving behind the bay—the island and the bay being of almost equal size. Neither the Bay of Bou Ghara nor the Island of Djerba affect the generally westward direction of the coastline from Ras Ajdir to the town of Gabes.

78. With regard to the Gulf of Gabes[1], there is an aspect which merits attention. As properly defined, the Gulf of Gabes refers to the indentation on the coast of Tunisia which lies shoreward of an imaginary line between Ras Yonga (lying at the northwest extremity of the Gulf) and Borji Djilidi (lying on the northwest coast of Djerba). According to the *Mediterranean Pilot*: "The Gulf of Gabes is entered between Ras Yonga and Île de Djerba ... 37 miles SE[2]." This description accords with the description in editions of the *Instructions Nautiques* ever since 1899. For example, the latest edition (1968) states: "Le golfe de Gabès, l'ancienne Petite Syrte, s'ouvre entre le ras Yonga (Ungha)... et l'extrémité NW de l'île de Djerba (33° 53'N - 10°51'E)[3]." These are the "natural entrance points" to the "bay" or indentation.

79. However, even accepting that the Gulf of Gabes does qualify as a "bay" within the meaning of Article 7 of the 1958 Convention[4], it would still not be possible to close it by a line from Ras Yonga to the Island of Djerba, since this line is approximately 40 nautical miles in length and, under paragraph 4 of Article 7 of the 1958 Convention, a closing line cannot exceed 24 nautical miles[5].

80. The Kerkennah Islands also merit attention. They are located eastward of the port of Sfax (which is a little more than halfway along the coast from Ras Kaboudia to Ras Yonga) and consist of two small islands, Chergui and Gharbi, as well as some islets and offshore rocks. Chergui and Gharbi are separated by a narrow channel. Chergui is the larger but is low-lying; indeed, at spring tides Chergui is divided into three parts by shallow lagoons. The area of the two main islands is a total of 180 square kilometres. The islands lie to the southwest of the Kerkennah Banks and their axis runs northeast to southwest. These islands are separated from the mainland by shallow water, but there is a natural navigable channel which can be used by vessels drawing less than three metres. The average distance of the islands from the mainland is about 15 nautical miles, although the distance is greater at the northeast than at the southwest end.

81. The effect of the geographical configuration is that the northeast tip of the Kerkennah Islands is almost exactly on the same north/south meridian as the entrance to the Bahiret El Biban, i.e., at about 11° 19' E. It should be noted also that the Kerkennah Islands do not have their own continental shelf.

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[1] See fn. 3 at p. 23 above.

[2] *Mediterranean Pilot*, Vol. 1, *op. cit.*, p. 171, (a copy of this page is attached as *Annex I-18)*.

[3] *Instructions Nautiques, Afrique (Côte Nord)-Levant*. Paris, Service Hydrographique de la Marine, 1968; Série D, Vol. VI, p. 189 (a copy of this page is attached as *Annex I-19.)* In accordance with Art. 50, para. 2 of the Rules of Court, a copy of the entire volume has been deposited with the Registrar.

[4] The provisions of the 1958 Convention mentioned in this paragraph are attached as *Annex I-20*. See also paras. 136 and 137 below.

[5] The question of the "closing line" will be examined further in connection with the baselines drawn by Tunisia in 1973 (see paras. 136 and 137 below).

PART II. THE LAW

CHAPTER I
BASIC PRINCIPLES

82. The Special Agreement between the Parties, by virtue of which the Court is seized of the present case, specifies the ambit within which the Court is requested to render judgment[1]. Pursuant thereto, the Parties have reserved to themselves the actual delimitation of the areas of continental shelf appertaining to each of them, but have requested the Court to determine the principles and rules of international law which are applicable to such delimitation. The Court is further requested to take its decision according to equitable principles, the relevant circumstances which characterize the area, and the new accepted trends in the Third United Nations Conference on the Law of the Sea (which in Article 83 of *ICNT/Rev. 2*[2] also focuses on equitable principles).

83. In this Chapter, Libya will set forth the principles of international law which, in its view, are applicable to this case.

84. The Court's principal decision with respect to the law governing the delimitation of the continental shelf is its Judgment of 20 February 1969 in the *North Sea Continental Shelf Cases*. In that case, while the Court accepted the view that Articles 1 through 3 of the 1958 Convention may be "... regarded as reflecting, or as crystallizing, received or at least emergent rules of customary international law relative to the continental shelf[3]," the Court took the contrary view of Article 6 of the 1958 Convention dealing with delimitation of boundaries between States abutting on the same shelf and providing for the equidistance rule.

85. Having rejected Article 6 and the "rule" of equidistance as the expression of a rule of customary international law, the Court's judgment proceeded to identify the applicable rules, as requested by the Parties. The Court had no doubt that there was one fundamental rule to which all other rules were subservient. In this connection the Court held that "... the most fundamental of all the rules of law relating to the continental shelf...[4]", which must be applied in accordance with equitable principles, is

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[1] See Art. 1 of the Special Agreement set forth in para. 4 above.

[2] All references in the Memorial to *"ICNT/Rev.2"* refer to the *Informal Composite Negotiating Text/Revision 2*, A/CONF. 62/WP. 10/Rev. 2, 11 Apr. 1980. Articles of *ICNT/Rev.2* referred to in this Memorial are attached as *Annex I-21*. It is important to note, however, that para. 10 of Art. 76 of *ICNT/Rev. 2* provides: "The provisions of this Article are without prejudice to the question of delimitation of the continental shelf between adjacent or opposite States", and in addition both Parties have expressed their reservations (as members of the Arab group in the Third United Nations Conference on the Law of the Sea) to the formulation of Art. 76(1), other than to the words—"The continental shelf of a coastal State comprises the sea-bed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory ...". Libya also reserves all rights to its position (whether individually or as a member of the group of 29 co-sponsors of NG7/10) as to the formulation of Arts. 74 and 83 of *ICNT/Rev.2* as a basis for further negotiations or otherwise. See also fn. 1 at p. 4 above.

[3] *I.C.J. Reports 1969*, p. 39, para. 63.

[4] *Ibid.*, p. 22, para. 19.

that the juridical basis in international law of a State's entitlement to areas of continental shelf off its coasts rests on "a physical fact[1]" of "... a natural prolongation of its land territory into and under the sea ...[2]" because "... the land is the legal source of the power which a State may exercise over territorial extensions to seaward[3]...". The areas of continental shelf thus constituted are—

> "... part of the territory over which the coastal State already has dominion,—in the sense that, although covered with water, they are a prolongation or continuation of that territory, an extension of it under the sea[4]."

86. In view of the foregoing, the Court found the first prerequisite for delimitation of contested areas of the continental shelf lying in front of adjacent States to be a good faith effort to reach mutual agreement concerning the areas appertaining to each. An agreement on delimitation should accord with equitable principles—

> "... in such a way as to leave as much as possible to each Party all those parts of the continental shelf that constitute a natural prolongation of its land territory into and under the sea, without encroachment on the natural prolongation of the land territory of the other...[5]".

87. The concept of the continental shelf as the natural prolongation of the State's land territory was endorsed in its entirety by the Third United Nations Conference on the Law of the Sea. In defining the shelf, Article 76 (1) of the *ICNT/Rev.2* provides:

> "The continental shelf of a coastal State comprises the sea-bed and subsoil of the submarine areas that *extend beyond its territorial sea throughout the natural prolongation of its land territory* ...[6]". (Italics added)

It thus explicitly underscores the juridical significance of the concept of "natural prolongation".

88. The absence of an agreement, necessitating the guidance of a judicial or arbitral tribunal, leaves the fundamental principle of natural prolongation unchanged. Thus, in the *Arbitration between the United Kingdom of Great Britain and Northern Ireland and the French Republic on the Delimitation of the Continental Shelf* (the "Anglo-French Arbitration") the Court of Arbitration[7] approved that principle for purposes of its award[8].

89. The principle of natural prolongation must necessarily be applied,

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[1] *I.C.J. Reports 1969*, p. 51, para. 95.
[2] *Ibid.*, p. 22, para. 19.
[3] *Ibid.*, p. 51, para. 96.
[4] *Ibid.*, p. 31, para. 43.
[5] *Ibid.*, p. 53, para. 101(C)(1) [*dispositif*].
[6] See fn. 2 at p. 35 above and fn. 1 at p. 4 above.
[7] References in this Memorial to the "Court of Arbitration" are to that Court.
[8] Decisions of 30 June 1977 and 14 Mar. 1978. Presented to Parliament by the Secretary of State for Foreign and Commonwealth Affairs by Command of Her Majesty, Mar. 1979. London, H.M. Stationery Office [1979], Misc. No. 15, 203 pages. (Cmnd. 7438.): p. 51, para. 77; p. 52, paras. 79 and 80.

not in the abstract, but in relation to the geographical, geological and other relevant circumstances of the particular area. Thus, the questions of geology and geography become of decisive importance since, once the natural prolongation of a State is determined, delimitation becomes a simple matter of complying with the dictates of nature. Therefore, if proper effect is given to the natural prolongation concept, no area of the continental shelf could reasonably be in contention between the Parties in these proceedings, inasmuch as the delimitation of the boundary would necessarily run in the direction of the natural prolongation away from the coast (in the present case northward). It follows that no area of overlapping claims would remain for the treatment envisaged in the *dispositif* of the *North Sea Continental Shelf Cases*, which provides for either agreed division or joint use of the area of overlap or, failing agreement, equal division of that area[1].

90. The next Chapter, therefore, examines the legal significance of physical features—geological and geographical—which serve to identify the natural prolongations of the land territory of Libya and Tunisia respectively. However, before turning to those physical factors, it must be emphasized that in the *North Sea Continental Shelf Cases* the Court saw no contradiction between the cardinal principle of natural prolongation and principles of equity. The reason is clear. As the Court emphasized, the rights or title of a State over that area of shelf which constitutes the natural prolongation of the land territory of that State "... exist *ipso facto* and *ab initio*, by virtue of its sovereignty over the land ...[2]". There can therefore be no possible inequity in a delimitation which is consistent with the physical facts of natural prolongation. Indeed, it is entirely equitable to recognize the physical limits of each State's natural prolongation in any delimitation agreed between them, or, in the absence of agreement, as indicated by the impartial judgment of a tribunal.

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[1] *I.C.J. Reports 1969*, p. 53, para. 101(C)(2) [*dispositif*].
[2] *Ibid.*, p. 22, para. 19.

CHAPTER II

SIGNIFICANCE OF PHYSICAL FEATURES

91. The legal concept of the continental shelf necessarily takes into account both the geology[1] and the physical and political geography of the area in question. In the *North Sea Continental Shelf Cases*, the Court spoke of the necessity "... to examine closely the geographical configuration of the coastlines of the countries whose continental shelves are to be delimited[2]."

92. For example, it is the geographical features of the coastline of a State which provide the base points employed in delimiting the outer limits of the territorial sea and, as proposed in *ICNT/Rev. 2*[3], of the continental shelf as well. These same geographic features, used as base points, may also be relevant in determining the boundaries between adjacent and opposite States, if the equidistance method, or some variant of it, is used. However, of far more fundamental importance is the concept that the geographical features and general direction of a State's coastline determine the extent of the landmass and the direction of its natural prolongation. It is the actual coast—or for the purposes of delimitation the relationship between two actual coasts—to which the legal principles governing delimitation must be applied.

93. It was for this reason that the Court of Arbitration in the *Anglo-French Arbitration* held as follows:

> "The Court considers that the method of delimitation which it adopts for the Atlantic region must be one that has relation to the coasts of the Parties actually abutting on the continental shelf of that region[4]."

For the same reason the Court rejected the French contention based upon prolongation of the lines of general direction of the Channel coasts ("lignes de lissage") far into the Atlantic Ocean. The Court observed that such a contention—

> "... detaches the delimitation almost completely from the coasts which actually abut on the continental shelf of the Atlantic region, and is thus not easily reconciled with the fundamental principle that the continental shelf constitutes the natural prolongation of a State's territory under the sea[5]."

94. It is apparent also that the geographical configuration of a coast—whether concave or convex, whether primarily regular or highly irregular, containing gulfs, promontories or offshore islands or islets—may determine decisively whether, in particular circumstances, the equidistance method is equitable. The point is relevant to Tunisia's reliance

[1] See paras. 61 through 68 above for a summary of the technical aspects of the geological Study attached as *Annex II*.
[2] *I.C.J. Reports 1969*, p. 51, para. 96.
[3] See fn. 2 at p. 35 above.
[4] *Anglo-French Arbitration*, (Cmnd. 7438.), p. 116, para. 248.
[5] *Ibid.*, p. 115, para. 246.

during discussions upon the equidistance method, discussed more fully in paragraphs 126 and 143 through 153 below. It supplies merely one more example of the significance of the comment of the Court of Arbitration that "... the validity of the equidistance method, *or of any other method* ... is always relative to the particular geographical situation[1]."

95. In sum, as the Court has expressly noted with respect to the physical factors which are necessarily involved in considering delimitation of the continental shelf, there can never be any question of completely "refashioning nature[2]."

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[1] *Anglo-French Arbitration*, (Cmnd. 7438.), p. 54, para. 84 (Italics added).
[2] *I.C.J. Reports 1969*, p. 49, para. 91.

CHAPTER III

EQUITABLE PRINCIPLES AND THE INEQUITABLE CONSEQUENCES OF APPLYING THE EQUIDISTANCE METHOD

96. If, accepting the facts of geology and geography, use of the natural prolongation concept does not clearly lead to a decisive delimitation, the problem then becomes how "delimitation is to be effected by agreement in accordance with equitable principles[1]." In elaborating the content of these equitable principles it is important to note with the Court that in applying equitable principles to reach an agreed delimitation—

> "... it is not a question of applying equity simply as a matter of abstract justice, but of applying a rule of law which itself requires the application of equitable principles ...[1]."

As the Court concludes:

> "On a foundation of very general precepts of justice and good faith, actual rules of law are here involved which govern the delimitation of adjacent continental shelves—that is to say, rules binding upon States for all delimitations[2] ... [and again] ... it is precisely a rule of law that calls for the application of equitable principles[3]".

97. As indicated above, the cardinal rule, so far as the Court was concerned, is that of the legal consequences of natural prolongation. Whether or not that rule is described as an "equitable principle" is largely a matter of semantics, for it is clear that the Court saw no contradiction between "natural prolongation" and equitable principles. The physical facts of natural prolongation have to be accepted, and it is not the function of equity to disregard those facts and dictate a delimitation inconsistent with those facts. However, where—unlike the present case—areas of continental shelf may physically be considered the common natural prolongations of two States, so that the physical facts of natural prolongation no longer assist in defining the respective limits of the two shelf areas, equitable principles, as a basis for evaluating the geographical and other relevant circumstances, come into operation. As is made apparent in this Memorial, the physical facts of natural prolongation do in fact indicate the appropriate delimitation, which is one reflecting the character of the shelf as an extension northwards of the land territory of Libya and of the southern coast of Tunisia. It would be only on a contrary view of the physical facts that, treating the whole shelf area as one to which overlapping claims are made, one would need to have recourse to the other equitable principles elaborated by the Court.

98. Among the equitable principles listed by the Court as factors "to be taken account of " in applying the equidistance method in the delimitation of areas of continental shelf was the concept of "proportionality"—a concept which requires careful analysis.

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[1] *I.C.J. Reports 1969*, p. 47, para. 85.
[2] *Ibid.*, pp. 46 and 47, para. 85.
[3] *Ibid.*, p. 48, para. 88.

99. "Proportionality", in the sense of "apportionment[1]" of "just and equitable share[s][1]" of adjacent continental shelf on the basis of a principle of distributive justice[2], was decisively rejected by the Court when advocated by the Federal Republic of Germany in the *North Sea Continental Shelf Cases* because it was "wholly at variance[3]" with the fundamental rule of legal entitlement to areas of the continental shelf.

100. A second concept of "proportionality"—the sense in which the Court regarded "proportionality" as a possibly pertinent "factor" in negotiations between the three States before it—was expressed as—

> "... a reasonable degree of proportionality which a delimitation effected according to equitable principles ought to bring about between the extent of the continental shelf appertaining to the States concerned and the lengths of their respective coastlines ... measured according to their general direction ...[4]".

This "factor" would accord with the factual correlation that, generally speaking, the longer the general direction of the coastline, the greater the appurtenant continental shelf.

101. In determining the propriety of any method of delimitation of continental shelves effected according to equitable principles, this concept of proportionality must therefore be considered. Pointing out how, in certain geographical circumstances, particularly with respect to adjacent States, the equidistance method "leads unquestionably to inequity", the Court in the *North Sea Continental Shelf Cases* made an observation highly pertinent to the emphasis placed by Tunisia on the equidistance method in its discussions with Libya:

> "The slightest irregularity in a coastline is automatically magnified by the equidistance line as regards the consequences for the delimitation of the continental shelf. Thus it has been seen in the case of concave or convex coastlines that if the equidistance method is employed, then the greater the irregularity and the further from the coastline the area to be delimited, the more unreasonable are the results produced. So great an exaggeration of the consequences of a natural geographical feature must be remedied or compensated for as far as possible, being of itself creative of inequity[5]."

102. In rejecting the contention advanced in the *North Sea Continental Shelf Cases* that the equidistance method had attained obligatory status, the Court emphasized—

> "... that the essential reason why the equidistance method is not to be regarded as a rule of law is that, if it were to be compulsorily applied in all situations, this would not be consonant with certain basic legal notions which ... have from the beginning reflected the *opinio juris* in

[1] *I.C.J. Reports 1969*, p. 22, para. 18.
[2] *Ibid.*, p. 21, para. 17.
[3] *Ibid.*, p. 22, para. 19.
[4] *Ibid.*, p. 52, para. 98; and see p. 54, para. 101(D)(3) [*dispositif*].
[5] *Ibid.*, p. 49, para. 89(*a*).

> the matter of delimitation; those principles being that delimitation must be the object of agreement between the States concerned, and that such agreement must be arrived at in accordance with equitable principles[1]".

The Court had earlier observed:

> "These two concepts, of delimitation by mutual agreement and delimitation in accordance with equitable principles, have underlain all the ... history of the subject [subsequent to the Truman Proclamation of 28 September 1945][2]".

103. The comment of the Court to the effect that, in the application of equitable principles, "... the equidistance method can be used, but other methods exist . . . [3]", is to be read in the light of the fate of a contention by a party to the *North Sea Continental Shelf Cases* that the equidistance principle is by definition an "equitable principle" of delimitation. The Court rejected the contention on the ground that it ". . . involves a postulate that clearly begs the whole question at issue [4]."

104. A consideration which led the Court to the conclusion that the equidistance method is not expressive of customary law was "... the part played by the notion of special circumstances relative to the principle of equidistance as embodied in Article 6 [of the 1958 Convention] ...[5]". The intimate and inseparable relationship is summed up in the hyphenated term "equidistance - special circumstances rule", a phrase employed by the Court of Arbitration in its Judgment[6]. Since Article 6 of the 1958 Convention is in no sense obligatory upon the Parties, the "special circumstances" component of the rule does not fall to be considered in this case as such. It must be noted, however, that in view of the circumstances of this case in which natural prolongation is the controlling principle, the equidistance method has no valid application.

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[1] *I.C.J. Reports 1969*, p. 46, para. 85.
[2] *Ibid.*, p. 33, para. 47.
[3] *Ibid.*, p. 47, para. 85(*b*).
[4] *Ibid.*, p. 24. para. 24.
[5] *Ibid.*, p. 42, para. 72.
[6] *Anglo-French Arbitration*, (Cmnd. 7438.), p. 48, para. 70.

CHAPTER IV

STATE PRACTICE

105. The inescapable conclusion from the foregoing, as this Court has held, is that there is no single method of delimitation, the use of which is in all circumstances obligatory[1]. Moreover, as the Court concluded in the *North Sea Continental Shelf Cases*—

> "... the international law of continental shelf delimitation ... permits resort to various principles or methods ... provided that, by the application of equitable principles, a reasonable result is arrived at[2]".

106. This conclusion is confirmed by State practice. Whatever the undoubted convenience of the equidistance method in many situations, practice discloses that there are other situations in which—for reasons of equity and because of the geographical configurations in question— States have adopted some other method of delimiting their maritime boundaries. (See, e.g., paragraphs 117 through 119 below and illustrative maps accompanying these paragraphs.)

107. These methods include the varying or modification of strict equidistance. Such a method was adopted by the Court of Arbitration to produce an equitable delimitation in the South-West Approaches or Atlantic area[3]. Another example is the Indonesian/Malaysian Agreement of 27 October 1969[4] which modified a lateral, equidistance boundary off Borneo and Sarawak so as to give reduced effect to the Indonesian island groups of Kepulauan Natuna Selatan and Kepulauan Natuna Utara, on the basis that their effect diminished in proportion to their distance offshore.

108. There are also situations in which the parties have used methods which are considered justified in their own right, and which do not derive from the equidistance principle. There are numerous examples of these methods, which usually involve the projection of a line so as to produce an equitable delimitation of the maritime area.

> (*a*) For example, in the Senegal/Guinea Bissau Agreement of 26 April 1960[5] equidistance is not used, nor do the islands offshore affect the boundary. The boundary is in fact a straight line projected seawards from the land boundary along the 240° azimuth.

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[1] *I.C.J. Reports 1969*, p. 53, para. 101(A) and (B) [*dispositif*].
[2] *Ibid.*, p. 49, para. 90.
[3] *Anglo-French Arbitration*, (Cmnd. 7438.)
[4] *International Boundary Study (Limits in the Seas)*: Washington, D.C., Office of The Geographer, United States Department of State, Series A, No. 1, 21 Jan. 1970. In accordance with Art. 50, para. 2 of the Rules of Court, a copy has been deposited with the Registrar. It should be noted that certain papers in this series bear the foregoing title, while others are entitled, *"Limits in the Seas"*.
[5] *Limits in the Seas:* Washington, D.C., Office of The Geographer, United States Department of State, No. 68, 15 Mar. 1976. In accordance with Art. 50, para. 2 of the Rules of Court, all papers in the *Limits in the Seas* series referred to in this Memorial have been deposited with the Registrar.

(*b*) The Colombia/Ecuador Agreement of 23 August 1975[1] is a straight line projecting from the land boundary along the parallel of latitude. It makes no use of equidistance nor of the Ecuadorian straight baseline.

(*c*) Another agreement involving Colombia is the Colombia/Panama Agreement of 20 November 1976[2]. This involves two separate boundaries. The boundary in the Pacific, though using modified equidistance for part of its course, uses for the latter part of its course a straight line of some 70 to 72 nautical miles in length along the 5° parallel. The boundary in the Caribbean Sea consists of a series of straight lines which—while using modified equidistance for part of its course—develop into a step-like configuration where they become a boundary between the Panamanian coast and the small Colombian islands or cays of Albuquerque and Sudeste. Its basis is simplicity and not equidistance.

(*d*) Yet a further Colombian agreement is that with Costa Rica of 17 March 1977[3]. This continues to the west the line agreed between Colombia and Panama. It consists of two straight lines, the first along the parallel of latitude 10° 49′ N, and then a line due north along the meridian 82° 14′ W. With respect to this Agreement, The Geographer of the United States Department of State has observed :

"The delimitation appears to have been negotiated on the basis of equitable principles established by agreement between the two states[4]".

(*e*) The Brazil/Uruguay Agreement of 21 July 1972[5], a boundary between adjacent States, consists of a single rhumb line extending seaward along a 128° azimuth.

(*f*) Finally, the recent (and unpublished) Netherlands/Venezuela Agreement of 31 March 1978, which specifically recites the aim of the parties to apply equitable principles, adopts two straight lines to the east and west of the islands of Bonaire and Aruba off the Venezuelan coast. These incline inwards in a narrowing "funnel", to form a semi-enclave round the islands; the boundary lines do not depend on equidistance.

109. Thus, State practice confirms that application of the equidistance method is neither mandatory nor inevitable. Indeed, in a number of recently negotiated agreements States have utilized straight lines drawn on equitable principles to resolve questions of delimitation.

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[1] *Limits in the Seas*, No. 69, 1 Apr. 1976.
[2] *Limits in the Seas*, No. 79, 3 Nov. 1978.
[3] *Limits in the Seas*, No. 84, 15 Feb. 1979.
[4] *Ibid.*, p. 5 (a copy of this page is attached as *Annex I-22*).
[5] *Limits in The Seas*, No. 73, 30 Sep. 1976.

PART III

APPLICATION OF THE LAW TO THE FACTS

CHAPTER I

APPLICATION OF THE NATURAL PROLONGATION CONCEPT IN THE PRESENT CASE

Introduction

110. As has been demonstrated in paragraphs 85 through 87 above, it is a settled principle of international law that—

> "...[the legal] institution of the continental shelf has arisen out of the recognition of a physical fact...[and is]...by definition, an area physically extending the territory of most coastal States into a species of platform ...[1]".

As stated by the Court:

> "What confers the *ipso jure* title which international law attributes to the coastal State in respect of its continental shelf, is the fact that the submarine areas concerned may be deemed to be actually part of the territory over which the coastal State already has dominion—in the sense that, although covered with water, they are a prolongation or continuation of that territory, an extension of it under the sea[2]."

SECTION 1. Geological and Geomorphological Features of the Area

111. In the words of the Court: "[t]he appurtenance of the shelf to the countries in front of whose coastlines it lies, is therefore a fact ...[3]". Inasmuch as it is a fact, it follows that—

> "... it can be useful to consider the geology of that shelf in order to find out whether the direction taken by certain configurational features should influence delimitation because, in certain localities, they point-up the whole notion of the appurtenance of the continental shelf to the State whose territory it does in fact prolong[3]."

112. The geological Study filed with this Memorial as *Annex II*, the technical findings of which are briefly summarized in paragraphs 61 through 68 above, demonstrates that the areas of continental shelf "in front of" the Libyan coastline appertain to Libya as a matter of fact. Therefore under the natural prolongation concept these areas of shelf must necessarily appertain to Libya as a matter of law as well.

113. The essential points in the geological Study (*Annex II*) that lead to and confirm this conclusion are these:

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[1] *I.C.J. Reports 1969*, p. 51, para. 95.
[2] *Ibid.*, p. 31, para. 43.
[3] *Ibid.*, p. 51, para. 95.

(a) The area of continental shelf concerned is part of a distinct geological unit, the Pelagian Basin, which is part of the stable African platform to the south. This area is geologically different and distinct from the Atlas Mountain region of Tunisia west of the north/south fault line running from Gabes to Tunis. Thus, all of Tunisia west of this line is part of a different geological domain.

(b) Within the Pelagian Basin, and therefore the continental shelf in question, there is a dominant tectonic trend, the Sirt Basin rift system, running from the Libyan landmass to the southeast into the Gabes-Sabratha Basin to the northwest. This rift system, which is associated closely with the Libyan landmass, has caused the principal geomorphological and bathymetric characteristics of the shelf area under consideration. This connection can be seen clearly from the bathymetry and the bathymetric overlay to the tectonic trend map included in *Annex II* (Plate 6 and Figure 13).

(c) Analysis of the rock formations and composition further underscores the connection between the North African landmass to the south and the area of continental shelf to the north.

In sum, scientific findings based on the geology of the area lead to the inescapable conclusion that the continental shelf in question constitutes the natural prolongation northward of the North African landmass.

SECTION 2. Geographical Aspects

A. Geographic Configuration

114. The most prominent geographic configuration of the land area from which the North African continental shelf projects northward is the general east/west direction of the North African coastline. As indicated in paragraphs 158 and 159 below, an anomalous variance in the general east/west trend of the North African coast is the turning northward of the Tunisian coastline, forming a classical example of "... an incidental special feature from which an *unjustifiable* difference of treatment could result[1]."

115. Indeed, the evidence adduced in paragraphs 61 through 68 and 74 above leads to the conclusion that, in the relevant circumstances which characterize the area of this case, the direction of the natural prolongation is determined by the general geological and geographical relationship of the continental shelf to the North African landmass, and not by the incidental or accidental direction of any particular part of the coast.

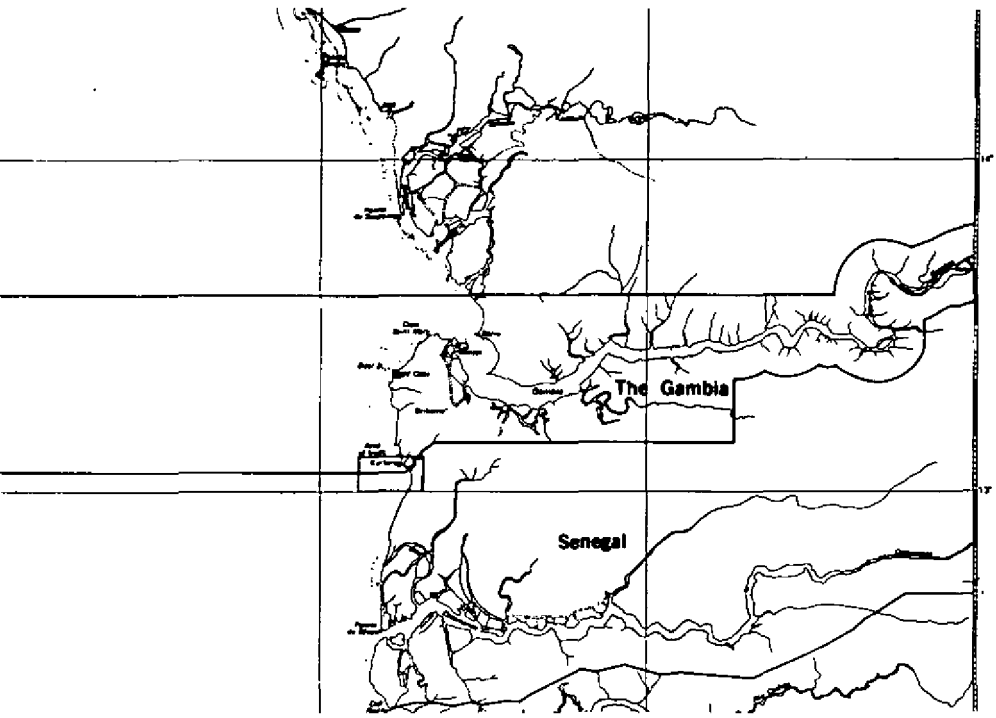
B. Land Boundary Projection

116. Yet further support for a method of delimitation which reflects the natural prolongation northward of the North African landmass is the fact that such delimitation would represent a projection northward of the terminal point of the territorial land boundary between Tunisia and Libya.

[1] *I.C.J. Reports 1969*, p. 50, para. 91 (Italics added).

The use of a line of longitude (or latitude) drawn from the terminal point of the land boundary of adjacent coastal States, and projected seawards as a maritime boundary, is well established by State practice.

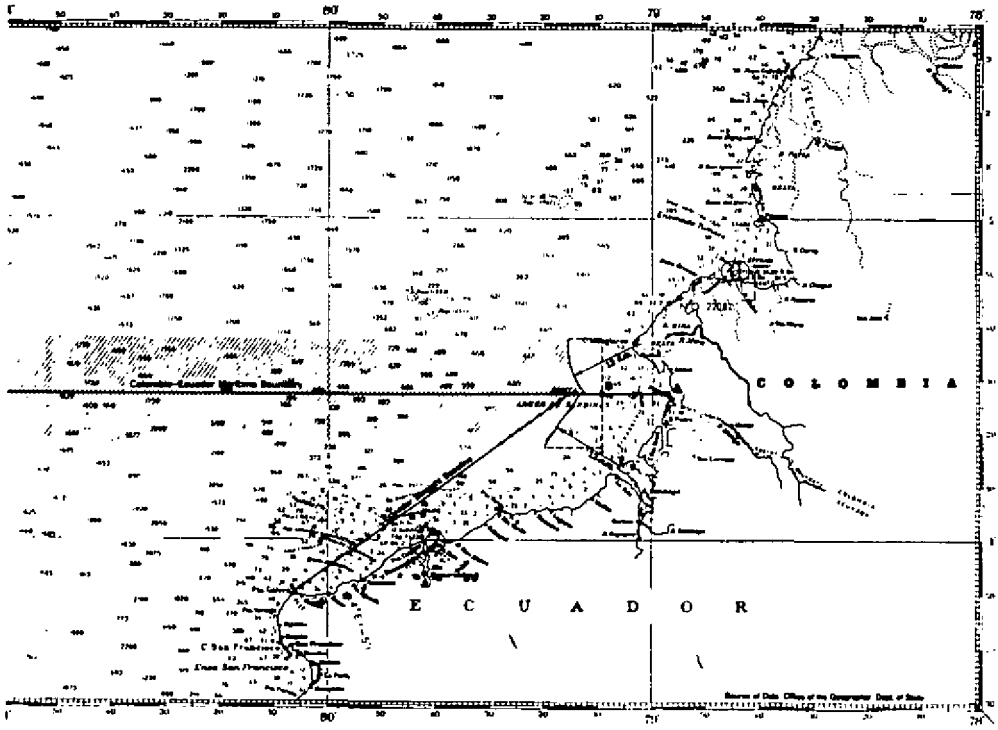
117. For example, the Gambia/Senegal Agreement of 4 June 1974[1] continues the land boundary along the line of latitude:



(Set forth above is a reduction of a map portraying the Gambia/Senegal Agreement[1].)

[1] *Limits in the Seas*, No. 85, 23 Mar. 1979.

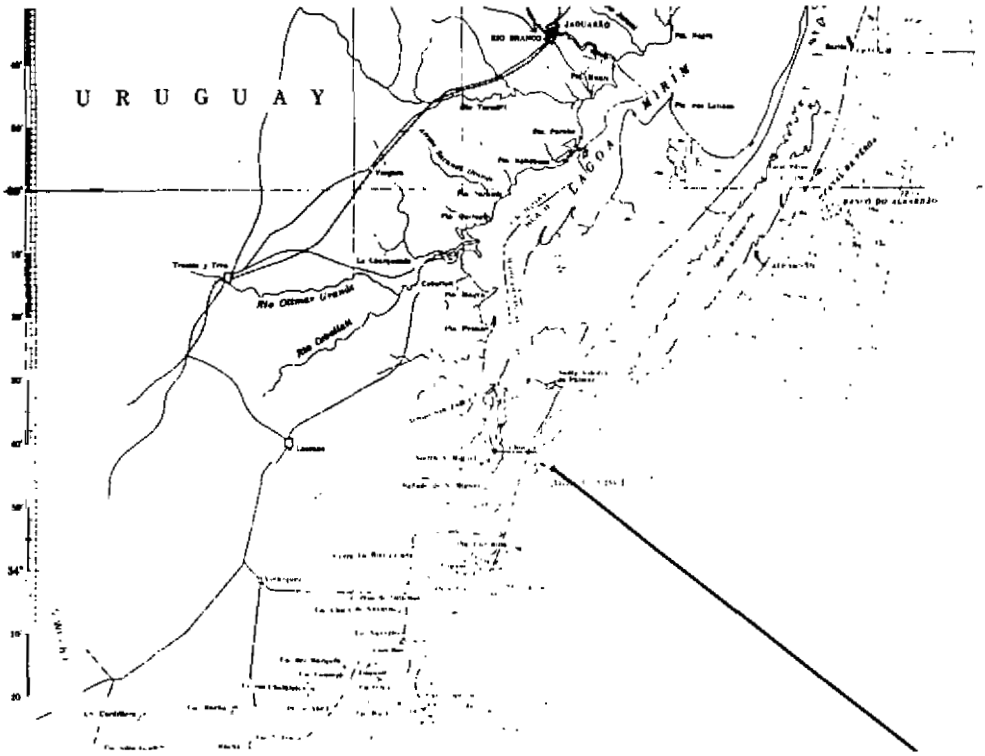
118. Another example of the continuation of a land boundary along a line of latitude is the Colombia/Ecuador Agreement of 23 August 1975[1]:



(Set forth above is a reduction of a map portraying the Colombia/Ecuador Agreement [1].)

[1] *Limits in the Seas*, No. 69, 1 Apr. 1976.

119. On somewhat similar principles, the Brazil/Uruguay Agreement of 21 July 1972[1] uses a rhumb line perpendicular to the general line of the coast.



(Set forth above is a reduction of a map portraying the Brazil/Uruguay Agreement[1].)

[1] *Limits in the Seas*, No. 73, 30 Sep. 1976.

120. In this case, it is far from unreasonable to imply, on historical grounds, the consent of the Parties to the prolongation seaward of the terminal point demarking their boundary. Such a prolongation northward corresponds directly to the result of applying the method—justified by wholly separate considerations—of reflecting the northward prolongation of the North African landmass. It would be difficult to find a more equitable process than such a doubly-based method of delimitation. As indicated in paragraphs 24 and 25 above, the Tunisian Government and its predecessors have caused the Tunisia/Libya boundary to move steadily eastward since the 19th Century. The result of this Tunisian eastward expansion is that the land boundary[1] now terminates at Ras Ajdir, and that Tunisia thus benefits from the natural prolongation northward of the landmass lying to the west of that point. Any delimitation resulting in a shelf boundary yet further eastward—or other than northward from Ras Ajdir—would both compound any historical injustice inherent in the present land boundary, and be inconsistent with the application of the fundamental legal principle which requires giving effect to the natural prolongation northward of the North African landmass.

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[1] See fn. 1 at p. 12 above regarding the land boundary as established by the 1910 Convention.

CHAPTER II

APPLICATION OF THE EQUIDISTANCE METHOD WOULD BE INEQUITABLE AND INAPPROPRIATE

Introduction

121. In view of the delimitation which would be consequent upon application of the settled principles and rules of international law described above to the facts and circumstances which characterize the area, it may appear redundant to dwell upon the reasons why application of the equidistance method, or any variation thereof, must bring about an inequitable and inappropriate delimitation in this case. It is, of course, settled that the equidistance method is not obligatory[1].

122. Nonetheless, even though the law as applied to the facts of the present case invalidates, *per se*, an automatic application of the equidistance method, it may be convenient for the Court to have before it particular considerations directly relevant to this case which make clear that application of the equidistance method would result in a disproportionate delimitation of the continental shelf and would be inequitable and inappropriate. This would be true even if the pertinent geological and geographical factors did not in and of themselves call for a delimitation of areas of the continental shelf appertaining to each Party such as would reflect the direction of the prolongation northward of the terminal point of the land boundary between Tunisia and Libya.

123. The question to be examined is in reality two-fold: first, it involves an examination of the baselines from which Tunisia apparently proposes to draw an equidistance line; and second, it calls for an enquiry into the inequity resulting from an application of the equidistance method in the circumstances characterizing the area. Significantly, this inequity would exist without regard to the baselines unilaterally promulgated by Tunisia in 1973 or any other baselines.

SECTION 1. The Tunisian Claims

124. As indicated in paragraph 41 above, Tunisia has distinguished between two different sectors of alleged maritime boundary in claims which it asserted in 1976.

125. The first line claimed by Tunisia is from Ras Ajdir out to the 50 metre isobath. In this sector Tunisia apparently alleges that a delimitation is already established, on historic grounds, along the 43°21′ (or 45°)[2] line running in a northeasterly direction.

126. The second sector, beginning at the 50 metre isobath, constitutes the major portion of the maritime boundary. In this sector, Tunisian reliance during discussions was grounded upon strict application of the

[1] *I.C.J. Reports 1969*, p. 53, paras. 101(A) and (B) [*dispositif*].
[2] See fn. at p. 18 above.

equidistance method, based upon the 1973 Tunisian baselines. In terms of Tunisia's memorandum circulated to diplomatic missions accredited to Tunisia on 18 May 1976:

> "Thus the delimitation of the continental shelf between Tunisia and Libya beyond the 50 metre isobath should be in conformity with an equidistance line drawn in accordance with international law...[1]".

This phrasing does not rely upon the 1973 baselines expressly, but it must be assumed that Tunisia regards its baselines as being "in accordance with international law" and would, accordingly, wish to draw the equidistance
(43) boundary from those baselines. (*Map No. 8* facing this page portrays what is assumed to be the lines drawn according to the 1976 Tunisian Memorandum[2].)

127. As will be apparent, Libya does not accept the division of the maritime boundary into the two sectors identified by Tunisia. Nor does Libya accept the validity of the supposed delimitation out to the 50 metre isobath or of the "historic" grounds upon which the 43° 21′ (or 45°)[3] line is alleged to rest. It is the purpose of this Chapter therefore to demonstrate the inequitable results of the equidistance method as applied to the continental shelf boundary as a whole, and not merely that part beyond the 50 metre isobath. Moreover, whereas paragraphs 82 through 109 above have demonstrated that the equidistance method is not obligatory as a matter of general international law, it is the purpose of the present Chapter further to demonstrate that, when applied to the circumstances and facts of this particular case, it would in fact produce an inequitable result.

SECTION 2. The Tunisian Straight Baselines of 1973

128. As is apparent from the facts set out in paragraphs 51 through 53 above, the 1963 Tunisian Law leads to three important conclusions. First, that, with the one exception of the Gulf of Tunis, the baselines for the territorial sea were to be the normal low-water mark; second, that only the *Gulf of Tunis (and not the Gulf of Gabes) merited closure by a straight* closing line on the basis that it was an "historic" bay; and, third, that the area beyond the territorial sea between Ras Kaboudia and Ras Ajdir, and out to the 50 metre isobath, was a fishing zone and not part of the territorial sea.

129. In the light of those conclusions, the pretensions inherent in the later 1973 Tunisian Law are quite extraordinary[4]. Libya does not contest Tunisia's claim to a 12-mile territorial sea, but it does contest the 1973

[1] See para. 13 of *Annex I-10* attached, also set forth at p. 19 above.
[2] Since no map setting forth the precise claim has ever come to the attention of Libya, it is not certain what the precise boundary lines were intended by Tunisia to be. For example, it is not clear what line is intended after juncture with the 50 metre isobath to connect with the equidistance line. On *Map No. 8* these points of juncture are connected by a line drawn along the 50 metre isobath.
[3] See fn. at p. 18 above.
[4] See paras. 54 and 55 above.

baselines because of their intrinsic illegality and the illegitimacy of their use for the purposes of drawing an equidistance boundary—strict or modified—of the continental shelf.

130. The 1973 Tunisian Law and Decree (*Annex I-17*) posit a system of straight baselines around the Kerkennah Islands and a straight closing line in the "Gulf of Gabes" which joins Ras-Es-Samun and Ras Turgueness. (The precise lines are specified in the 1973 Tunisian Decree. See (42) *Map No. 4* facing page 24 above.) Neither the 1973 Tunisian Law nor Decree provide any legal justification for these lines; there is no indication whether these baselines are to be justified by reference to the Rules of Articles 4 or 7 of the 1958 Convention[1], or by reference to an "historic" claim. Of necessity, therefore, each of these separate legal bases requires examination and comment.

A. Straight Baselines: Article 4

131. This Article of the 1958 Convention was designed to codify the 1951 Judgment of the Court in the *Anglo-Norwegian Fisheries Case*[2] and, as in that case, was directed towards a coastline of an exceptional character. It is a baseline system warranted only "[i]n localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast ...[3]". Lest it be thought that this basic condition for this type of baseline system has been modified in recent years, it is necessary to point out that Article 7 of the *ICNT/Rev. 2* is in identical terms.

132. It is obvious that the Tunisian coastline is not of this character and does not conform to this condition. Unlike the Norwegian coast, it is not deeply indented. Nor are the Kerkennah Islands part of an island fringe. On the contrary, they are two localized and isolated islands.

133. Even if the coastline were appropriate for a system of straight baselines, both Article 4(3) of the 1958 Convention and Article 7(4) of the *ICNT/Rev. 2* specify that straight lines should not be drawn from low tide elevations. The 1973 Tunisian Decree adopts straight baselines around the Kerkennah Islands drawn from the following beacons listed on the next page[4]:

[1] Although Tunisia has not ratified this Convention, Art. 4 thereof is, in essence, a codification of the 1951 Judgment of this Court in the *Anglo-Norwegian Fisheries Case*, *I.C.J. Reports 1951*, and Art. 7 is generally regarded as a codification of customary law.
[2] *I.C.J. Reports 1951*.
[3] 1958 Convention, Art. 4(1).
[4] See fn. at p. 25 above.

a)	Chebba No. 1	35°08′40″	11°12′43″
b)	Maruka	35°01′20″	11°29′11″
c)	El Barani	34°55′21″	11°33′09″
d)	El Mzebla	34°51′27″	11°38′14″
e)	Sakib Hamida No. 1	34°45′17″	11°33′58″
f)	Sakib Hamida No. 2	34°43′48″	11°33′23″
g)	Oued Bou Zrara No. 1	34°42′36″	11°29′03″
h)	Oued Bou Zrara No. 2	34°41′22″	11°26′42″
i)	Oued Mimoun No. 4	34°40′25″	11°19′40″
j)	Oued Saadoun	34°39′10″	11°14′14″
k)	Samoun	34°34′54″	11°03′38″

Significantly, current French marine charts do not even mention beacons (a), (f), (h) or (k). Moreover, not a single base-point upon which the 1973 Tunisian Decree relies is above the sea level at all times. In fact, all such base-points are low tide elevations, the use of which, as base-points, is prohibited by law. For example, Maruka (b) is covered at all times by between 1 and 1.3 metres of water; Barani (c) by between 1.2 and 1.3 metres; Mzebla (d) by between 1.6 and 2 metres; and Sakib Hamida No. 1 (e) by between 0.2 and 1 metre.

134. It may also be added that arguments based upon traditional fisheries or "economic interests" can have no significance because such arguments could at best justify *particular* baselines if a system of straight baselines were *in general* legitimate. However, in the present case, the coast we are concerned with does not conform to the type for which straight baselines are appropriate in general, so that an "economic" justification for particular baselines is in any event irrelevant.

135. The conclusion must be, therefore, that a system of straight baselines is not legally justified on this basis. This is, of course, the conclusion which had previously been reached by Tunisia itself in its 1963 Law[1].

B. The Straight Closing Lines For Bays: Article 7

136. Article 7 of the 1958 Convention and Article 10 of the *ICNT/Rev. 2* are in virtually identical terms. As to the characterization of an indentation as a legal "bay", the rule requires the construction of a semicircle upon a diameter consisting of a line drawn between its "natural entrance points". The Tunisian baseline in fact joins the Island of Djerba and the Kerkennah Islands, and certainly the latter can in no way be considered as a natural entrance point for the Gulf of Gabes[2].

[1] See also fn. at p. 24 above, in which attention is drawn to the fact that for the small area immediately adjacent to the Libyan frontier (from Ras Ajdir west to the Island of Djerba) and for the large area more remote from the area of the Mediterranean under scrutiny in these proceedings (from Ras Kaboudia north to Cape Bon) Tunisia has been content to have its baselines follow the natural coastline.

[2] See para. 78 above.

137. In any event, even where an indentation does qualify as a bay, the maximum permissible length for a closing line is 24 miles: the Tunisian line drawn between the Kerkennah Islands and Djerba purporting to close the so-called "Gulf of Gabes" is some 46 miles in length, and is clearly illegal by reference to the normal rules for bays (as more fully discussed in paragraphs 78 and 79 above).

C. Historic Bays

138. There is no doubt as to the existence of this category of bays *sui generis*. Where a bay falls into this category, the State in effect claims on the basis of a prescriptive right, evidenced by long usage and the acquiescence of other maritime powers, to treat the waters behind the closing line *as internal waters*.

139. The Tunisian assertion of an "historic" title to the "Gulf of Gabes" is, so far as can be ascertained, relatively new although discussion of the status of the Gulf is to be found in academic writings. Gidel, for example, treated the regime of the "Gulf of Gabes" with caution. Although he expressed no doubt as to the nature of the Gulf of Tunis as "eaux historiques[1]", he treated the "Gulf of Gabes" in quite different terms, as a zone of sponge fisheries limited by the 50 metre isobath, and subject to Tunisian jurisdiction[2]. It is apparent that Gidel was fully aware of the difference between a fishery zone, based on proprietary rights in a sedentary species, and a claim to *internal* waters. François, in his Report to the International Law Commission, displayed somewhat less caution in assimilating what he recognized to be a fishing zone with "eaux historiques," although even he noted that the limits of the zone—the 50 metre isobath—were based upon "... l'usage qui était fait de ces eaux[3]." Thus, François saw them essentially as a fishery zone, and his subsequent assertion that Tunisia was entitled to treat the waters as *territorial waters*—a claim never in fact made by Tunisia—shows an unfortunate confusion between three different concepts, namely internal waters (*eaux historiques*), territorial waters, and fishery zones. The difference between a fishery zone on the one hand and both internal and territorial waters on the other hand was quite firmly established in international law. It will be recalled that the compromise formulae at the 1958 and 1960 Geneva Conferences on the Law of the Sea—the various versions of the "six-plus-

[1] Gidel, Gilbert C.: *Le Droit International Public de la Mer. Paris*, 1934. Vol. III, p. 663 (a copy of this page is attached as *Annex I-23*). Strohl, Mitchell P.: *The International Law of Bays*. The Hague, The Netherlands. Martinus Nijhoff, 1963, p. 263 (a copy of this page is attached as *Annex I-24*), misreads Gidel in assuming that Gidel treats the Gulf of Tunis and the Gulf of Gabes on the same basis, as historic waters. The correct view, regarding the zone purely as a fishing zone, is given in Bouchez, Leo J.: *The Regime of Bays in International Law*. Leyden, The Netherlands. A. W. Sythoff-Leyden, 1964, p. 221 (a copy of this page is attached as *Annex I-25*), although even he lapses into confusing recognition of fisheries jurisdiction with recognition of sovereignty.

[2] Gidel, *op. cit.*

[3] *Annuaire de la Commission de Droit International*. Document A/CN. 4/42, 1951; Vol. II, p. 97 (a copy of this page is attached as *Annex I-26*).

six" formula—all depended upon this important distinction. Indeed, Tunisia voted for such a formula[1]. And, as has been seen, the 1962 and 1963 Tunisian Laws proceeded on the same basis, by adopting a clear distinction between the territorial sea and fishery zones beyond the territorial sea[2].

140. As the earlier examination of the Tunisian practice has demonstrated, the most that Tunisia ever claimed in the "Gulf of Gabes" was a property right in certain species of fish, sponges and coral: it was a property right to certain resources *in an area of high seas*. At no stage prior to 1973, did Tunisia claim the "Gulf of Gabes" as territorial waters, let alone internal waters. Indeed, there is no evidence of a Tunisian denial of innocent passage or even a claim that passage existed by right of innocent passage rather than by right of freedom of navigation on the high seas. The 1963 Tunisian Law in fact treated the "Gulf of Gabes" as a contiguous fishery zone, lying beyond the territorial sea.

141. There is, in particular, no evidence of any acquiescence by Libya in the Tunisian claim to treat these large expanses of water as internal Tunisian waters or as territorial waters. On the contrary, when this claim was made manifest in the 1973 Tunisian Law, Libya took the opportunity of reserving its position with regard to the 1973 Tunisian Law, and all its implications, in the discussions between the Parties which were currently being held. This reservation was reiterated by the Libyan Note of 20 January 1979 to Tunisia (attached as *Annex I-27*).

142. The foregoing analysis of the Tunisian version of straight baselines introduced in 1973 clearly establishes those baselines to be contrary to settled rules and principles of international law. It is equally clear that Tunisia's apparent insistence upon strict application of the equidistance method[3] could lead only to wholly inequitable and inappropriate results, as shown by the following Section of this Memorial.

SECTION 3. THE ASSERTED "RULE" OF STRICT EQUIDISTANCE INVOKED BY TUNISIA DURING DISCUSSIONS

A. Legal Principles

143. The exposition of the applicable law and of the equitable principles relevant to a continental shelf delimitation already set forth in Part II above enables this examination of the status of the so-called "rule" of equidistance to be made quite briefly. As this Court has made clear, there is no such mandatory rule in customary international law. Indeed, in the view of the Court of Arbitration, there is no rule of equidistance *per se* even under Article 6 of the 1958 Convention.

[1] *A/CONF. 19/8*, p. 32, 13th Session of the Second United Nations Conference on the Law of the Sea.
[2] See paras. 50 through 53 above.
[3] See paras. 41 and 42 above.

144. In the present case, by the terms of the Special Agreement, the Court is directed to take account of the new accepted trends of the Third Law of the Sea Conference; and in so far as Article 83 of the *ICNT/Rev. 2* reflects these trends there, too, equidistance is not a "rule" but only a method to be applied, where appropriate, to produce a delimitation in accord with equitable principles[1]. There is no question that, as a matter of law, equidistance is simply one possible method of giving effect to equitable principles. In all cases, however, the use of equidistance—whether in strict or "modified" form—is subject to the overriding obligation to reach an equitable result.

145. Whether a result is equitable can only be determined in the circumstances of the particular case. However, both this Court and the Court of Arbitration found utility in the application of the factor—or guide—of "proportionality" as evidence of the equity or inequity of a particular result. The Court referred to the justifiable expectation that there should be—

> "... a reasonable degree of proportionality ... between the extent of the continental shelf [areas] appertaining to the States concerned and the lengths of their respective coastlines ... measured according to their general direction ...[2]".

146. It is difficult, in the face of the relevant circumstances which characterize the general area of concern in this case, to conceive of an appropriately defined or demarked space which, if delimited by the equidistance method, would not allocate to Tunisia a disproportionately large area of the single shelf characterizing this area and which, accordingly, would not encroach upon areas appertaining to Libya upon the basis of settled principles and rules of international law.

147. If, for example, an area were to be hypothetically projected from the two adjacent coasts of Tunisia and Libya and enclosed by a line of latitude from a point on the east-facing portion of the Tunisian coast (say Ras Kaboudia, solely for illustrative purposes) and a line of longitude from any point on the Libyan coast of roughly equal distance from the terminal point of the land boundary between Tunisia and Libya, an equidistance line drawn from Ras Ajdir in such an arbitrarily enclosed area would cut sharply across the Libyan coastal front and produce an area of shelf, attributable to Tunisia, of approximately 42,000 square kilometres, or nearly 70 per cent. of the total area; while the area attributable to Libya would approximate 20,000 square kilometres, or some 30 per cent. of the total[3].

148. On this hypothesis Tunisia would claim, using equidistance on the basis of its 1973 baselines, more than two-thirds of the shelf area (and

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[1] See fn. 2 at p. 35, above and fn. 3 at p. 61 below.
[2] *I.C.J. Reports 1969*, p. 52, para. 98.
[3] In this hypothesis the areas of the Island of Djerba and the Kerkennah Islands (500 sq. km. + 180 sq. km. = 680 sq. km.) are excluded, so that the figures given are of maritime areas exclusively, and the figures are rounded off.

even more than that under the Tunisian claim to the 45°[1] line out to the 50 metre isobath). This analysis may well explain why Tunisia announced a claim based on strict equidistance, made even more inequitable by the 1973 baselines. It goes far to explain, also, why Tunisia lost interest in the idea of joint exploitation of the area, which was discussed between the Parties during the period from 1972 to 1975.

149. Nor does the inequity of the equidistance method arise only when the Tunisian 1973 baselines are posited. Even when one sets aside the 1973 baselines and draws the equidistance line from the Island of Djerba and the Kerkennah Islands the result remains grossly inequitable. These islands, projecting from the coast, distort the broadly equal lengths of the two coastlines, thus producing a corresponding distortion in the equidistance line. The inequity is only marginally abated if the Kerkennah Islands are ignored as basepoints and equidistance is measured from the mainland coasts. Tunisia then would claim 62 per cent. of the shelf area on the foregoing hypothesis. It will be seen, therefore, that any of these accidental and incidental coastal configurations are such as to create results grossly inequitable to Libya once the equidistance method is used. In the next Section we shall examine in detail the geographical features which produce this inequity, such as the sloping away of the Libyan coast to the east, the concavity of the Gulf of Gabes and the convexity of the Tunisian mainland in the Ras Kaboudia area. It is precisely such "relevant circumstances which characterize the area" in terms of Article 1 of the Special Agreement that should be taken into account by the Court in rendering judgment and in the contention of Libya would eliminate application of the equidistance method as inequitable and inappropriate.

150. Although comparative figures—being based upon hypothesis—are necessarily approximate and conjectural, they tend to support the uncontrovertible factual evidence and applicable legal principles which clearly demonstrate the inequitable and inappropriate results of the equidistance method, while, at the same time, confirming the validity and fairness of the method reflecting the direction of the prolongation northward of the terminal point of the land boundary between Tunisia and Libya.

151. It will also be apparent that in demonstrating any such hypothesis comparing the areas of continental shelf attributable to the two adjacent States, the entire area of seabed and subsoil beyond the low-water mark must be taken into account. The 1963 Tunisian Law (referred to in paragraph 51 above), with the exception of its treatment of the Gulf of Tunis, correctly took the normal low-water mark as baselines for the territorial sea. The continental shelf, likewise, must be regarded as embracing the entire seabed area beyond the low-tide mark along the

[1] See fn. at p. 18 above.

coast of the landmass. This conclusion is compelled by the Court's concept of the shelf as the "... natural prolongation of [the] land territory into and under the sea ...[1]".

152. Moreover, this view is supported by a number of cogent, practical considerations: First, the inclusion of the area of the territorial sea avoids the difficulties of making the comparisons required by equity in cases where two States adopt different breadths of territorial sea. Second, and on similar reasoning, the area must be measured from the mainland low-tide mark so as to avoid a distortion of any comparison due to the fact that one State adopts a system of straight baselines, or closing lines across bays, which may be highly controversial and which would tend to exclude large areas of seabed from the comparison.

153. This is not to dispute the importance of baselines, or the limits of the territorial sea, for jurisdictional purposes. The concept that the continental shelf extends beyond the limits of territorial sea is important in a jurisdictional sense because of the full sovereignty which the coastal State exercises in the territorial sea[2] as compared with the limited sovereign rights of the coastal State over the soil and subsoil of its continental shelf[3]. However, present considerations are concerned not with the general question of jurisdiction but with the proposition that, for purposes of effecting an equitable comparison, the entire area must be considered and not simply that part which is artificially separated by either baselines or the limits of the territorial sea.

B. Relevant Circumstances Characterizing the Area and Making an Equidistance Line Inequitable

154. As both this Court and the Court of Arbitration have stated, what is an equitable delimitation must be determined in the light of all the relevant circumstances[3].

155. In the *North Sea Continental Shelf Cases* this Court established as factors relevant to an equitable delimitation—

> "... the general configuration of the coasts of the Parties, as well as the presence of any special or unusual features; [and] ... the physical and geological structure, and natural resources, of the continental shelf areas involved ...[4]".

In referring to natural resources the Court was apparently primarily concerned with the situation where "... the same deposit lies on both sides of

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[1] *I.C.J. Reports 1969*, p. 53, para. 101(C)(1) [*dispositif*].
[2] *ICNT/Rev.2.*, Art. 2.
[3] *Ibid.*, Art. 77.
[3] *I.C.J. Reports 1969*, p. 53, para. 101 (C)(1); *Anglo-French Arbitration*, (Cmnd. 7438.), p. 59, para. 97. See also Art. 83 of *ICNT/ Rev. 2* which contains the following phrase: "... taking account of all the circumstances prevailing in the area concerned." In this connection, see fn. 1 at p. 4 and fn. 2 at p. 35 above.
[4] *I.C.J. Reports 1969*, p. 54, para. 101 (D)(1) and (2) [*dispositif*].

the line dividing a continental shelf between two States ...", in which event this unity of deposit of resources constitutes "... a factual element which it is reasonable to take into consideration in the course of the negotiations for a delimitation[1]."

156. In the same vein the Court of Arbitration emphasized the need to determine "... the geographical and legal framework for its decision ...[2]" and stated that—

> "... the validity of the equidistance method, or of any other method, as a means of achieving an equitable delimitation of the continental shelf is always relative to the particular geographical situation[3]."

157. It is therefore necessary to identify those features of the area, both geographical and geological, which produce the disproportionate results illustrated by the hypothesis set out above.

C. Anomaly of the East-Facing Tunisian Coast in Relation to the Predominantly North-Facing North African Coast

158. As described in paragraph 69 above, the coast of North Africa, from the Suez Canal to the Strait of Gibraltar, is predominantly north-facing. It has also been shown in the geological Study attached as *Annex II* and summarized in paragraphs 61 through 68 above that the North African coast portrayed by *Map No. 2* (facing page 12 above) has its natural prolongation to the north, in the Mediterranean. That portion of the Tunisian coast which faces east is an anomaly and runs counter both to these general geographical and geological trends and to the generally north-facing direction of the extensive southern sector of the Tunisian coast itself.

159. The result is that an equidistance line projected from the terminal point of the land boundary between Tunisia and Libya produces a line which cuts diagonally across the natural prolongation of Libya. This can (43) be seen from *Map No. 8* (facing page 54 above). Such a result obviously transgresses the fundamental requirement that delimitation should—

> "... leave as much as possible to each Party all those parts of the continental shelf that constitute a natural prolongation of its land territory into and under the sea, without encroachment on the natural prolongation of the land territory of the other ...[4]".

D. Geographical Relationship of Tunisia and Libya as "Adjacent" States

160. Both this Court and the Court of Arbitration have drawn attention to the fact that an equidistance boundary is more susceptible to distortion by coastal irregularities when drawn between adjacent States

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[1] *I.C.J. Reports 1969*, pp. 51 and 52, para. 97.
[2] *Anglo-French Arbitration*, (Cmnd. 7438.), p. 88, para. 181.
[3] *Ibid.*, p. 54, para. 84.
[4] *I.C.J. Reports 1969*, p. 53, para. 101(C)(1) [*dispositif*].

than between opposite States[1]. In the case of opposite States, coastal irregularity will control the median line over a relatively short distance simply because other points on the coastline will take over as controlling points. However, in the case of lateral boundary delimitations between adjacent States, exceptional configurations such as promontories or offshore islands will often control the direction of an equidistance line over great distances.

161. So it is in the present case. First, the Island of Djerba, jutting abruptly out from the coastline, swings the equidistance line in a marked northeasterly direction. Then the Kerkennah Islands take over the control of the line, causing an even more marked deviation eastwards. These island features might well, in any geographical situation, call for some abatement of their effect in equity. But in a situation of adjacent States the distortion which they produce is more exaggerated and this highly relevant circumstance must be taken into account in any equitable delimitation.

E. Special Geographical Features of the Respective Coastlines

162. Although the coast of Libya is devoid of any marked irregularities, it has one pronounced feature—from the terminal point of the Libyan/Tunisian boundary at Ras Ajdir, it falls away to the east of Ras Ajdir in a southeasterly inclination over a distance of 125 nautical miles. This feature has the effect of pulling back any strict equidistance line upon itself. Clearly, this operates to the disadvantage of Libya.

163. The Tunisian coastline has four special features, which will be examined in turn. (See *Map No. 2* facing page 12 above.)

(i) *Island of Djerba*

164. First, there is the Island of Djerba. Its abrupt protuberance begins to control the equidistance boundary some 38 nautical miles out from Ras Ajdir, and Ras Turgueness, the most easterly point on this island, remains the controlling point over the equidistance boundary for some 64 nautical miles, until the control point switches to the Kerkennah Islands. The effect of the Island of Djerba is to distort the equidistance line even further, by accentuating the easterly swing of the line across the front of the Libyan coast.

(ii) *Gulf of Gabes*

165. The second special feature is the Gulf of Gabes, a highly concave indentation. Against the background of the *North Sea Continental Shelf Cases* one is inclined to think of a concave coast as a feature operating to the disadvantage of the coastal State. In the present case this is not so,

[1] *I.C.J. Reports 1969*, pp. 36 and 37, paras. 57 through 59; *Anglo-French Arbitration*, (Cmnd. 7438.), p. 112, para. 239.

since the coastal State with the concave coast here benefits from substantial extensions of its coastline to the east and to the north of such concavity. It is essential to note that the Gulf of Gabes has no effect on the equidistance boundary. In other words, the control of the line shifts from the Island of Djerba to the Kerkennah Islands; and at no point on the equidistance line is that line influenced in any way by any part of the coastline in the Gulf of Gabes. It may be added, in passing, that what Tunisia has sought to achieve by the 1973 baseline across the "Gulf of Gabes[1]" is a fictional shift eastwards of the Tunisian coast—by a distance of 51 nautical miles at the point of greatest concavity of the "Gulf of Gabes"—so as to make this fictional location of the coast of the "Gulf of Gabes" influence the equidistance line. But the true coast of the Gulf has no influence at all.

(iii) *Kerkennah Islands*

166. The third outstanding feature of the coast is the Kerkennah Islands. These are two islands, of minimal size (180 square kilometres), and lying at an average distance of 15 nautical miles from the mainland. It is these islands which begin to control the equidistance line at a point 33° 57′ N, 12° 04′ E, and they control the line thereafter. As drawn from the 1973 Tunisian baselines around the islands, on the basis of the area hypothesized in paragraph 147 above, the Tunisian-claimed equidistance line attracts to Tunisia some 1,936 square kilometres of continental shelf by virtue of these two small islands of 180 square kilometres, as compared with an equidistance line drawn from the low-water mark off the Tunisian mainland coast. These figures highlight the inequity of the Tunisian equidistance claim and the baselines upon which it is predicated.

(iv) *Ras Kaboudia Promontory*

167. The fourth special feature of the Tunisian coast is the promontory at Ras Kaboudia. North of Sfax, the coast inclines gradually northeastwards until it reaches Ras Kaboudia. In practice, of course, so long as the Kerkennah Islands are allowed to control the equidistance line the promontory at Ras Kaboudia has no effect on the line. However, it should be made clear that, even disregarding totally the Kerkennah Islands, the promontory at Ras Kaboudia would influence the equidistance line in an inequitable way. The general direction, north/south, of the Tunisian coast might be said to lie along the line of 10° 43′ E; this would allow for treating the Gulf of Gabes and the Gulf of Hammamet as indentations, and the projections at Cape Bon and Ras Kaboudia as promontories. By reference to such a general line of direction for the Tunisian coast, Ras Kaboudia would lie some 22 nautical miles *east* of the line of general direction of the coast. Thus, even Ras Kaboudia can be described as a special feature, capable of influencing the equidistance line in an inequitable manner, should the equidistance line be measured from the coast rather than from the offshore Kerkennah Islands.

[1] See fn. 3 at p. 23 above.

F. Legal Principles Relating to Special Geographical Features

168. The law concerning such special geographical features is, in principle, tolerably clear. Bearing in mind the fact that the Island of Djerba and the Kerkennah Islands produce what is in effect a convexity in the Tunisian coastline, the following dictum of this Court is highly relevant:

> "The slightest irregularity in a coastline is automatically magnified by the equidistance line as regards the consequences for the delimitation of the continental shelf. Thus it has been seen in the case of concave or convex coastlines that if the equidistance method is employed, then the greater the irregularity and the further from the coastline the area to be delimited, the more unreasonable are the results produced. So great an exaggeration of the consequences of a natural geographical feature must be remedied or compensated for as far as possible, being of itself creative of inequity[1]."

169. It may also be recalled that the Court of Arbitration saw the Cornish peninsula and the offshore Scilly Isles as, in effect, a promontory which produced an inequitable result in the equidistance line. The analogy with the promontory of Ras Kaboudia and the Kerkennah Islands is so striking that special attention of the Court is respectfully directed to paragraph 244 at page 114 of the *Anglo-French Arbitration*[2].

170. State practice readily confirms the validity of the reasoning in the passage mentioned in the preceding paragraph. States have recognized the inequity of allowing full effect, for equidistance purposes, to promontories or islands which distort the general relationship of two coasts and, as such, have agreed to abate or modify that distortion.

171. For example, the Indonesian/Malaysian Agreement of 27 October 1969[3] provides for a boundary between the adjacent territories of Indonesia (Borneo) and Malaysia (Sarawak) where, offshore, a group of Indonesian islands—the Kepulauan Natuna Selatan and Kepulauan Natuna Utara—are so situated that, had they been given full effect, they would have shifted the equidistance line eastwards. That result was avoided. Even though the islands are large and lie behind a system of straight baselines, their effect was modified on the general principle that their effect decreased with their distance offshore. The furthest islands had little more than half effect[4].

172. The Agreement of 20 March 1969 between Abu Dhabi and Qatar[5] virtually ignores the Abu Dhabi island of Dayyinah for purposes of the modified equidistance boundary, allowing to the island no more than a

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[1] *I.C.J. Reports 1969*, p. 49, para. 89(*a*).
[2] *Anglo-French Arbitration*, (Cmnd. 7438.), p. 114, para. 244.
[3] *I.B.S. (Limits in the Seas)*, Series A, No. 1, 21 Jan. 1970. See para. 107 above.
[4] See the calculations of Hodgson, Robert D.: "*Islands: Normal and Special Circumstances*", Bureau of Intelligence and Research, United States Department of State, Washington, D. C., RGES-3, 10 Dec. 1973.
[5] *I.B.S.* (*Limits in the Seas*), Series A, No. 18, 29 May 1970.

three-mile arc of territorial sea to cause a "bulge" in the boundary line. The Italo/Tunisian Agreement of 1971[1] is itself an agreement between opposite, not adjacent, States, but it substantially modifies "equidistance" (indeed virtually abandons equidistance) in relation to the Italian islands of Lampedusa, Lampione, and Linosa (although those islands, of course, are in the category of islands more proximate to another State's mainland coast).

173. The Colombia/Ecuador Agreement of 23 August 1975[2] is a lateral boundary of considerable interest because, though not influenced by offshore islands, it demonstrates two adjoining coasts where the one (the Colombian) falls away to the north, whereas the other (Ecuadorian) protrudes outwards to the promontory of Punta Galera. It is in a real sense comparable to the situation of the Libyan coast falling away to the southeast, and the Tunisian coast moving outwards to the island, or promontory, of Djerba: the axis is north/south rather than east/west, but otherwise the broad effect is the same. The agreed Colombia/Ecuador boundary is in no sense an equidistance boundary. Such a boundary would have been inclined sharply northwards by the combined effect of the falling-back of the Colombian coast and the protuberance of Punta Galera. Instead, the parties agreed on a lateral boundary along the line of latitude from the land boundary terminal[3].

174. It should therefore be apparent why Libya has been unable to accept Tunisian claims thus far advanced. These begin with a claimed maritime boundary (the 43° 21′ or 45° line[4]) for which there is no legal basis; they proceed by pretensions resting upon baselines unilaterally announced in 1973, which are totally devoid of legal foundation; and, finally, they cap the scheme with insistence upon application of the equidistance method to a geographical situation predetermined to produce a grossly inequitable and wholly inappropriate result.

175. All these claims, moreover, have been advanced in the face of geological and geomorphological factors, together with geographic configurational features, which establish that the continental shelf concerned off the coast of North Africa is a prolongation to the north of the continental landmass, and hence that the most appropriate and equitable method of delimitation is one which would reflect the northward direction of the terminal point of the land boundary between Tunisia and Libya.

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[1] *Limits in the Seas*, No. 89, 7 Jan. 1980. This Agreement is understood by Libya to have been ratified recently, but insofar as it may constitute an agreed delimitation by Italy and Tunisia of areas of shelf which may by law belong to Libya, Libya reserves its position.
[2] *Limits in the Seas*, No. 69, 1 Apr. 1976.
[3] See reduced map, para. 118 above.
[4] See fn. at p. 18 above.

PART IV

SUMMARY

176. In this case the Parties seek the guidance of the Court on the principles and rules of international law to be applied to the delimitation of the areas of continental shelf appertaining to each of them because, in their discussions, they were unable to agree on what were the relevant principles and rules.

177. The differences between the Parties, as revealed during their discussions, are not only on issues of law, but also on issues of fact.

178. So far as Libya is concerned, the overriding principle of law, as laid down by the Court itself, is that the area of shelf which constitutes the natural prolongation of Libyan territory appertains to Libya *ipso jure* and *ab initio*. The same principle applies to Tunisia. All the evidence—geological, geomorphological and geographical—points inescapably to the conclusion that the shelf off the North African coast concerned is a projection *to the north* of the land territory. This remains true in the area off either the Tunisian or the Libyan coasts, and has been so demonstrated in this Memorial. It therefore follows that the Parties must respect the physical facts and adopt a boundary which projects in a northerly direction from the terminal point of the land boundary at Ras Ajdir. In so doing, they will produce an equitable result because it is a result which respects the inherent title, the *ipso jure* rights, of each State. Moreover any other method of delimitation proves, on examination, to be inequitable in its result.

179. The Tunisian approach apparently is quite different in that it seeks to set aside the cardinal principle of natural prolongation and to elevate into an absolute principle what is in fact no more than a *method* of delimitation—that is the method of equidistance. Moreover, this is a method which in the particular circumstance is inequitable in its result. The method is inequitable not only because it ignores the *ipso jure* title of Libya, but because it cannot, in the particular geographical configuration of the two coasts, produce an equitable result. That would be true of any application of the equidistance method in the present case. The inequity of the actual method proposed by Tunisia is compounded by the Tunisian reliance on baselines which are indefensible, and on basepoints such as offshore islands and promontories which aggravate the distortion caused by an equidistance line drawn between coasts at right angles.

180. The differences between the Parties are therefore, in the view of Libya, quite fundamental and can only be resolved on the basis of the authoritative guidance of the Court.

SUBMISSIONS

In view of the facts set forth in Part I of this Memorial, the statement of the law contained in Part II, and the arguments applying the law to the facts as stated in Part III of this Memorial;

Considering that the Special Agreement between the Parties requests the Court to render its judgment as to what principles and rules of international law may be applied for the delimitation of the area of the continental shelf appertaining to the Socialist People's Libyan Arab Jamahiriya and to the area of the continental shelf appertaining to the Republic of Tunisia, and requests the Court to take its decision according to equitable principles, and the relevant circumstances which characterize the area, as well as the new accepted trends in the Third Conference on the Law of the Sea;

May it please the Court, on behalf of the Socialist People's Libyan Arab Jamahiriya, to adjudge and declare:

1. The concept of the continental shelf as the natural prolongation of the land territory into and under the sea is fundamental to the juridical concept of the continental shelf and a State is entitled *ipso facto* and *ab initio* to the continental shelf which is the natural prolongation of its land territory into and under the sea.

2. Any delimitation should leave as much as possible to each Party all those parts of the continental shelf that constitute such a natural prolongation.

3. A delimitation which gives effect to the principle of natural prolongation is one which respects the inherent *ipso jure* rights of each State, and the assertion of such rights is therefore in accordance with equitable principles.

4. The direction of natural prolongation is determined by the general geological and geographical relationship of the continental shelf to the continental landmass, and not by the incidental or accidental direction of any particular part of the coast.

5. In the present case the continental shelf off the coast of North Africa is a prolongation to the north of the continental landmass, and therefore the appropriate method of delimitation of the areas of continental shelf appertaining to each Party in this specific situation is to reflect the direction of this prolongation northward of the terminal point of the land boundary.

6. Application of the equidistance method is not obligatory on the Parties either by treaty or as a rule of customary international law.

7. Whether the application of a particular method of delimitation is in accordance with equitable principles is to be tested by its results.

8. The equidistance method is in itself neither a "rule" nor a "principle" and is not necessarily "equitable" since its application under particular circumstances may lead to inequitable results.

9. A principle or method of delimitation which disregards the *ipso jure* title of a coastal State to the continental shelf constituting the natural prolongation of its land territory is, *ipso facto*, illegal and necessarily inequitable.

10. In the present case, given the particular geographical configuration, the equidistance method would result in a delimitation of the continental shelf which would be inequitable, inappropriate, and not in conformity with international law.

11. The baselines promulgated by Tunisia in 1973 are not opposable to Libya for the purposes of the delimitation and the results of giving effect to them would in any event be inappropriate and inequitable.

12. For the purpose of achieving an equitable delimitation, the whole of the seabed and subsoil beyond the low-water mark along the coast of each Party is to be taken into account.

(*Signed*) _____

KAMEL H. EL MAGHUR
Agent of the Socialist People's Libyan Arab Jamahiriya.

ANNEXES TO THE MEMORIAL OF THE LIBYAN ARAB JAMAHIRIYA

ANNEX I

DOCUMENTS

Annex I-1

LETTER DATED 14 FEBRUARY 1979 FROM THE SECRETARY FOR FOREIGN AFFAIRS OF THE SOCIALIST PEOPLE'S LIBYAN ARAB JAMAHIRIYA TO THE REGISTRAR OF THE INTERNATIONAL COURT OF JUSTICE, THE HAGUE

COPY OF THE SPECIAL AGREEMENT IN ARABIC

TRANSLATION OF THE SPECIAL AGREEMENT INTO ENGLISH CERTIFIED AS ACCURATE

[See Special Agreement, pp. 21-27, supra*]*

Annex I-2

COPY OF THE FRENCH TRANSLATION OF THE SPECIAL AGREEMENT AS SUBMITTED TO THE REGISTRAR BY THE TUNISIAN MINISTER FOR FOREIGN AFFAIRS

[See Special Agreement, pp. 9-10, supra*]*

Annex I-3

TEXT OF THE 1910 CONVENTION OF DELIMITATION BETWEEN TUNISIA AND TRIPOLITANIA

[See Memorial of Tunisia, Annex 94, supra*]*

Annex I-4

PAGE 141 OF
IAN BROWNLIE, *AFRICAN BOUNDARIES*, LONDON, C. HURST AND CO., 1979

[Not reproduced]

Annex I-5

PAGE 374 OF
ANDRÉ MARTEL, *LES CONFINS SAHARO-TRIPOLITAINS DE LA TUNISIE*, TOME I, PARIS, PRESSES UNIVERSITAIRES DE FRANCE, 1965

[Not reproduced]

Annex I-6

"NORTHERN AFRICA", PHOTOGRAPHIC COPY OF A MAP PUBLISHED IN LONDON (1814), APPEARING IN PINKERTON'S MODERN ATLAS ; "MITTEL- UND NORD-AFRICA UND ARABIEN – WESTLICHES BLATT" (1830) AND "MITTEL- UND NORD-AFRICA – WESTL. THEIL" (1867), PHOTOCOPIES OF GERMAN MAPS APPEARING IN *STIELER'S HANDATLAS*

[Not reproduced]

Annex I-7

MAP ATTACHED TO THE 1910 CONVENTION ON DELIMITATION BETWEEN TUNISIA AND TRIPOLITANIA

[Not reproduced. For a portion of this map, see Memorial of the Libyan Arab Jamahiriya, p. 14, supra*]*

Annex I-8

PAGES 1 AND 2 OF
INTERNATIONAL BOUNDARY STUDY : LIBYA-TUNISIA BOUNDARY, WASHINGTON, DC, OFFICE OF THE GEOGRAPHER, US DEPARTMENT OF STATE, NO. 121

[Not reproduced]

Annex I-9

A

ARABIC TEXT OF 1955 LIBYAN PETROLEUM LAW NO. 25

[Not reproduced]

B

ENGLISH TEXT OF ARTICLES 1 THROUGH 9 (8), 10, 19, 23 AND 24 OF LIBYAN PETROLEUM LAW NO. 25

The Senate and the House of Representatives have passed the following law, which,

We, *Idris the First*, King of the United Kingdom of Libya have sanctioned and do hereby promulgate :

Article 1

Petroleum Property of State

(1) All petroleum in Libya in its natural state in strata is the property of the Libyan State.

(2) No person shall explore or prospect for, mine or produce petroleum in any part of Libya, unless authorized by a permit or concession issued under this law.

Article 2

Establishment of Petroleum Commission

(1) There is hereby established a public autonomous juridical Petroleum Commission, having a separate budget annexed to the budget of the appropriate Ministry, which shall consist of a Chairman and at least three other members to be appointed and removed from office by decree on the submission of the Prime Minister with the agreement of the appropriate provincial authorities. A representative appointed by the Minister may attend meetings of the Commission, but shall have no vote in the proceedings.

(2) Members of the Commission shall, as far as possible, be persons of experience in finance, economics, commerce, law or engineering. No Minister, Nazir or Member of Parliament or of any Legislative Assembly shall be appointed to the Commission and any member who is elected or appointed to one of these posts shall immediately cease to be a member of the Commission.

(3) The Commission shall, in the name of each and every province, be responsible for the implementation of the provisions of this law under the supervision of the Minister.

(4) All decisions in respect of the grant, assignment, renewal, surrender or revocation of any permit or concession under this law shall be made by the Commission and shall be immendiately submitted to the Minister for approval or rejection. All decisions of the Minister and of the Commission shall be notified in writing without delay to all interested parties.

(5) The Commission shall determine its own rules of procedure which shall provide that the quorum shall consist of three-quarters of its members, that its decisions shall be by a two-thirds majority vote of those present at any meeting and that in case of an equal division the Chairman shall have a casting vote.

(6) The Commission shall appoint a Director of Petroleum Affairs (hereinafter called "the Director") who shall carry out such duties as are assigned to him under this law and the two schedules hereto and such other duties as may be assigned to him by regulations issued under this law or by the Commission. The Commission shall also appoint such other officials as may be necessary.

(7) All expenditures approved by the Government and incurred by the Commission including the remuneration of its members and staff shall be paid out of the federal budget.

Article 3

Petroleum Zones

For the purposes of this law, the territory of Libya shall be divided into four petroleum zones :

the First Zone shall consist of the province of Tripolitania ;

the Second Zone shall consist of that part of the province of Cyrenaica which lies north of the 28th parallel of latitude ;

the Third Zone shall consist of that part of the province of Cyrenaica which lies south of the 28th parallel of latitude ;

the Fourth Zone shall consist of the province of the Fezzan.

Article 4

Boundaries

(1) This law shall extend to the sea-bed and subsoil which lie beneath the territorial waters and the high seas contiguous thereto under the control and jurisdiction of the United Kingdom of Libya. Any such sea-bed and subsoil adjacent to any Zone shall for the purposes of this law be deemed to be part of that Zone.

(2) If there is doubt as to the boundary of any Zone the Commission shall determine the boundary of such Zone for the purposes of this law only ; and if by reason of such determination it becomes necessary for the applicant to amend his application, or to make a new application, he shall be allowed one month to do so after receipt of a request so to do, without loss of priority.

(3) If a subsequent determination of the boundaries leads to an adjustment of the boundaries as determined by the Commission, such adjustment shall not affect the validity or extent of permits or concessions granted within the area or areas affected by the adjustment.

Article 5

Eligible Applicants

(1) The Commission shall consider applications for permits or concessions submitted by eligible applicants only, and in determining the eligibility of any applicant, the Commission shall have regard to the following :

(a) the furtherance of the public interest ;

(b) (i) the applicant's compliance with relevant laws and regulations ;

(ii) his previous activities in the petroleum industry ;
(iii) his previous experience in the conduct of similar operations ;
(iv) his financial and technical capacity to conduct the contemplated operations.

(2) In determining the eligibility of an applicant who is a subsidiary of a company or a member of a group of companies, there shall be taken into consideration the possession of the aforesaid qualifications by the parent company or group of companies of which he is a member and the extent of the availability to the applicant of such qualifications.

Article 6

Permits

(1) Applications for permits shall be submitted in triplicate to the Commission which shall forward a copy to the Minister. Separate applications shall be submitted in respect to each petroleum zone.

(2) The applications shall show the area the applicant desires to work, and contain short particulars in respect of the matters referred to in Article 5 of this law. The applicant shall, at the Commission's request, furnish any further relevant information. All information submitted under this paragraph shall be treated as confidential.

(3) The Commission may grant a permit in the form set out in the first schedule to this law and not otherwise, provided that the permit may contain such minor non-discriminatory variations as may be required to meet the circumstances of any particular case.

(4) Such a permit may be granted in respect of any area and shall entitle the holder thereof to carry out the operations permitted therein within the specified area and in accordance with the terms of the permit ; provided, however, that nothing in this paragraph shall entitle the holder of the permit to impede in any way the work of any concession holder, or to enter into prospecting and development sites without the express permission of the concession holder.

(5) The grant of a permit does not of itself entitle the holder thereof to a concession in respect of any area.

(6) A permit shall be granted on payment of the fee specified in the first schedule hereto.

(7) A permit may be granted for a period of one year and may be renewed on payment of the specified fee.

Article 7

Applications for Concessions

(1) Applications for concessions shall be submitted in triplicate to the Commission which shall forward a copy thereof to the Minister.

(2) The application shall show by reference to the official map of the Commission the area the applicant desires to work, which area shall conform as far as possible to the grid lines of the official map of the Commission and shall contain short particulars in respect of the matters referred to in Article 5 of this law. The applicant shall, at the Commission's request, furnish any further relevant information. All information submitted under this paragraph shall be treated as confidential.

(3) No single application shall relate to more than one petroleum zone.

Article 8

Conflicting Applications

(1) If more than one person submit applications for concessions over areas which overlap in whole or in part, preference shall be given to the first person to apply to the Commission, provided that the following applications shall be deemed to be simultaneous :

(a) all applications for concessions received by the Commission before midnight of the seventh day after the coming into force of this law ;

(b) thereafter all applications submitted on the same day.

(2) All simultaneous applications for concessions over areas which overlap in whole or in part shall be dealt with as follows :

(a) the Commission shall call together the representatives of the applicants and invite them to settle their conflicting applications between themselves within thirty days or such longer period as the Commission may deem necessary and to amend their applications accordingly within the same period. Applications may be amended by the addition of other areas provided that the maximum area permitted under this law is not exceeded but such additional areas may not overlap any area then included in any application submitted simultaneously with the original application. Any amended applications shall be deemed to have been submitted on the date of the original application ;

(b) if the applicants fail to agree, the Commission shall mediate between them and in the course of the mediation, the applicants and the Commission shall together consider all methods of settlement proposed by each of them ;

(c) in order to facilitate settlement under this paragraph, the Commission shall, subject to Article 2 (4) of this law, allow without delay an increase in the maximum number of concessions unless this is contrary to the public interest ;

(d) if an agreement by mediation cannot be reached, the Commission may either require the applicants to pool the overlapping area or areas, divide the overlapping area or areas into blocks and distribute such blocks by lot, or may adopt such objective solution as it deems appropriate.

Article 9

Grant of Concessions

(1) The Commission may grant concessions in the form set out in the second schedule to this law and not otherwise, provided that they may contain such minor non-discriminatory variations as may be required to meet the circumstances of any particular case.

(2) Before the grant of a concession, the Commission may require the applicant to furnish a written undertaking to abstain from all political activity in Libya.

(3) An applicant may be required before the grant of a concession to deliver to the Commission a guarantee by way of bond or banker's guarantee in a sufficient sum not exceeding fifty thousand Libyan pounds (£L50,000) to secure the due performance of his obligations under all concessions held by him in Libya. Such bond or banker's guarantee shall be maintained at a constant figure throughout the life of the concession, and such bond or banker's guarantee shall be accepted by the Director of Customs in lieu of any bond he may require under the customs law.

(4) Concession shall be granted for the period of time requested by the applicant provided that such period shall not exceed fifty (50) years. A concession may be renewed for any period such that the total of the two periods does not exceed sixty (60) years.

(5) No concession may be granted in respect of any area included in any existing concession granted hereunder.

(6) The Commission may however grant concessions covering adjoining areas lying in two or more zones.

(7) The boundaries of every concession granted hereunder shall conform as far as possible to the grid lines of the official map of the Commission.

(8) The maximum number of concessions and the total areas which may be held at one time by any person are as follows :

(a) three concessions in each of the First and Second Zones and four concessions in each of the Third and Fourth Zones provided that :

(i) the Commission may grant concessions in excess of the maximum number permitted hereunder and shall give reasonable consideration to applications submitted for that purpose ;

(ii) no concession in which there is an oil or gas well shall be included in computing the number of concessions held by a concession holder ;

(b) 30,000 square kilometres in each of the First and Second Zones and 80,000 square kilometres in each of the Third and Fourth Zones.

. . . . . .

Article 10

Surrender

(1) Within a period of five years from the date of a concession, the concession holder shall reduce the concession area to 75 per cent of its original size ; within eight years from the said date, the concession holder shall further reduce the concession area to 50 per cent of its original size and within ten years from the said date the concession holder shall further reduce the concession area to 33⅓ per cent of its original size in the case of areas located in the First and Second Zones and to 25 per cent of its original size in the case of areas located in the Third and Fourth Zones, provided however that in no case shall the concession holder be required at any time to reduce the concession area to less than 3,000 square kilometres each in the First and Second Zones and to less than 5,000 square kilometres each in the Third and Fourth Zones.

(2) The concession holder shall be entitled at any time, by giving three months' notice in writing to the Commission to surrender the whole or any part of a concession area.

(3) The areas which the concession holder gives up under paragraphs (1) and (2) shall be freely chosen by the concession holder in one or more blocks provided that the block or blocks retained by the concession holder shall each be reasonably compact and be bounded as far as possible by the grid lines of the official map of the Commission. The concession holder shall continue to enjoy the full rights granted to him under the respective concession contract over the areas retained by him.

(4) Notice of surrender shall be accompanied by a map referring to the official map of the Commission and a description indicating the precise extent of the land surrendered and the land retained.

(5) The concession holder shall in respect of any lands he gives up as aforesaid, except as provided in Clause 26 of the Second Schedule to this law, cease to enjoy any of the rights conferred upon him by the concession and to bear any of the responsibilities thereby imposed upon him except as may relate to the action of the concession holder in the said lands before they were given up, without prejudice to the rights of the concession holder to the easements he may exercise over the surrendered areas.

. . . . . .

Article 19

Publication

Notice of the grant, renewal, assignment, revocation, termination or surrender of the whole or any part of any permit or concession shall be published in the *Official Gazette* of the United Kingdom of Libya and of the appropriate province.

. . . . . .

Article 23

Definitions

In this law :

"Minister" means the appropiate Minister ;

"permit" means a preliminary reconnaissance permit issued under this law ;

"concession" means a petroleum prospecting, mining and producing concession issued under this law ;

"person" includes any body corporate or other juridical person ;

"oil or gas well" means a well capable of producing oil and/or gas in quantities susceptible of measurements ;

"petroleum" means all natural hydrocarbons, liquid or gaseous, produced or producible from the ground and all asphalt and other solid hydrocarbons suitable for the production of liquid petroleum or gas. Petroleum does not include coal ;

"direct control" means the control of any company exercised by any other company or companies holding shares carrying a majority of votes at a general meeting of the first-mentioned company ;

"indirect control" means the control of any company (hereinafter in this subparagraph called "the particular company") exercised by any other company or companies (hereinafter in this subparagraph called "the parent company or companies") where a series of companies can be specified, beginning with the parent company or companies and ending with the particular company, in which each company of the series, except the parent company or companies, is directly controlled by one or more of the companies in the series ;

"year" means a calendar year according to the Gregorian calendar ;

"barrel" means forty-two (42) gallons US or 158.984 litres of liquid petroleum ;

"processing" means any operation connected with the treatment of petroleum with the exception of fractional distillation.

Article 24

Regulations

The Commission shall prepare such regulations as may be necessary for the implementation of this law, including regulations for the safe and efficient performance of operations carried out under this law, and for the conservation of the petroleum resources of Libya, and shall submit such regulations to the Minister for approval and promulgation provided that no regulation or alteration thereof shall be contrary to or inconsistent with the provisions of this law or adversely affect the contractual rights expressly granted under any permit or concession in existence at the time the regulation is made or altered.

C

ARABIC TEXT OF 1955 LIBYAN PETROLEUM REGULATION NO. 1

[Not reproduced. For the map, see Memorial of the Libyan Arab Jamahiriya, p. 16, supra*]*

D

ENGLISH TEXT OF ARTICLES 1 THROUGH 6 OF 1955 LIBYAN PETROLEUM REGULATION NO. 1

The Minister of National Economics,

Having seen Article 24 of the Petroleum Law No. 25 of 1955,

And acting on what has been submitted to him by the Petroleum Commission,

Promulgates the following regulation :

PART I

Article 1

There shall be an official map of Libya for the purposes of the Petroleum Law 1955 to a scale of 1:2,000,000 called Map No. 1, which is attached as the First Schedule hereto. On this map the international frontiers, Petroleum Zones and the grid shall be indicated.

Article 2

For all purposes of the Petroleum Law No. 25 of 1955 and the regulations issued thereunder the Petroleum Zones shall be as follows :

The First Zone – consists of the province of Tripolitania bounded on the North by the limits of territorial waters and high seas contiguous thereto under the control and jurisdiction of the United Kingdom of Libya, and on the east by 18° 50′ longitude until it intersects the coast line, thence in a straight line running in a South-Easterly direction to the point where 30° latitude intersects 19° 5′ longitude, thence in a straight line running in a South-Westerly direction to a point where 18° 30′ longitude intersects 29° 40′ latitude, thence directly south

along 18° 30′ longitude to the intersection with 28° latitude, thence in a westerly direction along the 28° latitude to the intersection with 12° 15′ longitude, thence directly north along 12° 15′ longitude to the intersection with 31° latitude, thence directly west along 31° latitude, to the border of Tunisia, thence in a general Northerly direction along the international boundary.

The Second Zone – consists of that part of Cyrenaica north of 28° latitude, bounded on the west by the eastern boundary of Zone I described above, on the north by the limits of the territorial waters and high seas under the control and jurisdiction of the United Kingdom of Libya, and on the east by the international boundary with Egypt.

The Third Zone – consists of the part of Cyrenaica south of 28° latitude bounded on the west by 18° 30′ longitude, on the south by the international boundary with French Equatorial Africa and on the east by the international boundary with Egypt and the Sudan.

The Fourth Zone – consists of the province of the Fezzan bounded on the north by the southern border of the First Zone described above, bounded on the west by the international boundary with Algeria and Tunisia, on the south by the international boundary with French East Africa and French Equatorial Africa and on the east by 18° 30′ longitude, which is the western boundary of the Third Zone.

Article 3

The grid to be used in conjunction with the official map shall consist of longitude and latitude lines five minutes apart commencing from any full degree.

Article 4

Boundaries of concessions shall conform as far as possible to the grid lines specified above with the following exceptions :

(a) where they follow the limits of the territorial waters and high seas contiguous thereto under the control and jurisdiction of the United Kingdom of Libya,
(b) where they follow the coast line of Libya,
(c) where they follow the boundaries of the petroleum zones,
(d) where they follow the international frontiers.

Article 5

(a) Concession areas applied for shall be compact and free from narrow indentations, except in exceptional cases as the Commission may deem fit. An applicant shall not be permitted to unify distinct concession areas by connecting them with an insubstantial link. The Commission may require any applicant who fails to comply with the provisions of this paragraph to amend his application.
(b) The greatest length of a concession shall not exceed six times its weighted mean average width. However the Commission may permit a deviation from the aforementioned ratio of width to length where it deems it necessary. In determining the above ratio contiguous and adjoining concessions shall be considered as a unit, notwithstanding that they may cross zonal boundaries.
(c) The above provisions shall not apply if the Commission deems it necessary for the settlement of overlaps.

Article 6

For all purposes of the Petroleum Law 1955 and the regulations issued thereunder the area of each 5′ × 5′ block of the grid shall be deemed to be as set out hereunder :

Each 5′ × 5′ block between 33° – 34° of Latitude 71.57 sq. kms.
Each 5′ × 5′ block between 32° – 33° of Latitude 72.37 sq. kms.
Each 5′ × 5′ block between 31° – 32° of Latitude 73.15 sq. kms.
Each 5′ × 5′ block between 30° – 31° of Latitude 73.91 sq. kms.
Each 5′ × 5′ block between 29° – 30° of Latitude 74.64 sq. kms.
Each 5′ × 5′ block between 28° – 29° of Latitude 75.35 sq. kms.
Each 5′ × 5′ block between 27° – 28° of Latitude 76.04 sq. kms.
Each 5′ × 5′ block between 26° – 27° of Latitude 76.70 sq. kms.
Each 5′ × 5′ block between 25° – 26° of Latitude 77.34 sq. kms.
Each 5′ × 5′ block between 24° – 25° of Latitude 77.96 sq. kms.
Each 5′ × 5′ block between 23° – 24° of Latitude 78.56 sq. kms.
Each 5′ × 5′ block between 22° – 23° of Latitude 79.13 sq. kms.
Each 5′ × 5′ block between 21° – 22° of Latitude 79.67 sq. kms.
Each 5′ × 5′ block between 20° – 21° of Latitude 80.20 sq. kms.
Each 5′ × 5′ block between 19° – 20° of Latitude 80.70 sq. kms.

Annex I-10

1976 TUNISIAN MEMORANDUM

[Arabic Text not reproduced]

[See Memorial of Tunisia, Annex 34, and Memorial of the Libyan Arab Jamahiriya, para. 41, supra*]*

Annex I-11

JOINT COMMUNIQUÉ OF LIBYA AND TUNISIA ISSUED ON 24 AUGUST 1976

[Arabic text not reproduced]

[See Memorial of Tunisia, Annex 39, and Memorial of the Libyan Arab Jamahiriya, para. 43, supra*]*

Annex I-12

TUNISIAN NOTE DATED 10 JUNE 1977

[Arabic text not reproduced]

[See Memorial of Tunisia, Annex 68, supra*]*

LIBYAN NOTE DATED 20 DECEMBER 1977

[Arabic text not reproduced]

(Translation)

Ref. No.: 1/7/7/751.

THE HONOURABLE BROTHER
HABIB CHATTY
Minister of Foreign Affairs of the Tunisian Republic

I have the honour to refer to the agreement concluded between our two delegations which led to the signing of the Special Agreement for the submission of the dispute concerning the continental shelf between our two countries to the International Court of Justice, on 2 Jumada Athani 1397 H., corresponding to 10 June 1977.

I am pleased to confirm to Your Excellency my approval of translating the phrase, "Duroof Khassa", mentioned in Article 1 of the said agreement, into the following phrase in English: "relevant circumstances".

(Signed) Dr. Ali Abdussalam TREKI

Secretary of Foreign Affairs of the
Socialist People's Libyan Arab Jamahiriya.

Annex I-13

LIBYAN *NOTE VERBALE* DATED 20 DECEMBER 1977

[Arabic text not reproduced]

(Translation)

Ref.: 1/7/7/750.

The Secretariat of Foreign Affairs of the Socialist People's Libyan Arab Jamahiriya presents its compliments to the Office of the Tunisian Commissioner-General in Tripoli, and – referring to the Note Verbale of the Tunisian Ministry of Foreign Affairs No. 41/L/11, dated 11 November 1977, concerning the Special Agreement between the Jamahiriya and Tunisia to the International Court of Justice, signed by the two countries in Tunis on 3 Jumada Athani 1397 H., corresponding to 10 June 1977 – has the honour to inform it that the Secretariat of Foreign Affairs of the Socialist People's Libyan Arab Jamahiriya also finds that the phrase "Duroof Khassa", mentioned in the text of the first article of the aforementioned agreement, is "Relevant Circumstances" in English.

The Secretariat of Foreign Affairs of the Jamahiriya proposes a meeting be convened between the experts of the two countries, for the translation of the entire agreement into English, in order to correspond totally to the Arabic text.

TO: THE TUNISIAN COMMISSIONER-GENERAL'S OFFICE
TRIPOLI.

Annex I-14

LIBYAN LAW NO. 2 OF 18 FEBRUARY 1959 CONCERNING THE DELIMITATION OF LIBYAN TERRITORIAL WATERS [1]

[Arabic text not reproduced]

(Translation)

The Senate and the House of Representatives have passed the following law, which,

We, *Idris the First,* King of the United Kingdom of Libya, have sanctioned and do hereby promulgate.

Article (1)

The Libyan Territorial Waters shall be fixed at twelve nautical miles.

Article (2)

The Prime Minister and the Ministers each within the area of his competence shall execute this law which shall take effect from the date of its publication in the *Official Gazette.*

IDRIS.

Issued at Dar as-Salem Palace on 10 Shaban 1378 H., corresponding to 18 February 1959.

By Order of the King

Abdel Majeed KHABAR	Prime Minister and the Minister of Foreign Affairs.
Ibrahim BEN SHABAN	Minister of Defence
Ismail BEN LAMEEN	Minister of Finance
Nasser AL-KHESA	Minister of Communication
Wahbi AL-BOORY	Minister of State
Abu Bakr NAAMA	Minister of Education
Abdel Hamjd EDDIBANI	Minister of Justice
Abu Bakr AHMED	Minister of Health
Rajab Ben KATOO	Minister of National Economy

[1] *The Official Gazette of the United Kingdom of Libya,* No. 7, 31 March 1959-22 Ramadan 1378 H., Year IX, p. 3.

Annex I-15

TUNISIAN LAW NO. 62-35 OF 16 OCTOBER 1962

[Arabic text not reproduced]

LOI N° 62-35 DU 16 OCTOBRE 1962 (18 JOUMADA I 1382), MODIFIANT LE DÉCRET DU 26 JUILLET 1951 (22 CHAOUAL 1370), PORTANT REFONTE DE LA LÉGISLATION DE LA POLICE DE LA PÊCHE MARITIME ET DÉLIMITATION DES EAUX TERRITORIALES DE LA RÉPUBLIQUE TUNISIENNE [1]

Au nom du Peuple,

Nous, Habib Bourguiba, président de la République tunisienne,

L'Assemblée nationale ayant adopté,

Promulguons la loi dont la teneur suit :

Article unique. – L'article 3 du décret du 26 juillet 1951 (22 Chaoual 1370) est abrogé et remplacé par les dispositions suivantes :

« *Article 3 (nouveau)* – Est dénommée mer territoriale tunisienne :

a) de la frontière tuniso-algérienne à Ras Kapoudia et autour des îles adjacentes, la partie de la mer comprise entre la laisse de basse mer et une ligne parallèle tracée à 6 milles au large, à l'exception du golfe de Tunis qui, à l'intérieur de la ligne cap Farina, île Plane, île Zembra et cap Bon, est entièrement compris dans ladite mer.

Au large de la mer territoriale délimitée ci-dessus, une zone est réservée dans laquelle, seuls pourront être autorisés à pratiquer la pêche les navires battant pavillon tunisien.

La zone de pêche est fixée à 12 milles à partir de la ligne de base qui sert de point de départ pour mesurer la largeur de la mer territoriale telle qu'elle est déterminée au paragraphe *a)* ci-dessus ;

b) de Ras Kapoudia à la frontière tuniso-libyenne, la partie de la mer limitée par une ligne qui, partant du point d'aboutissement de la ligne des 12 milles décrite ci-dessus, rejoint sur le parallèle de Ras Kapoudia l'isobathe de 50 mètres et suit cet isobathe jusqu'à son point de rencontre avec une ligne partant de Ras Aghdir en direction du nord-est ZV = 45°.»

La présente loi sera publiée au *Journal officiel de la République tunisienne* et exécutée comme loi de l'Etat.

Fait à Tunis le 16 octobre 1962 (18 Joumada I 1382).

Le président de la République tunisienne,

Habib BOURGUIBA.

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1 *Journal officiel de la République tunisienne*, Lois et règlements (traduction française), 106e année, n° 53, vendredi 12-mardi 16 octobre 1962 (14-18 Joumada I 1382), p. 1224.

Annex I-16

TUNISIAN LAW NO. 63-49 OF 30 DECEMBER 1963

[Arabic text not reproduced]

[See Memorial of Tunisia, Annex 85, supra*]*

Annex I-17

TUNISIAN LAW NO. 73-49 OF 2 AUGUST 1973

[Arabic text not reproduced]

[See Memorial of Tunisia, Annex 86, supra*]*

TUNISIAN DECREE NO. 73-527 OF 3 NOVEMBER 1973

[Arabic text not reproduced]

DÉCRET N° 73-527 DU 3 NOVEMBRE 1973, RELATIF AUX LIGNES DE BASE [1]

Nous, Habib Bourguiba, président de la République tunisienne,

Vu la loi n° 73-49 du 2 août 1973, portant délimitation des eaux territoriales et notamment son article premier ;

Vu l'avis des ministres des affaires étrangères, de la défense nationale, de l'économie nationale, de l'agriculture et des travaux publics et de l'habitat ;

Décrétons :

Article premier. – Les lignes de base, à partir desquelles est mesurée la largeur de la mer territoriale tunisienne, sont constituées de la frontière tuniso-algérienne à la frontière tuniso-libyenne et autour des îles, des hauts-fonds de Chebba et des îles Kerkennah où sont installées des pêcheries fixes et des hauts-fonds découvrants d'El Bibane, par la laisse de basse mer ainsi que par les lignes de base droites tirées vers les hauts-fonds et par les lignes droites de fermeture des golfes de Tunis et de Gabès.

Ces lignes de base sont définies par :

1) la laisse de basse mer, de la frontière tuniso-algérienne au cap Sidi Ali el Mekki ;
2) la laisse de basse mer des écueils des Sorelles, du Galiton de la Galite, des Galitons de l'est, des îles Fratelli, Cani et Pilau ;
3) la ligne de fermeture du golfe de Tunis constituée par les lignes de base droites joignant le cap Sidi Ali Mekki, l'île Plane, la pointe nord de l'île Zembia et le cap Bon ;
4) la laisse de basse mer, du cap Bon à Ras Kapoudia ;
5) la laisse de basse mer des îles Kuriates ;
6) les lignes de base droites enveloppant les pêcheries fixes de Chebba et des îles Kerkennah et définies par Ras Kapoudia et par les balises suivantes :

a)	Chebba n° 1	35° 08′ 40″	11° 12′ 43″
b)	Maruka	35° 01′ 20″	11° 29′ 11″
c)	El Barani	34° 55′ 21″	11° 33′ 09″

[1] *Journal officiel de la République tunisienne*, Lois et règlements (traduction française), 116e année, n° 41, vendredi 2-mardi 6 novembre 1973, p. 1697-1698.

d)	El Mzebla	34° 51′ 27″	11° 38′ 14″
e)	Sakib Hamida n° 1 . . .	34° 45′ 17″	11° 33′ 58″
f)	Sakib Hamida n° 2 . . .	34° 43′ 48″	11° 33′ 23″
g)	Oued Bou Zrara n° 1 . .	34° 42′ 36″	11° 29′ 03″
h)	Oued Bou Zrara n° 2 . .	34° 41′ 22″	11° 26′ 42″
i)	Oued Mimoun n° 4 . . .	34° 40′ 25″	11° 19′ 40″
j)	Oued Saadoun	34° 39′ 10″	11° 14′ 14″
k)	Samoum	34° 34′ 54″	11° 03′ 38″

7) la ligne droite de fermeture du golfe de Gabès joignant la balise Samoum définie ci-dessus et Ras Tourgueness ;
8) la laisse de basse mer, de Ras Tourgueness à la pointe de Sidi Garus ;
9) la ligne de base droite joignant la pointe de Sidi Garus à Ras Marmor ;
10) la laisse de basse mer, de Ras Marmor à la frontière tuniso-libyenne ;
11) la laisse de basse mer des hauts-fonds découvrants d'El Bibane.

Article 2. – Le ministre des travaux publics et de l'habitat est chargé d'établir les cartes marines indiquant les nouvelles lignes de base à partir desquelles est mesurée la largeur de la mer territoriale tunisienne et d'assurer à ces cartes la publicité suffisante.

Article 3. – Les ministres des affaires étrangères, de la défense nationale, de l'économie nationale, de l'agriculture et des travaux publics et de l'habitat sont chargés, chacun en ce qui le concerne, de l'exécution du présent décret qui sera publié au *Journal officiel de la République tunisienne.*

Fait à Tunis, le 3 novembre 1973.

Pour le président de la République tunisienne
et par délégation,

le premier ministre,

Hedi NOUIRA.

Annex I-18

PAGE 171 OF *MEDITERRANEAN PILOT*, VOLUME 1, CHAPTER 7, "RAS KABOUDIA TO GULF OF GABÈS"

A *light-buoy* (black and white chequers conical; light fixed green) marks the NE side of the outer end of the dredged channel, and is moored 3¼ miles SE of Sfax lighthouse.

No. 1 light-buoy (black and white; light fixed green) and Nos. 3, 5, and 9 light beacons (black and white; exhibiting fixed green lights) mark the NE side of the channel.

A *light-buoy* (black and white chequers spar; light isophase green) is moored midway between Nos. 5 and 9 light beacons.

A *light-buoy* (red conical; light fixed red; radar reflector) marks the SW side of the outer end of the channel.

No. 2 light-buoy (red; light fixed red) and Nos. 4, 6 and 10 light beacons (red; exhibiting fixed red lights) mark the SW side of the channel.

The harbour of Sfax consists of a main, or outer, basin and **Nouvelle Darse**, which lies NE of the outer basin. Both these basins can accommodate vessels up to a maximum draught of 10 m (33 ft).

Quai du Commerce, with depths of 10 m (33 ft) alongside, lies at the head of the main basin.

Bassin des Voiliers, lying SE of Quai du Commerce, has depths of 8·5 m (28 ft) in it, and two small basins, **Darse B** and **Darse A**, lying N of Bassin des Voiliers, have depths of 3 m and 4 m (10 and 13 ft) respectively.

There are two mooring buoys inside the harbour.

Storm signals are displayed, but only when the wind is expected to exceed 20 knots.

Facilities. Minor repairs can be effected. There is a floating dock. There are several cranes, and a floating crane with a 60 ton capacity. Four tugs are available.

There is a hospital. For de-ratting see 1.120.

Supplies. Fuel oil and diesel oil are available. Fresh water is available from hydrants on all the quays.

Fresh provisions are obtainable.

Communications. There is a coast radio station and a port radio station at Sfax. An airport lies 4 miles W of the town.

Life-saving appliances are maintained at Sfax.

Climate. See table at 1.191.

Sfax to Ras Yonga

Chart 1162

7.77 Sidi Abid lies 1 mile S of the airport at Sfax, and **Ras Tina** lies 5¼ miles SW of the harbour at Sfax, and has a jetty extending SE from close NE of it.

A light is exhibited from a white tower, 44 m in height, painted with red bands and attached to a white dwelling, standing 1¼ miles WNW of Ras Tina.

The village of **Nakta** lies 7¼ miles SW of Ras Tina, and SW of the village is a cylindrical water tank painted yellow.

Sidi Mohamed Bou Akazine, which has two marabouts, lies 2 miles NW of Nakta, and 4 miles N of Ras Burmada.

Ras Burmada (*34° 31' N, 10° 33' E*) lies 16 miles SW of Sfax.

The village of **Mahares** lies on the coast 2½ miles W of Ras Burmada, and in it there is a minaret and a number of marabouts.

Anchorage, sheltered from winds from W, through N, to NE, can be obtained off Mahares. Vessels can anchor according to draught, with the fort at Mahares bearing 000°; the holding ground is good.

Chart 3327

7.78 Bordj Yonga, 5 miles SW of Mahares, is a square fort flanked by four towers, and N of it are three marabouts.

Ras Yonga (*34° 25' N, 10° 22' E*) lies 9 miles SW of Mahares, and the coast between is low and marshy.

A conspicuous mosque stands near the head of a creek 1½ miles WNW of Ras Yonga.

GULF OF GABÈS

Ras Yonga to Skhirra Khedima

7.79 The Gulf of Gabès is entered between Ras Yonga and Île de Djerba (7.90), 37 miles SE. Its shores are backed by hills with mountains behind them.

Port de Ghannouche (7.84), and the town of Gabès, (7.86), lie on the coast at the middle of the head of the bay.

Jebel er Roumana, 170 m high, and **Jebel Zemlet el Beida**, 275 m high, lie within 8 miles of the coast about 30 miles SW of Ras Yonga. From E these hills appear flat-topped, but from SE they appear as two sharp peaks. See view 47.

Depressions, usually moving on a NE or ENE track, occasionally move across the Gulf of Gabès and sometimes cause gales.

Jebel Matmata is a range of mountains about 23 miles S of the town of Gabès. Near the NW and SE ends of this range are, respectively, **Kalaa Matmata**, 515 m high, and **Argoub er Zmertene**, 713 m high.

Jebel Tadjera Khir, 270 m high and surmounted by a structure, and **Kef Mzem Zem**, 689 m high, are situated at the SE end of this mountainous region, about 13 miles E and 8½ miles S, respectively, of Argoub er Zmertene.

Between Ras Yonga and Skhirra Khédima (7.80), the marshy coast is fronted by a bank of mud and weed, which dries and extends as much as 6 miles offshore in places. It is covered with fishing stakes.

Îlots Sur-Kenis lie on the E part of the bank and consist of **Îlot Kneiss** (*34° 22' N, 10° 19' E*), which is 7 m high and not easy to distinguish, and three low rocky islets. The N of these islets can be identified by a white cliff.

The SE edge of the bank is marked by two beacons.

No. 1 Beacon (top part red and the bottom part white; topmark two cones base to base) is the NE beacon and lies 2¾ miles SSE of Îlot Kneiss.

No. 2 Beacon (red and white in horizontal bands; topmark two cones points down) lies 4¼ miles SW of No. 1 Beacon.

"O" Light-buoy (red and white stripes can; light flashing white every 10 seconds; radar reflector; double St. Andrew's cross topmark) is moored 18 miles SSE of Ras Yonga in the centre of Gulf of Gabès, and marks the tail of the bank extending S from the N shore of the gulf.

La Skhirra

Chart 9

7.80 Skhirra Khédima (*34° 20' N, 10° 10' E*) is a small projection 11¼ miles SW of Ras Yonga. A pier extends 1¼ cables S from Skhirra Khédima and there is a depth of about 1·2 m (4 ft) at its head.

Baie des Sur-Kenis lies between the S end of the bank (7.79) and Nador Tower, 7¼ miles SW of Skhirra Khédima.

Oued ben Ghalef flows into the sea ¼ mile E of Skhirra Khédima. There is a bar at its mouth across which there is a narrow channel with a depth of 3 m (10 ft). Within the bar, there are depths between 10 m and 11 m (33 and 36 ft). The channels both across and within the bar are marked by beacons, but local knowledge is necessary.

The W shore of Baie des Sur-Kenis consists of rugged

Annex I-19

PAGE 189 OF
INSTRUCTIONS NAUTIQUES, AFRIQUE (CÔTE NORD)-LEVANT

AUTRE MOUILLAGE. — **Maharès** (34° 31′ N — 10° 30′ Est) [1]. Devant Maharès on trouve un abri suffisant contre les vents de l'Ouest au N E en passant par le Nord. La tenue y est bonne. On peut mouiller sur le relèvement à 360° du bordj ou du minaret (page 186).

Une voie ferrée relie Maharès à *Sfax*. *Bureau de poste.*

GOLFE DE GABÈS [2]

Le golfe de Gabès, l'ancienne Petite Syrte, s'ouvre entre le ras Yonga (Ungha) [page 185] et l'extrémité N W de l'île de Djerba (33° 53′ N — 10° 51′ E). On y trouve un bon abri soit dans la partie N W — baie de La Skhirra ou des Sur-Kénis — soit dans la partie Sud, sur les bancs qui s'étendent devant l'entrée du canal d'Adjim.

Zone. — Une zone dangereuse où des travaux portuaires sont en cours est portée sur la carte n° 4241, à 1,5 M au Nord de l'entrée du port de Gabès.

CHAMP DE TIR. — Un champ de tir est installé le long de la côte au Sud de l'entrée du port de Gabès et s'étend vers le large jusqu'à 2 500 m au N E de l'embouchure de l'oued es-Sourrag. L'exécution des tirs est annoncée par un fanion rouge, hissé à 1,5 M au S S E du phare de la Douane.

CÔTE ET AMERS. — Dans l'Ouest du golfe de Gabès s'élèvent des montagnes dont certaines sont relativement hautes (vues de la carte n° 4316). Au N N W à 25′ M, la chaîne du *djebel Bou-Hedma* (34° 30′ N — 9° 36 E) montre les deux grands sommets de son côté Est et un sommet plus petit qui, vue du Sud, a le profil d'un cône (planche 12, page 404). Plus près de la côte, à 6 M au N N W de Gabès, se trouve le massif des *djebels er-Roumana* et *Tebaga Fatnassa* (*Meida*) qui, vu de l'Est, offre l'aspect caractéristique de deux tables horizontales et, vu du Sud, celui de deux pics aigus. Près, et dans l'Ouest de Gabès, on voit le *djebel ed-Dissa* couronné par une construction remarquable et plus au Sud, le *Zemlet-el-Gueloua* (*djebel Halouga*).

Au S W de la partie Sud du golfe, la *chaîne des Matmata* porte d'Ouest en Est les *sommets Kaloa Matmata* (*Ballon*), *Lella Telkoussset* (*sommet A*) et dans l'*Argoub-ez-Zmertene* (*Smerten*), le *signal du kef n-Nsoura* (714 m). Plus au Sud, le *kef Mzem-Mzem* (*Demoer*) et le *djebel Tadjerah Khir* (*Tadjera*), surmonté d'un poste optique, terminent les chaînes de hauteur vers le S E.

A 18 M au Sud du ras Yonga (Ungha) est mouillée une bouée cylindrique à bandes verticales rouges et blanches, et voyant 2 X superposés, lumineuse et à réflecteur radar. C'est la bouée d'atterris-

[1] Carte n° 4239.
[2] Carte n° 4316.

Annex I-20

ARTICLES 4 THROUGH 11 OF THE 1958 GENEVA CONVENTION ON THE TERRITORIAL SEA AND CONTIGUOUS ZONE

Article 4

1. In localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of the territorial sea is measured.

2. The drawing of such baselines must not depart to any appreciable extent from the general direction of the coast, and the sea areas lying within the lines must be sufficiently closely linked to the land domain to be subject to the régime of internal waters.

3. Baselines shall not be drawn to and from low-tide elevations, unless lighthouses or similar installations which are permanently above sea level have been built on them.

4. Where the method of straight baselines is applicable under the provisions of paragraph 1, account may be taken, in determining particular baselines, of economic interests peculiar to the region concerned, the reality and the importance of which are clearly evidenced by a long usage.

5. The system of straight baselines may not be applied by a State in such a manner as to cut off from the high seas the territorial sea of another State.

6. The coastal State must clearly indicate straight baselines on charts, to which due publicity must be given.

Article 5

1. Waters on the landward side of the baseline of the territorial sea form part of the internal waters of the State.

2. Where the establishment of a straight baseline in accordance with Article 4 has the effect of enclosing as internal waters areas which previously had been considered as part of the territorial sea or the high seas, a right of innocent passage, as provided in Articles 14 to 23, shall exist in those waters.

Article 6

The outer limit of the territorial sea is the line every point of which is at a distance from the nearest point of the baseline equal to the breadth of the territorial sea.

Article 7

1. This article relates only to bays the coasts of which belong to a single State.

2. For the purposes of these articles, a bay is a well-marked indentation whose penetration is in such proportion to the width of its mouth as to contain landlocked waters and constitute more than a mere curvature of the coast. An indentation shall not, however, be regarded as a bay unless its area is as large as, or larger than, that of the semi-circle whose diameter is a line drawn across the mouth of that indentation.

3. For the purpose of measurement, the area of an indentation is that lying between the low-water mark around the shore of the indentation and a line joining the low-water marks of its natural entrance points. Where, because of the presence of islands, an indentation has more than one mouth, the semi-circle shall be drawn on a line as long as the sum total of the lengths of the lines across the different mouths. Islands within an indentation shall be included as if they were part of the water area of the indentation.

4. If the distance between the low-water marks of the natural entrance points of a bay does not exceed 24 miles, a closing line may be drawn between these two low-water marks, and the waters enclosed thereby shall be considered as internal waters.

5. Where the distance between the low-water marks of the natural entrance points of a bay exceeds 24 miles, a straight baseline of 24 miles shall be drawn within the bay in such a manner as to enclose the maximum area of water that is possible with a line of that length.

6. The foregoing provisions shall not apply to so-called "historic" bays, or in any case where the straight baseline system provided for in Article 4 is applied.

Article 8

For the purpose of delimiting the territorial sea, the outermost permanent harbour works which form an integral part of the harbour system shall be regarded as forming part of the coast.

Article 9

Roadsteads which are normally used for the loading, unloading and anchoring of ships, and which would otherwise be situated wholly or partly outside the outer limit of the territorial sea, are included in the territorial sea. The coastal State must clearly demarcate such roadsteads and indicate them on charts together with their boundaries, to which due publicity must be given.

Article 10

1. An island is a naturally formed area of land, surrounded by water, which is above water at high tide.

2. The territorial sea of an island is measured in accordance with the provisions of these articles.

Article 11

1. A low-tide elevation is a naturally formed area of land which is surrounded by and above water at low-tide but submerged at high tide. Where a low-tide elevation is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island, the low-water line on that elevation may be used as the baseline for measuring the breadth of the territorial sea.

Annex I-21

ARTICLES 2 THROUGH 13, ARTICLES 76 THROUGH 79 AND ARTICLES 83 THROUGH 85 OF THE INFORMAL COMPOSITE NEGOTIATING TEXT (REV. 2)

PART II. TERRITORIAL SEA AND CONTIGUOUS ZONE

SECTION 1. GENERAL

Article 2

Juridical Status of the Territorial Sea, of the Air Space over the Territorial Sea and of its Bed and Subsoil

1. The sovereignty of a coastal State extends beyond its land territory and internal waters, and in the case of an archipelagic State, its archipelagic waters, over an adjacent belt of sea described as the territorial sea.

2. This sovereignty extends to the air space over the territorial sea as well as to its bed and subsoil.

3. The sovereignty over the territorial sea is exercised subject to this Convention and to other rules of international law.

SECTION 2. LIMITS OF THE TERRITORIAL SEA

Article 3

Breadth of the Territorial Sea

Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention.

Article 4

Outer Limit of the Territorial Sea

The outer limit of the territorial sea is the line every point of which is at a distance from the nearest point of the baseline equal to the breadth of the territorial sea.

Article 5

Normal Baseline

Except where otherwise provided in this Convention, the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State.

Article 6

Reefs

In the case of islands situated on atolls or of islands having fringing reefs, the baseline for measuring the breadth of the territorial sea is the seaward low-water line of the reef, as shown by the appropriate symbol on official charts.

Article 7

Straight Baselines

1. In localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of the territorial sea is measured.

2. Where because of the presence of a delta and other natural conditions the coastline is highly unstable, the appropriate points may be selected along the furthest seaward extent of the low-water line and, notwithstanding subsequent regression of the low-water line, such baselines shall remain effective until changed by the coastal State in accordance with this Convention.

3. The drawing of such baselines must not depart to any appreciable extent from the general direction of the coast, and the sea areas lying within the lines must be sufficiently closely linked to the land domain to be subject to the régime of internal waters.

4. Straight baselines shall not be drawn to and from low-tide elevations, unless lighthouses or similar installations which are permanently above sea level have been built on them or except in instances where the drawing of baselines to and from such elevations has recieved general international recognition.

5. Where the method of straight baselines is applicable under paragraph 1 account may be taken, in determining particular baselines, of economic interests peculiar to the region concerned, the reality and the importance of which are clearly evidenced by a long usage.

6. The system of straight baselines may not be applied by a State in such a manner as to cut off from the high seas or the exclusive economic zone the territorial sea of another State.

Article 8

Internal Waters

1. Except as provided in Part IV, waters on the landward side of the baseline of the territorial sea from part of the internal waters of the State.

2. Where the establishment of a straight baseline in accordance with Article 7 has the effect of enclosing as internal waters areas which had not previously been considered as such, a right of innocent passage as provided in this Convention shall exist is those waters.

Article 9

Mouths of Rivers

If a river flows directly into the sea, the baseline shall be a straight line across the mouth of the river between points on the low-tide line of its banks.

Article 10

Bays

1. This article relates only to bays the coasts of which belong to a single State.

2. For the purposes of this Convention, a bay is a well-marked indentation whose penetration is in such proportion to the width of its mouth as to contain land-locked waters and constitute more than a mere curvature of the coast. An

indentation shall not, however, be regarded as a bay unless its area is as large as, or larger than, that of the semi-circle whose diameter is a line drawn across the mouth of that indentation.

3. For the purposes of measurement, the area of an indentation is that lying between the low-water mark around the shore of the indentation and a line joining the low-water mark of its natural entrance points. Where, because of the presence of islands, an indentation has more than one mouth, the semi-circle shall be drawn on a line as long as the sum total of the lengths of the lines across the different mouths. Islands within an indentation shall be included as if they were part of the water area of the indentation.

4. If the distance between the low-water marks of the natural entrance points of a bay does not exceed 24 miles a closing line may be drawn between these two low-water marks, and the waters enclosed thereby shall be considered as internal waters.

5. Where the distance between the low-water marks of the natural entrance points of a bay exceeds 24 miles a straight baseline of 24 miles shall be drawn within the bay in such a manner as to enclose the maximum area of water that is possible with a line of that length.

6. The foregoing provisions do not apply to so-called "historic" bays, or in any case where the system of straight baselines provided for in Article 7 is applied.

Article 11

Ports

For the purpose of delimiting the territorial sea, the outermost permanent harbour works which form an integral part of the harbour system are regarded as forming part of the coast. Off-shore installations and artificial islands shall not be considered as permanent harbour works.

Article 12

Roadsteads

Roadsteads which are normally used for the loading, unloading, and anchoring of ships, and which would otherwise be situated wholly or partly outside the outer limit of the territorial sea, are included in the territorial sea.

Article 13

Low-tide Elevations

1. A low-tide elevation is a naturally formed area of land which is surrounded by and above water at low tide but submerged at high tide. Where a low-tide elevation is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island, the low-water line on that elevation may be used as the baseline for measuring the breadth of the territorial sea.

2. Where a low-tide elevation is wholly situated at a distance exceeding the breadth of the territorial sea from the mainland or an island, it has no territorial sea of its own.

PART VI. CONTINENTAL SHELF

Article 76

Definition of the Continental Shelf

1. The continental shelf of a coastal State comprises the sea-bed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.

2. The continental shelf of a coastal State shall not extend beyond the limits provided for in paragraphs 4 to 6.

3. The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the sea-bed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof.

4. *(a)* For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by either :

(i) a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope ; or,

(ii) a line delineated in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope.

(b) In the absence of evidence to the contrary, the foot of the continental slope shall be determined as the point of maximum change in the gradient at its base.

5. The fixed points comprising the line of the outer limits of the continental shelf on the sea-bed, drawn in accordance with paragraph 4 *(a)* (i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 metre isobath, which is a line connecting the depth of 2,500 metres.

6. Notwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs.

7. The coastal State shall delineate the seaward boundary of its continental shelf where that shelf extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured by straight lines not exceeding 60 nautical miles in length, connecting fixed points, such points to be defined by co-ordinates of latitude and longitude.

8. Information on the limits of the continental shelf beyond the 200 nautical mile exclusive economic zone shall be submitted by the coastal State to the Commission on the Limits of the Continental Shelf set up under Annex II on the basis of equitable geographical representation. The Commission shall make

recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf. The limits of the shelf established by a coastal State taking into account these recommendations shall be final and binding.

9. The coastal State shall deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, permanently describing the outer limits of its continental shelf. The Secretary-General shall give due publicity thereto.

10. The provisions of this article are without prejudice to the question of delimitation of the continental shelf between adjacent or opposite States.

Article 77

Rights of the Coastal State over the Continental Shelf

1. The coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources.

2. The rights referred to in paragraph 1 are exclusive in the sense that if the coastal State does not explore the continental shelf or exploit its natural resources, no one may undertake these activities without the express consent of the coastal State.

3. The rights of the coastal State over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation.

4. The natural resources referred to in this Part consist of the mineral and other non-living resources of the sea-bed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the sea-bed or are unable to move except in constant physical contact with the sea-bed or the subsoil.

Article 78

Legal Status of the Superjacent Waters and Air Space and the Rights and Freedoms of Other States

1. The rights of the coastal State over the continental shelf do not affect the legal status of the superjacent waters or of the air space above those waters.

2. The exercise of the rights of the coastal State over the continental shelf must not infringe, or result in any unjustifiable interference with navigation and other rights and freedoms of other States as provided for in this Convention.

Article 79

Submarine Cables and Pipelines on the Continental Shelf

1. All States are entitled to lay submarine cables and pipelines on the continental shelf, in accordance with the provisions of this article.

2. Subject to its right to take reasonable measures for the exploration of the continental shelf, the exploitation of its natural resources and the prevention, reduction and control of pollution from pipelines, the coastal State may not impede the laying or maintenance of such cables or pipelines.

3. The delineation of the course for the laying of such pipelines on the continental shelf is subject to the consent of the coastal State.

Article 83

Delimitation of the Continental Shelf between States with Opposite or Adjacent Coasts

1. The delimitation of the continental shelf between States with opposite or adjacent coasts shall be effected by agreement in conformity with international law. Such an agreement shall be in accordance with equitable principles, employing the median or equidistance line, where appropriate, and taking account of all circumstances prevailing in the area concerned.

2. If no agreement can be reached within a reasonable period of time, the States concerned shall resort to the procedures provided for in Part XV.

3. Pending agreement as provided for in paragraph 1, the States concerned, in a spirit of understanding and co-operation, shall make every effort to enter into provisional arrangements of a practical nature and, during this transitional period, not to jeopardize or hamper the reaching of the final agreement. Such arrangements shall be without prejudice to the final delimitation.

4. Where there is an agreement in force between the States concerned, questions relating to the delimitation of the continental shelf shall be determined in accordance with the provisions of that agreement.

Article 84

Charts and Lists of Geographical Co-ordinates

1. Subject to this Part, the outer limit lines of the continental shelf and the lines of delimitation drawn in accordance with Article 83 shall be shown on charts of a scale or scales adequate for determining them. Where appropriate, lists of geographical co-ordinates of points, specifying the geodetic datum, may be substituted for such outer limit lines or lines of delimitation.

2. The coastal State shall give due publicity to such charts or lists of geographical co-ordinates and shall deposit a copy of each such chart or list with the Secretary-General of the United Nations.

Article 85

Tunnelling

This Part does not prejudice the right of the coastal State to exploit the subsoil by means of tunnelling, irrespective of the depth of water above the subsoil.

Annex I-22

COLOMBIA/COSTA RICA AGREEMENT, *LIMITS IN THE SEAS*, NO. 84, 15 FEBRUARY 1979, WASHINGTON, DC, OFFICE OF THE GEOGRAPHER, US DEPARTMENT OF STATE

[Not reproduced]

Annex I-23

PAGE 663 OF
GILBERT C. GIDEL, *LE DROIT INTERNATIONAL PUBLIC DE LA MER*, PARIS, 1934, VOLUME III

[Not reproduced]

Annex I-24

PAGE 263 OF
MITCHELL P. STROHL, *THE INTERNATIONAL LAW OF BAYS*, THE HAGUE, MARTINUS NIJHOFF, 1963

[Not reproduced]

Annex I-25

PAGE 221 OF
LEO J. BOUCHEZ, *THE RÉGIME OF BAYS IN INTERNATIONAL LAW*, LEYDEN, A. W. SIJTHOFF, 1964

[Not reproduced]

Annex I-26

EXTRACT FROM PAGE 97 OF
YEARBOOK OF THE INTERNATIONAL LAW COMMISSION, 1951

c) *Tunisie*

136. La zone réservée au large des côtes de la Régence de Tunis dans laquelle le Gouvernement tunisien réglemente souverainement l'exercice de la pêche est délimitée à l'heure actuelle ainsi qu'il suit:

1) De la frontière algéro-tunisienne au Ras Kaboudia, la partie de la mer comprise entre la laisse de basse-mer et une ligne parallèle tracée à trois milles au large, à l'exception du golfe de Tunis qui, à l'intérieur de la ligne cap Farina-île Plane-île Zembra-cap Bon est entièrement compris dans la zone réservée.

2) Du Ras Kaboudia à la frontière de Tripolitaine, la partie de la mer limitée par une ligne qui, partant du point d'aboutissement de la ligne des 3 milles décrite ci-dessus rejoint au large du Ras Kaboudia l'isobathe de 50 mètres et suit cet isobathe jusqu'à son point de rencontre avec une ligne partant du Ras Ahadir en direction du nord-est.

137. L'inclusion dans la zone réservée d'une notable partie du golfe de Gabès est justifiée par l'existence de pêcheries indigènes sur les hauts-fonds et la présence de bancs d'éponges dont le gouvernement local a, de tout temps, assuré le contrôle. Ces eaux historiques sont limitées non pas en distance, par rapport à un tracé littoral, mais en profondeur parce que ce point de vue seul importait en raison de l'usage qui était fait de ces eaux.

C'est ainsi :

A) Que les pêcheries indigènes, étant constituées par des branches de palmier fichées dans le fond de la mer et dont le sommet doit dépasser, même par marée haute, les revendications au titre des pêcheries indigènes, ne s'étendent pas sur des fonds supérieurs à 2,50-3 mètres ;

B) Que la pêche des éponges au trident ne pouvant s'exercer au-delà de 18 à 20 mètres, la profondeur de 20 mètres a été choisie comme limite intérieure de la pêche des scaphandres et gangaves, en réservant aux premiers les profondeurs inférieures ;

C) Que la pêche au scaphandre et à la gangave s'étant exercée dans le passé par des profondeurs ne dépassant pas 50 mètres, la surveillance administrative a adopté cette limite comme étant celle de l'étendue pratique des bancs tunisiens.

138. Les justifications juridiques de ce point de vue sont les suivantes : jusqu'aux fonds de 3 mètres environ, quelle que soit la distance de la ligne côtière, il existe des pièces de notoriété, des actes de concession des beys qui remontent à 1872 et réservent la propriété de telles eaux aux habitants pauvres de la région ; des actes de successions familiales dont certains remontent à 1854 comprennent parmi les biens fonciers des parcelles de pêcheries indigènes sises dans les zones ci-dessus autour des îles Kerkennah et le long des rivages de la région de Sfax – plus de mille titres de ce genre sont entre les mains de l'administration. Ces fonds s'étendent jusqu'à 17 milles de la terre ferme.

139. En ce qui concerne les profondeurs supérieures et la pêche aux éponges, le contrôle de ce qu'on appelle « les bancs tunisiens » a toujours été exercé par l'administration des beys. En 1848, le souverain transféra la concession à son ministre Ben Ayed qui prit le soin de la faire établir par des décrets réguliers notifiés aux consuls. Ceux-ci, malgré les protestations du concessionnaire évincé qui était grec, ne songèrent jamais à contester au bey le droit de disposer souverainement des bancs d'éponges de la côte tunisienne. La concession Ben Ayed dura jusqu'en 1869, époque où la commission financière constituée auprès des beys pour la garantie des dettes de la Régence vis-à-vis des puissances européennes décida d'affermer la pêche des éponges et de déclarer revenu public les produits de ce fermage.

140. En 1875, un capitaine grec et un commerçant français ayant essayé de protester contre le fermage en invoquant le principe de la mer libre furent, par jugement de leurs consuls respectifs, déboutés de leurs prétentions.

141. Quant à la limite de la surveillance jusqu'aux fonds de 50 mètres, elle est appliquée depuis l'affermage de la pêche des éponges et est prévue explicitement à l'article 29 de l'instruction du 31 décembre 1904 sur le service de la navigation et des pêches, insérée pages 115 et suivantes du *Recueil des lois, décrets, règlements et circulaires concernant les services dépendant de la direction générale des travaux publics de la Régence de Tunis*, année 1904. Depuis quarante-quatre ans, cette circulaire a reçu une diffusion et une publicité très larges et n'a jamais été contestée par personne. D'ailleurs des jugements des tribunaux ont confirmé le point de vue de l'administration. A titre d'exemple, on peut citer un jugement du tribunal correctionnel de Sousse du 11 juillet 1929, sur appel d'un jugement de la justice de paix de Sfax, qui a condamné le patron d'un gangavier italien surpris en train de pêcher sans patente le 11 juillet 1928 à 6 milles dans le sud-est de la bouée n° 7 des Kerkennah par des fonds de 35 mètres.

142. Le droit de la Tunisie de considérer comme faisant partie des eaux territoriales toute la zone comprise à l'intérieur de la ligne de fonds de 50 mètres du Ras Kaboudia à la frontière tripolitaine ne saurait donc être sérieusement contesté.

Annex I-27

LIBYAN *NOTE VERBALE* TO THE MINISTRY OF FOREIGN AFFAIRS, TUNISIAN REPUBLIC, DATED 20 JANUARY 1979

[Arabic text not reproduced]

(Translation)

R.N. : 1/7/11/42

The Secretariat of Foreign Affairs of the Socialist People's Libyan Arab Jamahiriya presents its best compliments to the Ministry of Foreign Affairs of the fraternal Tunisian Republic, and in reference to the Tunisian Law No. 49/73, dated 2 August 1973, concerning the delimitation of the Tunisian territorial waters, and to the Decree No. 527/73, dated 3 November 1973, concerning the baselines, has the honour to inform the Ministry of Foreign Affairs and the Tunisian authorities that the Socialist People's Libyan Arab Jamahiriya in accordance with its previous consistent positions, re-emphasizes its reservation as to any and all consequences which the above-mentioned Law and Decree might purport to effect in respect to its permanent and sovereign rights to its continental shelf.

Annex I-28

GLOSSARY OF ARABIC PLACE NAMES

As the spellings of Arabic place names are phonetic, there are certain variations between the place names used in the text of the Memorial, and those used in the maps accompanying the Memorial and the geological survey.

The following names are listed below as examples :

Al Khums : Khums, Al Kums.
Benghazi : Binghazi.
Cape Bon : Cap Bon, Ras Atib.
Djerba : Gerba.
Ghadames : Ghadamis.
Gharian : Gharyan.
Gulf of Gabes : Golfe de Gabes.
Gulf of Hammamet : Hammat.
Hamadah al Hamrah : Hamada al Hamra.
Kerkennah : Kerkenna.
Misratah : Misurata.
Nefusa : Nafusa, Nofusa.
Ras Ajdir : Ras Aghadir, Ras Jdir.
Ras Kaboudia : Ras Kapoudia, Ras Kapudia.
Ras Yonga : Ras Ungha.
Sirt : Sirte.
Sousse : Sussa.

Annex I-29

CERTIFICATION

I, the undersigned, *Kamel H. El Maghur,* Agent of the Socialist People's Libyan Arab Jamahiriya, hereby certify that copies of each document attached as Annexes I-1 through I-9 and I-11 through I-27 of the Memorial submitted by the Socialist People's Libyan Arab Jamahiriya are accurate copies ; that the document appearing in Annex I-10 is an accurate copy of the memorandum received by Libya ; and that the translations into English of the Arabic text of each document appearing in Annexes I-1, I-9, I-10, I-11, I-12, I-13, I-14, and I-27 are accurate translations of those documents.

(Signed) Kamel H. EL MAGHUR,
Agent of the Socialist People's
Libyan Arab Jamahiriya.

Annex II

A STUDY OF THE LIBYAN-TUNISIAN CONTINENTAL SHELF[1]

CHAPTER I
THE MEDITERRANEAN SEA

SECTION 1 - Introduction

A - Location and General Setting

The Mediterranean Sea, in which the study area is located, covers an area of nearly 2.5 million square kilometres between the continents of Europe, Africa and Asia: it is connected in the west with the Atlantic Ocean via the Strait of Gibraltar, and in the east with the Black Sea via the Dardanelles and the Bosphorus.

It extends from the coast of Levant westward to the Strait of Gibraltar, a distance of 4000 kilometres trending east-west along much of its length (*Figure 1*).

Deep water covers 60 per cent. of the Mediterranean. Of this area of deep water, 1.4 million square kilometres are at depths greater than 1000 metres and about 1 million square kilometres are 2000 metres deep.

About 80 per cent. of the Mediterranean is deeper than 200 metres, while only 20 per cent. of the area of the Mediterranean Sea is less than 200 metres deep (Byramjee *et al.*, 1977).

A maximum depth of 5093 metres has been found in the Hellenic trough. The mean depth is approximately 1500 metres, but great differences exist depending on the region.

Most authors attribute these differences in depth to changes in the type of crust, or to different morphological processes.

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B - Physiography and Topography

Accordingly, the Mediterranean Sea is divided into several geographical basins and sub-basins that are more or less separated from one another by thresholds, peninsulas or islands. These divisions and subdivisions coincide approximately with the recognized major physiographic provinces or seas, which were described in great detail by many investigators such as Ryan *et al.*, (1971); Carter *et al.*, (1971); and Biju-Duval *et al.*, (1974).

These divisions or physiographic provinces are shown in *Figure 1*. From west to east they are:

1 - *The Western Mediterranean*, which includes the following basins and seas:

A - The North Balearic Basin.

B - The South Balearic Basin.

C - The Tyrrhenian Basin.

2 - *The Central Mediterranean*, which includes the following basins and seas:

A - The Ionian Basin.

B - The South Adriatic Basin.

3 - *The Eastern Mediterranean*, which includes the following basins and seas:

A - The Aegean Sea and its related basins.

B - The Levantine Basin.

Topographicaly speaking, the physiographic diagram of the Mediterranean floor (*Figure 1A*) as described by Hsü (1977) suggests a threefold subdivision:

1. The North and South Balearic basins characterized by an abyssal plain almost devoid of relief.

2. The back arc basins of the Tyrrhenian and Aegean seas, dotted with numerous seamounts and active volcanoes.

3. The Ionian and South Adriatic basins of the Central Mediterranean and the Levantine basin of the Eastern Mediterranean, dominated by the presence of an arcuate submarine mountain range (the Mediterranean ridge).

According to Hsü (1977), these differences in topography are a manifestation of the distinct tectonic frameworks which controlled the creation of each basin during the tectonic evolution of the Mediterranean.

SECTION 2 - Tectonic Evolution

A detailed description of these tectonic frameworks or of the tectonic evolution of the Mediterranean is not within the scope of this study. In considering the basic and generally accepted facts of the theory of "plate tectonics", it is recognized that it is the dualism between the African plate and the European plate, each having its own movement and interfering with the other, that causes the very complicated situation in the Mediterranean area.

Some 100 million years ago these two plates were separated by an east-west running sea, called Tethys, which was probably larger than the present Mediterranean Sea. Huge masses of sediments accumulated on the shelves and within the basins of this sea. Later on, these sediments were pushed together, folded and pressed ("subducted") into deeper parts of the earth's crust. More recently, (in geological terms about 80 to 40 million years ago) at the end of Cretaceous to Lower Tertiary times, these rocks were ejected again, forming the now well-known mountain belts extending from the Atlas and Betic cordilleras across Sicily, the Appennines, the Alps, the Balkan mountain chain across the Aegean Sea into (44) Anatolia, and from there into the Asiatic mountain ranges. (See *Figure 4C.*)

The process of mountain formation (orogenesis) affected the adjacent areas in different ways: The African plate, lying mainly at the external (i.e. southern) side of the orogenic belt, was only slightly affected and tectonized; in contrast to that, the areas lying between orogenic belts (the internal areas) were submitted to rather drastic tectonic changes.

As a first approximation, the northern extension of the African plate reaches as far as the next orogenic belt, the European plate. This interpretation implies - from a geological point of view - that the Atlas Ranges belong to the Tethian realm and definitely not to the African plate. More to the east, at the Gulf of Sirt, the northern extension of the African plate extends as far as the middle part of Sicily and the Calabrian and Hellenic arch systems.

Within the Mediterranean region the first event of which we have satisfactory geological knowledge is the evaporation of this area at the end of the Upper Miocene period (Messinian time occurred about 7 to 5 million years ago). From deep sea drilling we know that in most parts of the Mediterranean area; salt, sulphates and related sediments of evaporation cycles were deposited. Immediately before Tortonian time this area was covered by the sea (Tethys), at which time a normal exchange with the waters of the World Ocean regulated the salinity.

At the time boundary between the Tortonian/ Messinian stages, probably due to plate motions of Africa versus Europe, the waterways to the World Oceans were drastically reduced: the quantity of water flowing

into this area was about equal or less than the quantity of water which was evaporated. Thus, huge masses of evaporites, at some places more than three kilometres thick, could accumulate.

The depth of the basins is much debated. While one group of geoscientists argues in favour of very deep basins (several kilometres below world sea level) and therefore must postulate a "giant waterfall" cascading from the Atlantic into the Balearic basins, geologists generally think in terms of basins of a maximum depth of several hundred metres, certainly less than 1000 metres. Geological proof besides other evidence lies in the *facies* relationship between normal marine and evaporitic sediments, which, as a matter of fact, are intermingling. This can only occur : *(a)* if the water level within the Mediterranean area did not change for several thousand years and *(b)* if there was a more or less continuous influx of oceanic waters into this region.

During Oligocene and Miocene times (about 35 to 5 million years ago) in several marginal parts of the Mediterranean area we find evidence of huge mass transports in the form of gravity slides (olistostromes), aquatic transport (by rivers) and filling by flysch sediments, all of which show directions of transport from the now existing basins towards the now existing coastal area. This could only have occurred if we assume a total reversal of the relief: a continental or land area must have existed in place of some of the present basins (or parts of them); and a depression (in most cases near or below sea level) at the site of the actual coasts. This paleogeographic reconstruction explains best some of the Maghrebinian flysch deposits, some clastic deposits in parts of the Provencial and Ionian coasts, and olistostromes in Calabria. In other words, there is evidence that at least parts of the now existing Mediterranean basins have been dry land before.

One can compare these reversals of relief with the breakdown of the Aegean land, bridging the Peloponnesos with Anatolia. Parts of this land broke down, although this breakdown did not occur before Pliocene/Quaternary times, or less than about 5 million years ago.

During the Messinian time many of the Mediterranean basins had already subsided, more or less rapidly. The thickness of the evaporites is a realistic gauge for the basinal subsidence. Nevertheless, morphologically speaking, these sinking basins were not deep depressions because they were continuously being filled up by evaporites.

At the Miocene/Pliocene time boundary (about 5.6 million years ago) this situation changed completely and rather suddenly, when the Strait of Gibraltar opened, probably due to tectonical events combined with erosion. From this time on, the exchange of Mediterranean waters with those of the Atlantic was facilitated. The precipitation of evaporites stopped. But now, in the Pliocene time (as before, during the Messinian time) there were but little quantities of clastic debris available around the basins, much too little sediment to fill up the subsiding basins. Accordingly, the subsidence started to develop morphological basins.

The mass deficiency below the basins caused by the subsidence could be compensated at least in part by coastal uplift, a phenomenon well known on many Mediterranean coasts and islands. These movements (in some areas far too complicated to be outlined in detail here) are still occurring today. This can be proved by comparing certain archaeological sites with the actual sea level.

It may be useful to concentrate on the Central Mediterranean area, since the study area lies within it.

During *Tortonian* time (about 10 to 7 million years ago) the Central Mediterranean area (including the Ionian area to the east and northeast) was mainly covered by the sea. Yet, it is unlikely that very deep basins (much below 500 to 1000 metres) existed here. Probably, the entire area was comparable with the present situation of the shelf and Pelagian Basin between Libya, Tunisia and Sicily, but without the tilting towards the Ionian deep sea.

At the begining of *Messinian* time (Late Miocene) this area changed its appearance completely. The sea level dropped in the order of 100 to 200 metres. Sebkhas and salt lakes covered the area. Regions with a subsiding tendency (e.g., *grabens* in the Sirt-Suculo-Tunisian rift system and in more central basins) were filled by thick evaporites. Even at that time, some differences existed between the Pelagian area and that of the present Ionian basin. While the Pelagian area shows only evidence of regional movements (not confined to the Pelagian Basin), the Ionian basin reveals a localized but slow tendency to subsidence, testified by the thickness and extension of the evaporitic deposits.

At the beginning of *Pliocene* time (about 5 million years ago) the sea level rose again and with it a normal marine situation was reinstated. Isostatic readjustments are responsible for further lowering of depressions. Hence, the lithic masses beneath the basins had to escape into the adjacent marginal areas. This finally caused coastal uplifting, a phenomenon which can be observed especially within the more mobile orogenic belts as described above. Up to that time the north extension of the African block within the area under consideration was in the form of a more or less uniform and not very deep sea bottom. In Early Pliocene times two morphologically different domains formed, caused by a huge tectonical system running in an approximately southerly direction from the Strait of Messina, parallel to the east coast of Sicily towards the African coast (the feature identified in *Plate 5* as the Misratah-Malta escarpment). This fault line is the result of the fast sinking of the Ionian basin in the east, while in the west the Malta platform (Ibleo platform), including Sicily and the Pelagian area, behaved like a stable block with minor undulating deformations.

During the *Quaternary* time (about 1 million years ago), due to eustatic sea level changes, the Mediterranean Sea retreated several times. As a result, almost the entire shelf area down to an actual water depth of 120 to 140 metres became dry land, and exposed the seabed down to about 200

metres below the present sea level to wave and current actions. The Quarternary sea level changes are mainly responsible for the morphology of the shelf area and the configuration of the continental coast.

SECTION 3 - Geologic and Tectonic Setting

According to their location with regard to the Alpine belt, the present basins of the Mediterranean are classified into:

- *Inner basins*: mainly those of the Western Mediterranean; i.e. the north and south Balearic basins and the Tyrrhenian Sea and the northeastern part of the Eastern Mediterranean.

- *Outer basins*: mainly the Ionian Sea and the western part of the Eastern Mediterranean.

According to Biju-Duval *et al.*, (1974), several of these basins were formed before the Late Miocene. Geologically speaking, he divided the present Mediterranean into two types of sedimentary basins, which have a different age, structure and genesis. These are:

- *Cenozoic basins*: These basins coincide mostly with the inner basins, namely the Western, Tyrrhenian, Aegean and north Cyprus basins. They are located in areas that were tectonized during the Mesozoic and are superimposed on or close to the Alpine folded belts. The genesis of some of them could be explained in an island arc system of rigid blocks between Europe and Africa.

- *Mesozoic-Cenozoic basins*: These basins coincide mostly with outer basins, namely those of the Central and the Eastern Mediterranean, especially the area south of Sicily, Crete, Cyprus and the Adriatic basin. They are located in areas that have been affected only slightly, or not at all, by the Alpine folding and they form the northern prolongation of the African Continent. Some of them actually continue onshore in the form of sedimentary basins. *Figure 2* is a geological sketch map, showing major geologic elements of the Mediterranean area.

It should be emphasized here that several features characterize both basin types. These features are: the generality of the Pliocene-Quaternary foundering, the recent deltas (*Figure 2*) and the widespread distribution of the Upper Miocene evaporites and their onshore prolongation.

Tectonically, the Mediterranean Sea lies between two entirely different structural realms, as is shown in *Figure 3*. To the north it is bounded by the mobile Alpine belt which constitutes the westward extension of much larger tectonic belts (Tethys) that stretch eastward through the Middle
(44) East and Asia (*Figure 4C*). To the south it is bounded by the stable African platform.

CHAPTER II
THE PELAGIAN BASIN

SECTION 1 Introduction

A - Location and General Setting

Our area of interest is within the Ionian basin which extends north to Sicily and Greece, and is connected to the Adriatic basin by the strait of Otranto; east to a line from Akra Krios south of 34°N; west from there to Ras Amir, eastern Libya; and south to central and western Libya and southeastern Tunisia. On the west the Ionian basin includes the Strait of Sicily and covers an area of approximately 616,000 square kilometres (*Figure 1*). It has a maximum depth of 5093 metres which is the greatest on record for the Mediteranean.

The study area, and the area within which Tunisia and Libya seek to delimit their continental shelves, is only part of the Ionian basin. It is, however, a part which can be identified scientifically as the Pelagian Basin or Platform. It can be seen quite clearly on *Figures 3, 4C, 5* and *Plate 5*.

The Pelagian Basin is bounded by latitudes 32° to 36°N, and 10° to 15°30′ E. It consists of an area, roughly a parallelogram in shape, with a northern boundary running along the Pantelleria Trough. This is a significant boundary, for it is constituted by a deep trough, reaching a depth ranging from 1000 to 1500 metres caused by the sharp subsidence of a down-dropped region between two faults. To the south, the limits of the Basin are bounded by the rift valley "Gafsa-Jeffara Fault", which runs from the edge of the Gulf of Sirt in the east to the longitude of Gafsa (see *Plate 5*), thus embracing within the Basin the northern coastal plain of Libya (the Jeffara Plain) and part of Tunisia. To the east the boundary of the Pelagian Basin runs north-south along a fault zone at the eastern edge of the Medina Bank, identified as the Misratah-Malta escarpment (see *Plate 5*): beyond this line the seabed drops suddenly. To the west the limits of the Basin again run along a north-south, very pronounced, fault zone (Burollet *et al.*, 1978) which extends from Gabes in the south to Tunis in the north, thus encompassing the eastern part of Tunisia. Beyond this north-south axis, to the west, lie the strongly-folded Atlas mountains of central and northern Tunisia. This north-south axis is an important boundary since it marks the division between the stable African platform and the active Atlas fold belt. As we shall see, the tectonic characteristics are quite different on either side of this boundary. Southeastern Tunisia and northwestern Libya are part of the stable African Platform, while in northern and central Tunisia the folded Atlas mountains which trend NNE-SSW are part of the same mountain chain which continues through Sicily and the mainland of Italy, becoming the Appenine mountains (*Figure 4C*). (44)

It should be emphasized that, geologically, the Pelagian Basin is an integral part of the African continent. It must equally be emphasized that it is a *geological* feature. Its surface topography, reflected in the bathymetric maps, is quite incidental. There is a certain "ridging", which means a series of parallel ridges running roughly east-west, which as we shall see are a reflection of the underlying tectonic trends. And the Pelagian Basin tilts to the east, thus giving shallow waters to the west, near the Tunisian coast, and deeper waters towards the eastern limit of the Basin. However, these are superficial topographic features of little consequence. In particular, care must be taken in interpreting the kind of artistic relief map shown as *Figure 1A*. Though useful to illustrate the contrast between the different basins in the Mediterranean, it emphasizes the 200 metre isobath in a way which is misleading, because the 200 metre isobath does not coincide with the limits of the shelf. The *whole* of the Pelagian Basin is part of the shelf and is not to be confused with the 200 metre isobath.

SECTION 2—Geologic and Tectonic Setting

A - Geologic Setting

(i) General Geology

Except for the Atlas mountain areas, north Africa was already largely consolidated before the Cambrian time. Accordingly, Libya as a whole and southeastern Tunisia are situated on the northern part of the African shelf and are part of a cratonic basin on the northern fringes of the African shield, while northern and central Tunisia is typified by Alpine folding and geologically represents a completely different area.

The study area represented by the offshore area of the Pelagian Basin parallel to the African coast in the offshore region of northwestern Libya and southeastern Tunisia (*Plate 6* and *Figure 5*), and the adjacent (45) onshore area (*Figure 6*) as a whole is geologically largely of the Mesozoic and Cenozoic ages.

(45) The pertinent geology of the onshore area (northwestern Libya and southeastern Tunisia: see *Figure 6*), adjacent to the Pelagian Basin, has been described comprehensively by many previous investigators in the region. Detailed description of the geology of this area is not within the scope of this report. In brief, however, the area as it is known from drilling to date is covered by rocks ranging in age from the Mesozoic to the Recent. Mesozoic rocks were deposited in the main trough flanking the African shield, forming a continuous section extending without any interruption from Libya to Tunisia. They are represented by the Nafusa Group and Mizda Formation in Libya and by Zebbag, Aleg and Aboid Formations in Tunisia.

This section can still be extended northward into the offshore area of the (47) (48) Pelagian Basin (*Plates 1 and 2*).

As far as the Cenozoic section is concerned, the area (as we shall see), especially the offshore, is similar to the Sirt Basin in many respects. Stratigraphic columns for the different rock formations in Libya are shown in *Figures 7 to 10.*

(ii) Geology of the Pelagian Basin

The offshore area as known through drilling to date is covered by rocks ranging in age from Mesozoic to Recent.

As far as our present state of knowledge goes, no rocks older than Jurassic are expected to be within reasonable drilling depth in the offshore area. However, a rather complete section of Paleozoic rocks (*Figure 7*) has been encountered in onshore wells, located south of the rift valley (Gafsa-Jeffara fault), which forms the southern limit of the Pelagian Basin.

After the Permian and some time during the Triassic or Jurassic Periods, the Pelagian Basin became submerged under shallow seas which covered most of the Basin and other central Mediterranean areas. The rocks that were deposited during that time interval are similar to those of the sub-Sahara section illustrated in *Figure 8.*

(47)(48) *Plates 1 and 2* show that most of this shallow marine sequence extending from the Saharan Platform to the Pelagian Basin consists of the sandstones of Bir El Jaja and Ouled Chebbi Formations, the red beds and shales of Ras Hamia, Azizia Carbonates, Bu Sceba sandstones, Bu Gheilan dolomites and Bir El Ghnem evaporites. Rocks of this interval in southern Tunisia, northwestern Libya and the Pelagian Basin all show shallow marine conditions while deepening of the seas occurred toward the northwest from these areas.

All these rocks mentioned above predate the formation of the Pelagian Basin. This Basin was formed as a result of faulting events taking place in Mid-Cretaceous time. As a result of these tectonic activities, deep troughs were formed extending from the Sirt Basin in the southeast to the Pelagian Basin in the northwest. These troughs were gradually filled with sediments during the Late Cretaceous and Tertiary times.

Eustatic and possibly tectonic events are thought to be responsible for several important gaps in the rock record as well as for several periods of major sediment accumulation in the Pelagian Basin.

In the Pelagian Basin there are certain high platforms such as the Isis Cretaceous Platform along the margins of low areas within the Basin and covered by sediments ranging in age from Cenomanian to Oligocene. The low areas received more recent sedimentary deposits in Miocene and Recent times.

According to Ziegler (1978), the stratigraphic succession in the Pelagian Basin can be subdivided into two fundamentally different sequences:

1. Upper Cretaceous to Lower Eocene (Figure 9)

Cenomanian to Santonian

Companian to Maastrichtian

Paleocene to Ypresian

2. Middle Eocene to Recent (Figure 10)

Middle-Upper Eocene

Oligocene

Miocene

Post-Messinian to Recent

In the following text and data control (illustrated on *Figures 9 and 10*), one sees the correlation between the onshore and offshore *facies* (rock types) distribution. This distribution shows clearly that the offshore area is correlative with the sub-Sahara and the Jeffara section during the Mesozoic, and with the Sirt Basin since the formation of the Pelagian Basin in Late Cretaceous to Cenozoic times. This correlation with sub-Sahara and Sirt Basin is discussed for each time interval. The reader is referred to *Figure 11* for the location of the wells mentioned in the text.

Upper Cretaceous to lower Eocene (Figure 9)

Rocks of Cenomanian age equivalent to the Nafusa Group in Jabal Nafusa and to the Bahi Sandstone and Lidam carbonates in the Sirt Basin were found to form the reservoir rocks of the Isis oil field and the Elyssa-1 gas well, both offshore. The reservoir is a reefal (or carbonate) development in a marl-limestone dolomite section. These *facies* are found in equivalent rocks in both the Sirt Basin and Jabal Nafusa. In Jabal Nafusa, the Nafusa Group consists of Ain Tobi Limestone which contains reefal beds and dolomites, Yifran marl, and Gharian dolomite, which is a reservoir rock in the Al-Hamada Basin (sub-Sahara). In the Sirt Basin, reefal beds form oil fields in the Bahi area, and Lidam dolomite is also found as a reservoir rock.

The porous limestone in which gas was discovered in Wells Miskar 1 and 2 offshore is equivalent to the Tigrinna Formation which overlies the Nafusa Group in Jabal Nafusa. The Tigrinna Formation ranges in age from Turonian to Santonian. In the Sirt Basin, the Miskar reservoir rock is equivalent to the Etel Formation of Rakb Group. It is composed of evaporites, silty shales and local development of dolomites and limestones.

The thick shale section found in Well A1-137 forms a source rock for a lot of reservoirs in the offshore block. This shale can be adequately correlated with the Hagfa shale and Khalifa shale in the Sirt Basin. Carbonate development within these shales are thicker and more pronounced in the Sirt Basin, where they form reservoir rocks (i.e. Beda,

Dahra, and Zilten carbonates). These rocks range in age from Maastrichian to Paleocene and are equivalent to Zmam and Shurfah Formations in the Hamada Basin (in Libya).

The porous Nummulitic *facies* of Early Eocene age which forms the reservoir for most of the oil discovered offshore is found in oil wells A1-137, B1a-137, the Ashtart oil field, and the Didon-1 all in the Gabes-Sabratha Basin.

These Nummulitic facies are equivalent to the Gialo and Mesdar Formation in the Sirt Basin. These porous Nummulitic carbonates are considered principal reservoir rock for most areas in the Sirt Basin as well.

Middle Eocene to Holocene (Recent) (Figure 10)

Middle Eocene to Upper Eocene rocks are represented by a sequence of shales and limestones encountered in A1-137 in the offshore area. These rocks thin out gradually eastward from A1-137 and are absent in the Jarrafa-1 well to the northeast, due to unconformity (removal by erosion during an interval of geologic time). These rocks are equivalent to the Augila Formation and the Augila shale member in the Sirt Basin.

Unconformably overlying the Augila Formation in the off-shore area are the Arida and Diba Formations of Oligocene age. The Arida Formation consists of limestone which grades westward to sandstone in the offshore area. Sandstones of Oligocene age are penetrated by the B1a-137 well. Similarly, glauconitic sandstones and shales are found in the Sirt Basin forming reservoir rock in some areas. The Diba Formation consists of alternating thin shales and sandstone units with few sandy limestone beds. This Formation grades upward into the Marada Formation of the Miocene age (*Plates 1 and 2*).

The upper Miocene and Pliocene rocks are represented by a thick section of highly varied lithologies. These rocks are restricted to the Gabes-Sabratha Basin and the Sirt Basin. They are equivalent to the Marada Formation of the Najah Group in the Sirt Basin and to the carbonates and marls of the Al-Khums Formation in Jabal-Al-Khums, and eastern Jeffara Plain of northwestern Libya.

Sands and clays of Pleistocene age unconformably overlie older rocks. These are equivalent to the Cardium beds in the Sirt Basin and to the Gargaresh Formation in northwestern Libya.

In brief it may be concluded that the Cenozoic rocks (from Lower Eocene to Recent) in the offshore area are in many respects similar to those of the Sirt Basin in the main landmass of Libya as indicated by the *facies* correlation map for a selected Cenozoic interval of time (*Plate 3*).

(iii) Geologic History

The history of the area as a whole seems to pre-date the Triassic Period. Rocks of Permo-Triassic age were recorded in drill holes unconformably overlying Precambrian basement rocks. In the Middle and Upper Carboniferous, northwestern Libya and southeastern Tunisia were uplifted and strongly eroded, reflecting the beginning of the Hercynian orogeny. As a consequence of this orogeny, Upper Carboniferous and Permain marine sediments are found only in the extreme northern part of Libya and southeastern Tunisia. A partially faulted hingeline (the Jeffaran Arch) that marks the limit of the uplift, separating the eroded Saharan platform to the south and the subsided basin to the north is shown in (45) *Figure 6*. As was stated earlier, this partially faulted hingeline, the Gafsa-Jeffara Fault Line (*Plate 5*), marks the southern limits of the Pelagian Basin.

During the Mesozoic and Cenozoic eras, the general framework was the same : marine transgressions onlapped southeastern Tunisia and northwestern Libya irregularly. During the Triassic and Jurassic period there was deposition restricted to shallow marine sediments, uplifting during the Lower Cretaceous time causing local erosion to Jurassic beds and displace- (45) ment along the Jeffara arch (*Figure 6*), repeated transgression cycle during the Late Cretaceous, followed by local regression during the Eocene; down-warping in Oligocene and Miocene followed by faulting, folding and intense erosion that formed the present relief.

(iv) Paleogeography

The general shoreline orientation and land-sea relationships are discussed in a number of articles by Bismuth *et al.*, (1967), Desio (1968), Bishop (1975) and Ziegler (1978). These paleogeographic sketches and maps suggest that the general orientation of the shoreline was for the most part directed east-west with different *facies* in a north-south direction.

This fact is more apparent during the Mesozoic time after the collapse of the Pelagian Basin which remained as a positive area, in other words, above sea-level, throughout Paleozoic time. The post-Hercynian erosion has modified the land south of the Pelagian Basin in a pattern parallel to the Gharian high, which is oriented in an east-west direction.

Throughout Mesozoic time, areas in northwestern Libya were covered with shallow water while the *facies* indicate deeper water toward the north-west in Tunisia with orientation of the shorelines in an ENE and WSW direction.

Plate 4 shows the land-sea relationship and shoreline directions in the Pelagian Basin during the close of the Mesozoic and most of the Cenozoic eras. These lines, as constructed from the papers mentioned above, are oriented in a WNW-ESE direction throughout Cenozoic time. The lines plunge southwards towards the Sirt Basin east of Misratah and parallel

the present limits of the Sirt Basin. The maximum invasion of the sea was during the Early Eocene, when the shoreline reached the foothills of the Tibesti mountains in southern Libya.

These lines turn back in a north-east direction around the eastern rim of the Sirt Basin and they are oriented in a general east-west direction, past the Sirt Basin towards Egypt.

B - TECTONIC SETTING

(i) General Tectonic Setting

Tunisia comprises two major tectonic or structural units or domains. To the north it belongs to the Alpine domain, where the Tunisian Atlas folded belt takes up the whole of the north and central parts. This belt is an integral part of the mountain chain extending from Algeria, northern and Central Tunisia, across the Mediterranean to Italy and beyond. It is characterized by a well-defined NE-SW tectonic trend.

To the south, this belt is limited by the Saharan flexure (the Gafsa-Jeffara Fault; *Plate 5*) beyond which stretches southern Tunisia to become part of the stable Saharan Platform domain.

The region on a line from Gabes to Tunis, east of the north-south axis (*Plate 5*) forms the coastal plain which is part of the Pelagian Basin. This north-south axis as shown in *Plate 5* marks the division between the stable African Platform and the active Atlas folded belt, with their quite different tectonic characteristics.

Libya as a whole is situated on the Mediterranean foreland of the African Shield, and extends over a Platform of Cratonic basins, belonging to the stable Saharan Platform domain. Although there are few faults in other directions, the dominant tectonic trends (*Plate 5*) are the NW-SE main trends of the Sirt Basin rift system and the W-NW-E-SE tectonic trend of the Jeffara coastal plain or basin, which is genetically related to the first main tectonic trend of the Sirt rift system.

The Sirt Basin is tectonically a NW elongated basin in which the major structural features trend NW-SE comprising one of the main tectonic trends in north Central Africa, the other one being the NE-SW tectonic trend characterizing the Atlas folded belt region in northen and central Tunisia (*Plate 5*).

The Jeffara Basin is located in northwestern Libya, sloping towards the north and is part of the Pelagian Basin. It extends westward into Tunisia to join the coastal plain east of the N-S axis.

(ii) Tectonic Framework of the Pelagian Basin

(a) Major structural features

The major structural features characterizing the Pelagian Basin (shown in *Figure 11*) are in clockwise order from the north as follows:

Ibleo platform

Medina bank (Jeffara-Malta Uplift)

Gabes-Sabratha Basin (Tripolitania Basin)

Kerkennah high

The Pantelleria rift zone

They form alternating areas of shallow basins, located over fundamental zones of weakness which are marked by faulting, and high platforms. These basins and platforms are all underlain by cratonic or continental crust and are closely associated with the major structural features of the African Continent.

Geologically speaking, they all continue onshore in the form of sedimentary basins and arches, mainly the Sirt Basin, the Yifran-Gharyan high, and the Zuwarah uplift.

(b) Tectonic Trends

Most of the existing structural trends in the area are the result of post-Alpine movements, which took place from the Middle Tertiary to the present time. These trends have been described by previous investigators such as Burollet (1967), Mazzone (1976), Fischer (1976), Ziegler (1978), Mazzone *et al.*, (1978), and Burollet *et al.*, (1978). Their studies lead to the recognition of three different tectonic trends, each one of them having played a part in the development of the area at the different stages of its structural evolution.

According to Mazzone *et al.*, (1978), these trends (shown in *Figure 12*) are as follows:

[Not reproduced]

(i) The first and main trend is developed in the Sirt rift system the direction of which is NW - SE. It is marked by a rigid fault block pattern, probably due to deep-seated rifting. It was believed that such a trend was already evident in the Early Mezozoic, and was rejuvenated during Tertiary times (Early and Latest Eocene, the Middle Miocene and Plio-Quaternary). This trend or system divides the substratum into *horsts* and *grabens*, identical to those of the Sirt basin, demonstrating that the Sirt Basin and the Pelagian Basin form part of a single physiographic unit with similar tectonic trends. The outlines of this single unit can be seen to coincide with the shoreline of the Early Eocene epoch (see *Plate 4*). Thus, there can be no doubt that the whole area was once under water, and that although the shoreline has undergone changes, it retains its essential geologic unity.

(ii) The second tectonic trend is developed in a WNW-ESE direction. It appears to be genetically related to the first main tectonic trend since it is conjugate with it, as is evident from the WNW - ESE direction. It has been active since Late Jurassic time, and it is identical to the trend of the Jeffara Coastal plain in northwestern Libya.

(iii) The third tectonic trend is developed along a W-WSW to an E - ENE direction and is expressed by a series of Upper Triassic salt walls or elongated domes.

According to Mazzone *et al.*, (1978), the salt activity appears to have had its main pulsation during the Aptian-Albian time, at the end of the Cretaceous/Paleocene, and during the Middle and Late Eocene epoch.

These tectonic trends make up or are associated with the major structural features characterizing the area. Here it should again be emphasized that to the west of the limits of Pelagian Basin (the north-south axis running north from Gabes) the tectonic trends become very different and reflect what is geologically a different area.

SECTION 3 - Physiography and Bathymetry

A - Physiographical Setting

The Pelagian Basin which parallels the African coast in the offshore of northwestern Libya and southeastern Tunisia forms a very particular area of the Mediterranean. As opposed to the other area in the Mediterranean basin, the shelf here is very wide forming a shallow Pelagian platform which deepens progressively towards the southeast.

In describing the physiography of the area Burollet *et al.*, (1978) stated that:

"East of Tunisia and north of Tripolitania, the Pelagian platform and the southern part of the Ionian Sea form a very particular area of the Mediterranean. As opposed to the other Mediterranean basins, the continental shelf here is very wide and the continental slope descends

> gradually away from the Libyan coast to a depth of 400m. . . the Pelagian platform is shallow, but deepens progressively toward the southeast, the bathymetric lines 400 m, 600 m and even 800 m indicating a wide uncomplicated furrow which joins the gulf of Sidra (Sirt) in the east to the Gabes and chotts troughs in the west. Between the Pelagian Islands, Malta and Sicily the platform is broken by a graben, the throw of which could be greater than 100 m."

As described previously, to the south, the area is bordered by the Gafsa-Jeffara Fault, which runs from the edge of the Gulf of Sirt as far as the longitude of Gafsa (*Plate 5*). On its eastern margin it is bordered by the vast fault zone (Misratah - Malta escarpment) which is connected to that of the east coast of Sicily. As this zone progresses towards the south, its significance weakens so that it does not in fact interrupt the gradual transition between the Gabes and Sirt Basins, these being clearly linked by the tectonic trends. To the north it forms a steep slope resulting in the easternly deepening of the Ionian Basin.

As for the western border, the area is marked by a major north-south fault line. This fault line marks the limits between the stable African Platform to the east and the active Atlas fold belt to the west, as well as the limits between the two major tectonic trends characterizing north central Africa. These are the Sirt rift system trend running NW-SE and the Atlas fold belt trend running NE-SW.

B. Physical Features of the Seabed

Bathymetrically speaking, the area (*Plate 6*) can be divided into three zones all of which are closely associated with major structural features of the African Continent (Tellian and Atlasic directions).

The first zone and the largest of the three comparatively is a flat zone with clear impression of alternating wide furrows and ridges running in a NW-SE direction as indicated by the bathymetric lines (*Plate 6*). This zone is bounded approximately by the Libyan and Tunisian shorelines and by latitude 35° 30′ N and longitude 13° 30′ E, forming a central terrace of about 49,500 square kilometres with a water depth of less than 200 metres. The slope of this zone is about 0.1 per cent. mean down to a depth of 100 metres and .07 per cent. from 100 to 200 metres (Sogreah Report, 1976).

The second zone, east of longitude 13° 30′E (east of Tripoli zone) forms, on the one hand, "the Tripolitanian precontinent" which joins the Libyan landmass to the Malta and Medina banks by a bridge varying in depth from 200 to 500 metres and, on the other hand, forms the margin which plunges east of Al Khums to the depth of the Ionian Basin. This zone is a fairly even zone at a depth always greater than 200 metres. However, if compared with the first zone, it is rather rugged, reflecting in a more pronounced way the physiographic features of the Sirt Basin. It drops down to deeper waters off the Strait of Sicily (Malta trench) and off the Ionian Sea through a series of steps broken up by *grabens*. The main general direction taken by these faults and flexures is NW-SE, parallel to

the structures in southern Tunisia and northwest of Libya (Tellian chains, Jeffara structures). This explains the rift valley Gafsa-Jeffara fault which runs from the edge of the Gulf of Sirt as far as the longtitude of Gafsa (*Plate 5*). This rift valley has been viewed as forming the southern limits of the area.

A secondary direction is also taken by these faults and flexures. This direction is parallel to the major Jeffara-Malta and Tunisian Atlas structures. This accounts for the NNE-SSW uplift between Tripoli and Al Khums (*Plate 5*) which corresponds to the high Jeffara-Malta axis, which constitutes an offshore extension of the Gharian uplift.

The third zone is within the Gulf of Hammamet to the north and west of the Kerkennah Islands. It consists of an underwater basin of particularly rugged relief which is connected to the Pantelleria and Linosa trenches.

The form of the isobaths in this zone seems to indicate the existence of an extension of subterranean Tunisian Atlas structures, running roughly NNE-SSW.

Turning to the geomorphology, it is evident that the topography of the area is closely connected to the existing tectonic trends of the Sirt Basin (46) (*Figure 13*). Throughout the Sirt rift system the tectonic trends run in a NW-SE direction as *horsts* and *grabens* continuing right through into the Gabes - Sabratha Basin in the offshore area (*Plate 5*).

These *horsts* and *grabens* have created alternating high and low areas, running parallel and subparallel to each other and to the Libyan coast as well as to the step faulting pattern of the Jeffara Plain in northwestern Libya.

During the Post-Miocene and Pleistocene times, the entire Pelagian Basin was subjected to subaerial erosion and the series of ridges and valleys created by the tectonic trend of the Sirt Basin became sculptured to give the present geomorphological pattern of well defined parallel ridges and valleys and, because the whole area was tilted downwards towards the east, the water depth was shallow in the west where erosion was more intensive.

In brief we may conclude that the present morphology of the offshore area owes its origin to uplifting and to the creation of the Sirt Basin rift system of *horsts* and *grabens* trending NW-SE. This rift system, created by tectonic trends, continues right through to the Pelagian Basin. The *horsts* and *grabens* - ridges and valleys - running parallel towards the northwest were subjected to subaerial erosion by wind and rain during post-Miocene and Pleistocene times. Later, when the Pelagian Basin was inundated, these same ridges and valleys became the bathymetric pattern of the area. The bathymetry reflects and is the product of the tectonic trends of the Sirt rift system. However, the area remains essentially a geologic unity, and the Pelagian Basin forms a single, uniform shelf area, stratigraphically, physiographically, geomorphologically and structurally.

CHAPTER III

CONCLUSIONS

The data presently available to us leads to the conclusion that Libya as a whole, and southeastern Tunisia as well as the offshore area of northwestern Libya and southeastern Tunisia (commonly described as the Pelagian Basin), are a single cratonic or continental basin on the northern fringes of the African shield. This is not only true according to present day geography but has persisted throughout geologic time as is evident from the existence of several geologically common features of different ages.

Bathymetrically speaking, the offshore area can be divided into three zones all of which are closely associated with major structural features of the African Continent.

The first zone, and the largest of the three, is a rather flat central zone. Approximately, it is bounded by latitude 35° 30'N and longitude 13° 30'E forming a central terrace of about 49,500 square kilometres.[1]

The other two zones are more broken or deeper than the first, as the case may be. The more northern of the two is the Gulf of Hammamet, consisting of an underwater basin of rugged relief, connected to the Pantelleria and Linosa trenches. The other zone is east of longtitude 13° 30'E, the east of Tripoli zone. This zone, though now submerged, was once part of the Tripolitanian landmass, and still provides a link between the Libyan landmass and Malta via the Malta and Medina banks, which form a bridge or "sill" running northwards at an average depth of about 200 metres. The east of Tripoli zone terminates in the east with the Misratah-Malta escarpment which plunges east of Al Khums to the depths of the Ionian basin. The east of Tripoli zone is fairly even at a depth of between 200 and 500 metres.

All three zones form a single uniform shelf - physiographically, geomorphologically, structurally and stratigraphically - between Libya and Tunisia, extending from Cape Misratah westward to approximately Ras Atib (Cape Bon). This shelf is a natural prolongation northwards of the African Continent and therefore of Libya and the southeastern Tunisian landmass.

The Pelagian Basin is a cohesive block and only moderately affected by young tectonism except for the NW-SE directed Sirt rift system which is the dominant tectonic trend in the offshore area. The other two tectonic trends affecting the offshore area are developed in W-NW--E-SE and W-WSW--E-ENE directions. The first appears to be related to and caused by the dominant tectonic trend of the Sirt rift system, while the latter is related to the presence of the salt walls or the elongated domes in the area.

[1] Here the slope is about 0.1 per cent. mean down to a depth of 100 m and 0.7 per cent. from 100 to 200 m.

Besides these tectonic trends, the area is also characterized by several major structural features, namely the Ibleo Platform, the Medina Banks (Jeffara-Malta Uplift), the Tripolitania Basin, the Kerkennah High and the Pantelleria Rift Zone.

Geologically speaking, both the tectonic trends and the major structural features found onshore in Libya continue offshore. The onshore sedimentary basins and arches such as the Sirt-Basin, Yifran-Gharyan high, and Zuwarah uplifts are essentially the same features as are found offshore in the Gabes-Sabratha Basin and the Medina Banks.

The islands of Kerkennah form an integral part of the Pelagian Platform, being built up during Mesozoic and Cenozoic times by the accumulation of sediments in cratonic basins forming on the continental shelf of the African Continent. A thick sequence of Mesozoic rocks and over 2500 kilometres of Ceonzoic rocks were deposited in a NE-SW elongated basin which coincides with the present day elongation of the Kerkennah Islands.

During the *Quaternary* stage (about 1 million years ago), due to eustatic sea level changes, the Mediterranean Sea retreated several times. As a result, almost the entire shelf area down to an actual water depth of 120 to 140 metres became dry land, and exposed the sea bed down to about 200 metres below the present sea level to wave and current actions. The Quaternary sea level changes are mainly responsible for the morphology (or bathymetry) of the shelf area and the configuration of the continental coast.

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