ARBITRATION UNDER ANNEX VII OF THE UNITED NATIONS
CONVENTION ON THE LAW OF THE SEA

REPUBLIC OF THE PHILIPPINES

v.

PEOPLE'S REPUBLIC OF CHINA

SUPPLEMENTAL WRITTEN SUBMISSION OF THE PHILIPPINES

VOLUME II
ATLAS OF RELEVANT FEATURES

16 MARCH 2015

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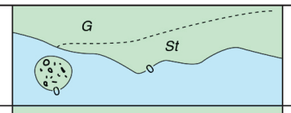
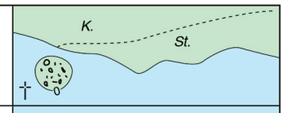
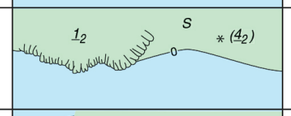
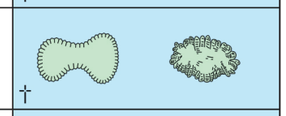
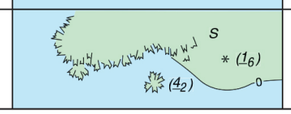
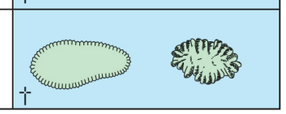
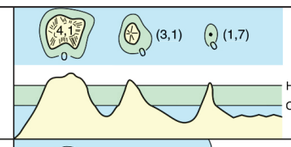
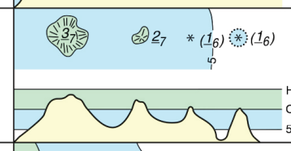
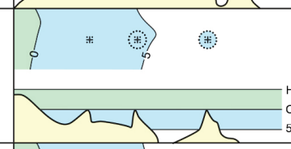
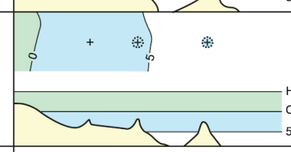
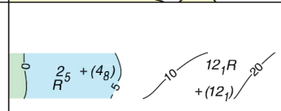
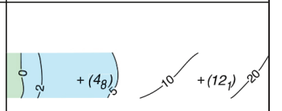
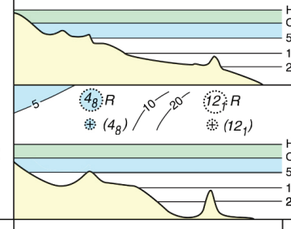
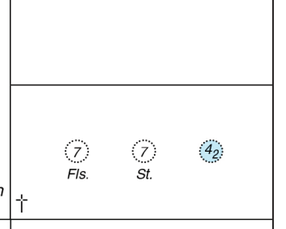
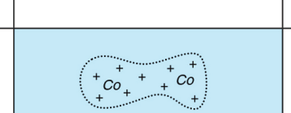
SELECTED NAUTICAL CHART SYMBOLS

PHILIPPINES - INT 1 Symbols, Abbreviations and Terms used on Charts

Types of Seabed, Intertidal Areas (Section J - Nature of the Seabed, page 33)

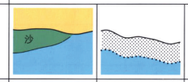
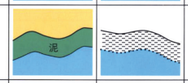
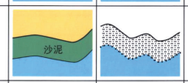
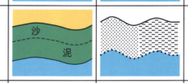
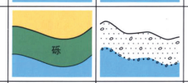
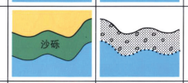
20		Gebiete mit Steinen und Kies *Areas with stones and gravel*	
21		Felsengebiet, trockenfallend *Rocky area, which covers and uncovers*	
22		Korallenriff, trockenfallend *Coral reef, which covers and uncovers*	

Rocks (Section K - Rocks, Wrecks, and Obstructions, pages 35–36)

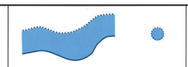
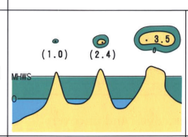
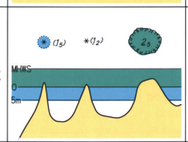
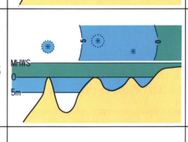
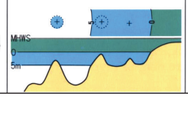
10		Fels ständig über Wasser, Höhe über Höhennull *Rock (islet) which does not cover, height above height datum*	
11		Fels trockenfallend, Höhe über Kartennull *Rock which covers and uncovers, height above chart datum*	
12		Fels in Höhe des Kartennulls *Rock awash at the level of chart datum*	
13		Unterwasserklippe, Tiefe unbekannt, gefährlich für die Überwasserschifffahrt *Underwater rock of unknown depth, dangerous to surface navigation*	
14		Unterwasserklippe, Tiefe bekannt *Underwater rock of known depth*	
14.1		innerhalb des entsprechenden Tiefenbereichs *inside the corresponding depth area*	
14.2		außerhalb des entsprechenden Tiefenbereichs und gefährlich für die Überwasserschifffahrt *outside the corresponding depth area, dangerous to surface navigation*	
15		Für die Überwasserschifffahrt ungefährliche Unterwasserklippe, Tiefe bekannt *Underwater rock of known depth, not dangerous to surface navigation*	
16		Korallenriff, ständig unter Wasser *Coral reef which is always covered*	

CHINA - Symbols identifying direction used on Chinese charts

Nature of the seabed (Section 10, page 23)

10.2	干出滩		Intertidal areas
10.2.1		沙滩	Area with sand
10.2.2		泥滩	Area with mud
10.2.3		沙泥混合滩	Area with sand and mud
10.2.4		沙滩和泥滩	Area with sand or mud
10.2.5		砾滩	Area with gravel
10.2.6		沙砾混合滩	Area with sand and gravel
10.2.7		磊石滩	Area with stones
10.2.8		岩石滩	Rocky area
10.2.9		珊瑚滩	Coral reef

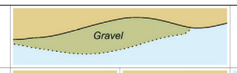
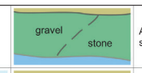
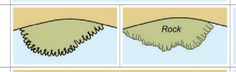
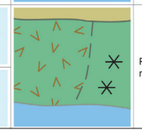
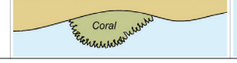
Rocks, wrecks, obstructions (Section 11, pages 25–26)

11.1		危险线	Danger line
11.2		经扫海或潜水员探测	Swept by wire drag or diver
11.3	礁石		Rocks
11.3.1		明礁(屿) (露出平均大潮高潮面，数字系明礁高程，高程基准面以上)	Rock (islet) which does not cover
11.3.2		干出礁 (平均大潮高潮面以下，深度基准面以上，数字系干出高度)	Rock which covers and uncovers
11.3.3		适淹礁(深度基准面适淹)	Rock awash at the level of chart datum
11.3.4		深度不明的暗礁 (深度基准面以下)	Dangerous underwater rock of uncertain depth

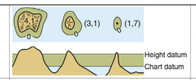
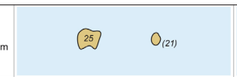
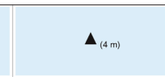
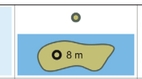
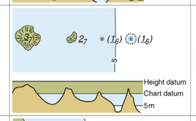
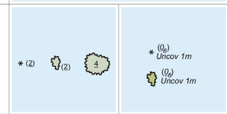
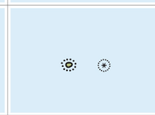
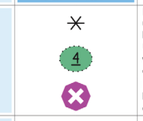
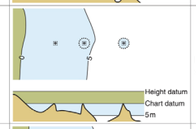
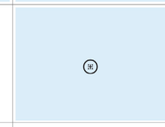
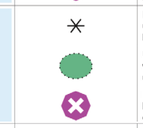
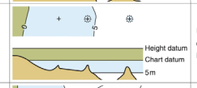
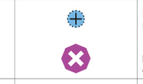
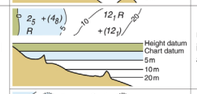
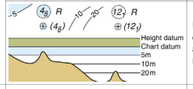
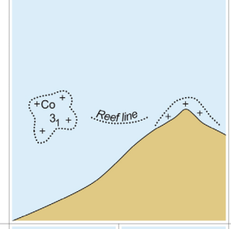
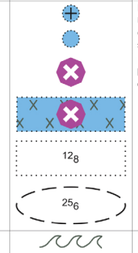
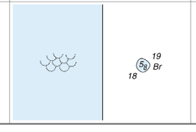
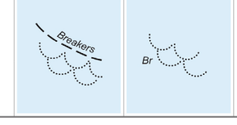
SELECTED NAUTICAL CHART SYMBOLS

UNITED STATES Chart 1

Types of Seabed, Intertidal Areas (Section J - Nature of the Seabed, page 48)

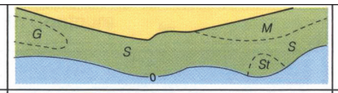
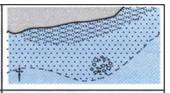
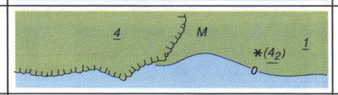
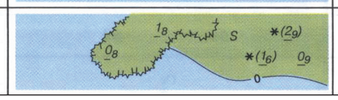
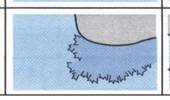
20		Area with stones and gravel				Areas of gravel and stone
21		Rocky area, which covers and uncovers				Rocky ledges or coral reef
22		Coral reef, which covers and uncovers				

Rocks (Section K - Rocks, Wrecks, Obstructions, Aquaculture, pages 51–52)

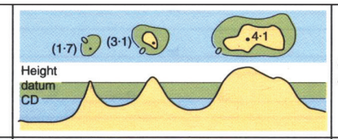
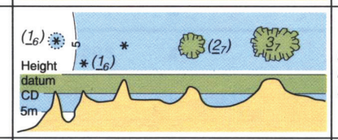
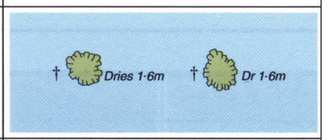
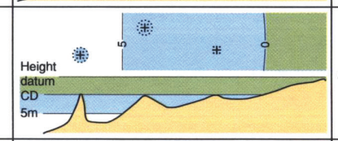
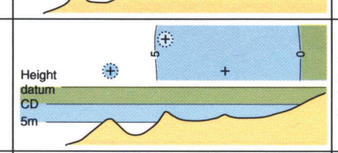
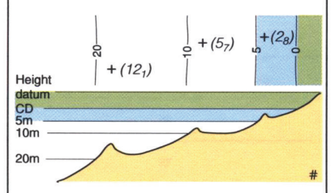
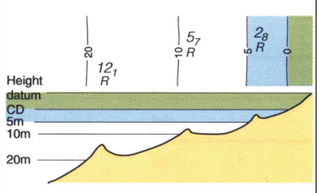
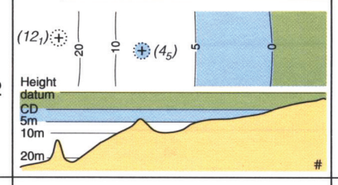
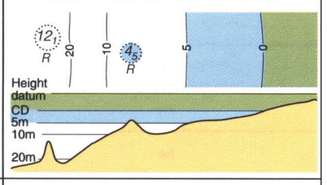
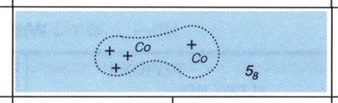
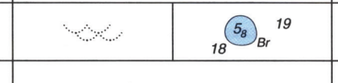
10		Rock (islet) which does not cover, height above height datum					Land as a point at small scale Land as an area, with an elevation or control point
11		Rock which covers and uncovers, height above chart datum				Rock which covers and uncovers or is awash at low water Underwater hazard which covers and uncovers with drying height Isolated danger of depth less than the safety contour
12		Rock awash at the level of chart datum					Rock which covers and uncovers or is awash at low water Underwater hazard which covers and uncovers Isolated danger of depth less than the safety contour
13		Underwater rock of unknown depth, dangerous to surface navigation					Dangerous underwater rock of uncertain depth Isolated danger of depth less than the safety contour
14.1		Underwater rock of known depth; inside the corresponding depth area	12 *Rk*	27 *Rk* 21 *R*			Underwater hazard with a depth of 20 meters or less Underwater hazard with depth greater than 20 meters
14.2		Underwater rock of known depth; outside the corresponding depth area, dangerous to surface navigation	5 *Rk*	4 *Rk* 5 *R*			Isolated danger of depth less than the safety contour
15	35 *R*	Underwater rock of known depth, not dangerous to surface navigation	35*Rk*		35 *R.* +(35)		Underwater hazard with a depth of 20 meters or less Underwater hazard with depth greater than 20 meters
16		Coral reef which is always covered					Dangerous underwater rock of uncertain depth Obstruction, depth not stated Isolated danger of depth less than the safety contour Safe clearance shoaler than safety contour Safe clearance deeper than safety contour Safe clearance deeper than 20 meters
17		Breakers					Overfalls, tide rips; eddies; breakwaters as point, line, and area

UNITED KINGDOM Chart 5011

Types of Seabed (Section J - Nature of the Seabed, page 28)

20		*Area of sand and mud with patches of stones or gravel*		
21		*Rocky area*		
22		*Coral reef*		

Rocks (Section K - Rocks, Wrecks, Obstructions, pages 30–31)

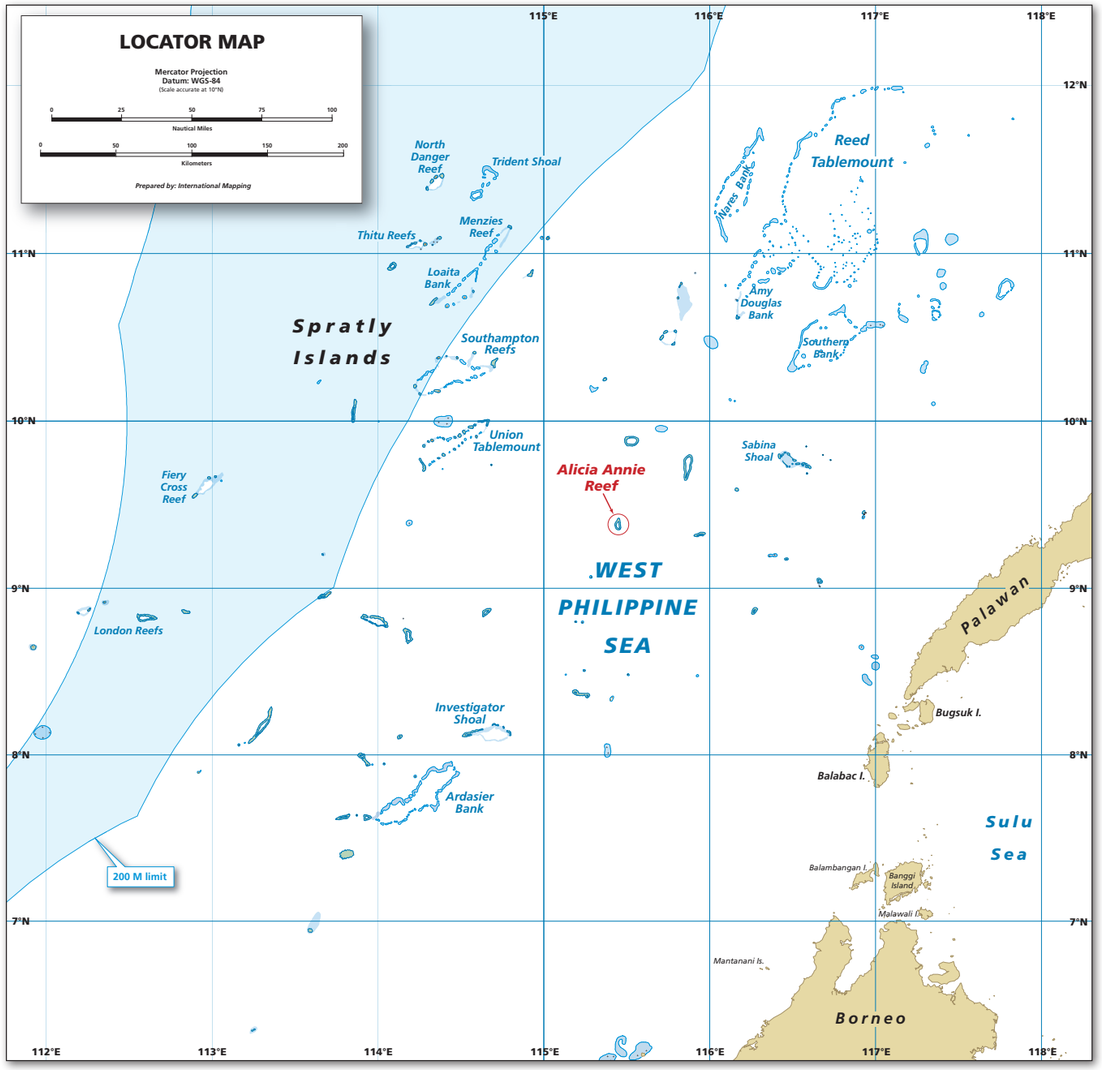
10		*Rock which does not cover, height above height datum*	
11		*Rock which covers and uncovers, height above Chart Datum, where known*	
12		*Rock awash at the level of Chart Datum*	
13		*Underwater rock over which the depth is unknown, but which is considered dangerous to surface navigation*	
14		*Dangerous underwater rock of known depth:*	
14.1		*inside the corresponding depth area*	
14.2		*outside the corresponding depth area*	
15	30 *R*	*Underwater rock not dangerous to surface navigation*	
16		*Coral reef which is always covered*	
17		*Breakers*	
d		*Discoloured water*	*Discol* † *Discold*

ALICIA ANNIE REEF

Also known as:

Chinese: Xian'e Jiao (仙娥礁)
Philippine: Arellano Reef

Coordinate Location: 09°23'00"N - 115°27'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 115.1 M
Distance to Hainan: 620.9 M
Claimed by: China, Philippines, Vietnam
Occupied by: Unoccupied



Satellite Image

Alicia Annie Reef
(WorldView-2, 12 March 2014)

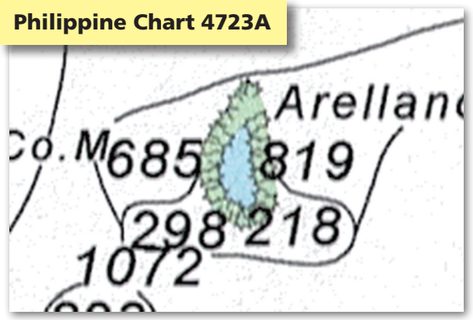
ALICIA ANNIE REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Alicia Annie Reef (9° 22' N, 115° 26' E) lies 33 miles SW of Ayungin Shoal, dries and enclose a shallow lagoon dotted with numerous rocks visible at high water. Anchorage may be obtained off the N end in depths of 55 meters (30 fm).

Philippine Chart 4723A

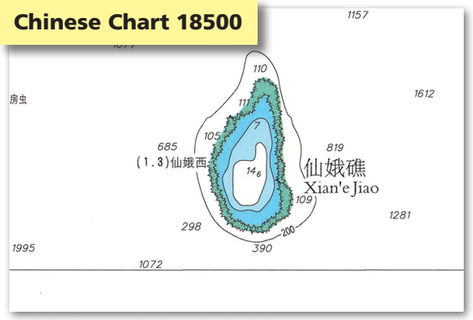


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Located approximately 30 nautical miles west by north of Xinyi Reef, it is an exposed coral reef. The distance north to south is approximately 5 nautical miles, and the width is approximately 3 nautical miles. At the north end of the atoll, there is an approximately 1.3-meter high islet. In the center of the atoll there is a lagoon, and its northwest side has an opening that is linked with the lagoon.

Chinese Chart 18500



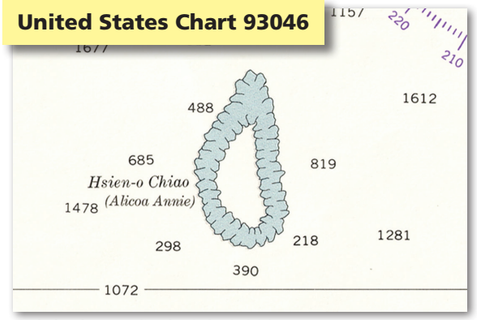
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC18

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Alicia Annie Reef (9°24'N., 115°26'E.) lies 26 miles W of First Thomas Shoal with its axis in a N-S direction. The reef, which dries, completely encloses a lagoon, however, there is no entrance to it. At LW, the N and S ends of the atoll are well above-water and the entire edge of the reef dries about 0.3m.

At the N end, a spit which appears to be white sand, dries 1.2m. Several large and a few small rocks mark the SE corner of the reef. The outer edge of the rim of the reef is steep-to and breakers were observed on the NE side with a moderate NE breeze.

United States Chart 93046



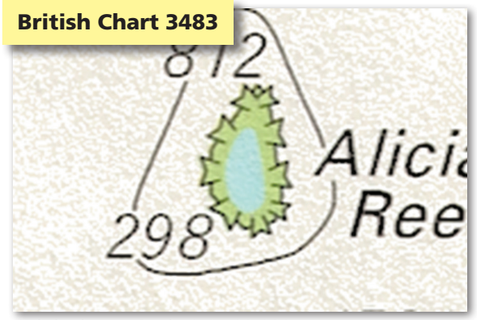
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC52

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Alicia Annie Reef (9°22'·78N 115°26'·85E), which dries, encloses a shallow lagoon, and has numerous rocks on it which are just visible at HW. There is a small, low, white coral sand cay at its N end.

Anchorage. HM Surveying Ship *Iroquois* anchored 1 cable off the N end of the reef, in a depth of 55 m (30 fm). The lagoon is probably accessible to boats at HW.

British Chart 3483

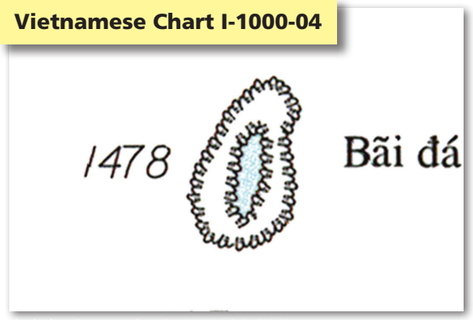


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

ALICIA ANNIE REEF

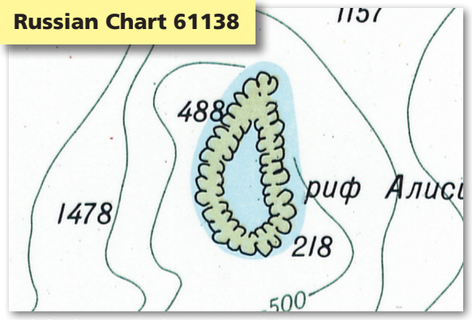
Additional Charts

Vietnamese Chart I-1000-04



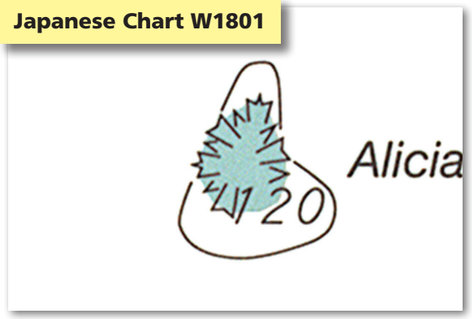
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Alicia Annie Reef runs in a north-south direction for about 5 M, is approximately 3 M wide, and encloses a lagoon with no entrance. All the charts and satellite imagery are consistent in showing the reef as a continuous feature that is not above water at high tide. As depicted on all the charts, the entire reef dries at low tide. The satellite imagery shows a thin band of white along the eastern and northwestern edge of the reef, which depicts waves breaking over the reef that is close to the surface. The Chinese chart shows locations where the depth is 14 metres and 7 metres. Seaward of the edge of the reef, the waters quickly reach a depth of 200 metres and deeper. The sailing directions, however, suggest that there may be some small features that are above water at high tide. The Philippines sailing direction states that the reef encloses a "shallow lagoon dotted with numerous rocks visible at high water". The U.S. sailing direction says that "several large and a few small rocks mark the SE corner of the reef". The U.K. publication states that the reef "has numerous rocks on it which are just visible at HW. There is a small, low white coral sand cay at its N end". And China's sailing direction reports that "[a]t the north end of the atoll, there is an approximately 1.3 metre high islet".

Historical and Anthropological Information

British Sailing Directions from 1906 state that Alicia Annie Reef was reported in 1865 by Captain R. Kirby, who noted the presence of a wreck and several boats at or near the reef.[1] At least one of these boats appeared to have been fishing.[2] No record of human habitation or occupation has been found.

In March 1995, "the Philippine navy detained four PRC boats and 62 fishermen near Alicia Annie Reef".[3] In 1998, the Philippine Navy again arrested 20 Chinese fishermen for alleged "poaching" at or near the feature.[4] Although fishing is done in its vicinity, Alicia Annie Reef remains unoccupied.

The Status of the Feature under UNCLOS

Alicia Annie Reef is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. According to the Philippine and United Kingdom sailing directions, Alicia Annie Reef contains rocks visible at high water. There is no record of human habitation at Alicia Annie Reef. Other than fishing in the vicinity of the feature, the Philippines has identified no activity of any kind.

References

[1] United Kingdom Hydrographic Office, *China Sea Directory*, Vol. II (5th ed., 1906), p. 247. SWSP, Vol. IV, Annex 393.

[2] *Id*.

[3] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 37. SWSP, Vol. V, Annex 445.

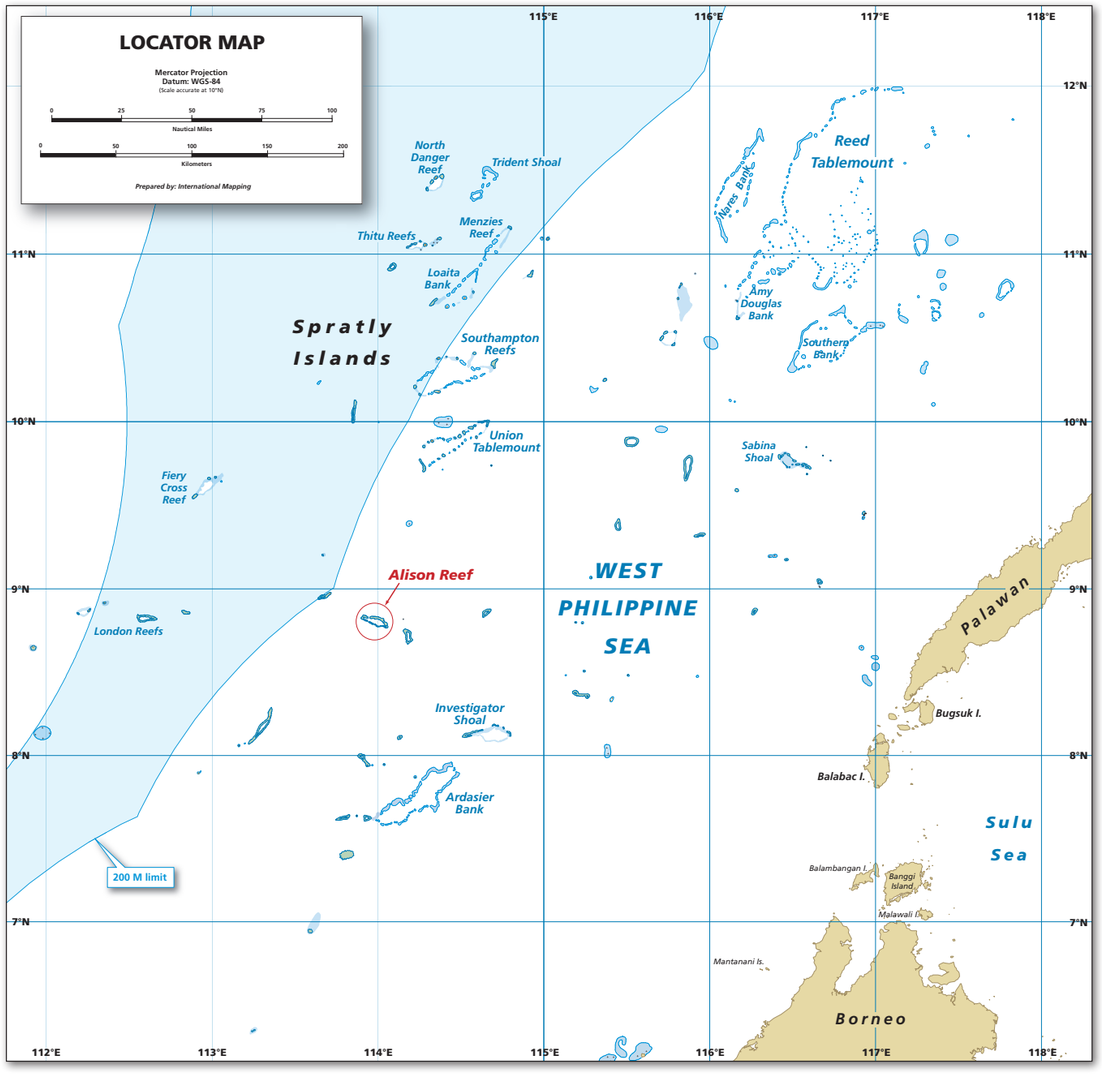
[4] "Spratlys a Haven for Illegal Poachers-Mercado", *Philippines Headline News Online* (2 Dec. 1998). SWSP, Vol. IV, Annex 414.

ALISON REEF

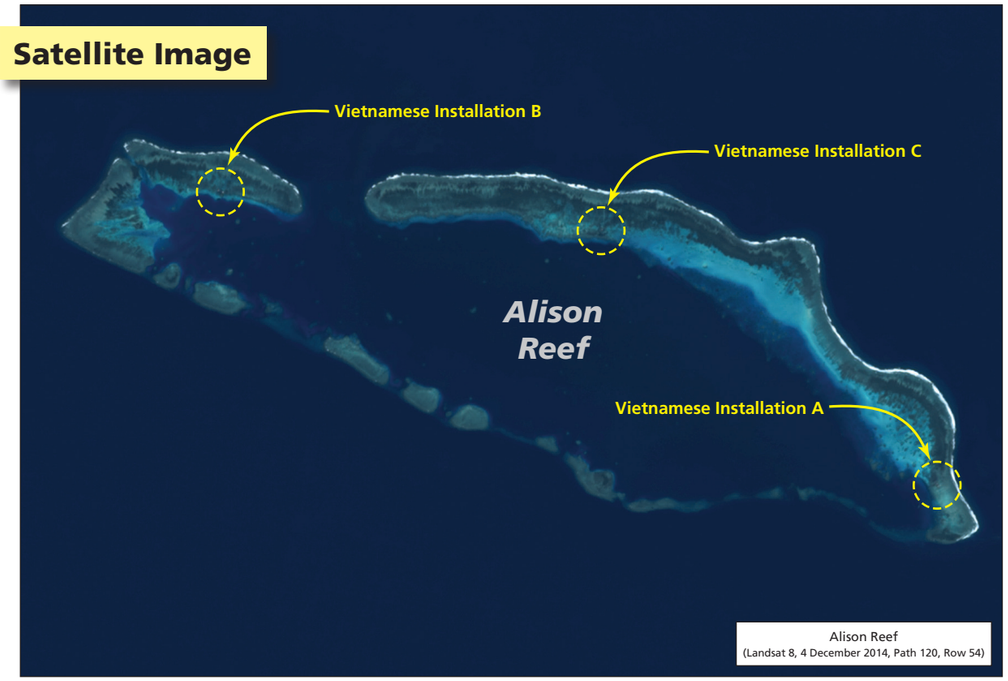
Also known as:

Chinese: Liumen Jiao (六门礁)
Philippine: De Jesus Reef

Coordinate Location: 08°49'00"N - 114°06'00"E
Nearest High Tide Feature: Pearson Reef, 14.2 M
Distance to Palawan: 177.5 M
Distance to Hainan: 609.9 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam

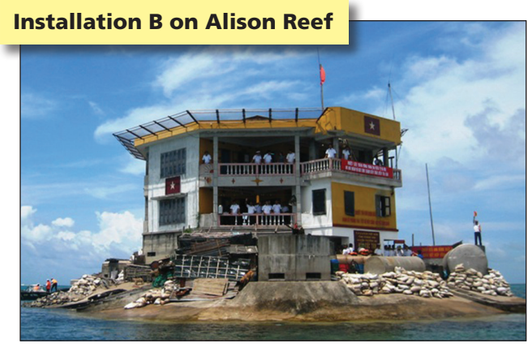


Satellite Image

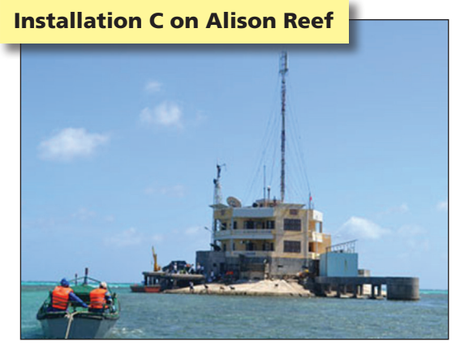


Installation A on Alison Reef

Installation B on Alison Reef



Installation C on Alison Reef



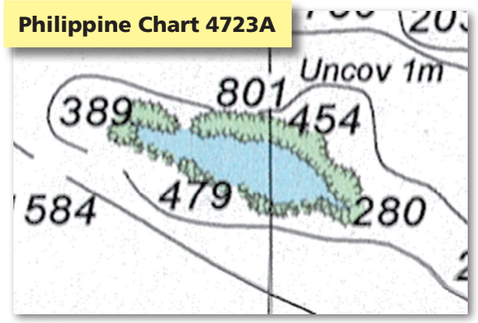
ALISON REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

ALISON REEF, which dries and encloses a lagoon, lies with its W extremity (8° 5l' N, 113° 54' E) 15 miles SE of Hizon Reef and extends 11 miles ESE. The lagoon appears to be foul and shallow where an entrance with a depth of 9 meters (30 ft) exist on the N side and 2.5 miles from the W end of the reef. The S side of the reef consists of a number of drying patches, between which there are narrow channels with depths of 9 meters (30 ft). Anchorage can be obtained close to the W and SE ends of Alison Reef, in depths of 60 meters (33 fms); also along its S side and off the N entrance to the lagoon in depths of 9 meters (30 ft).

Philippine Chart 4723A

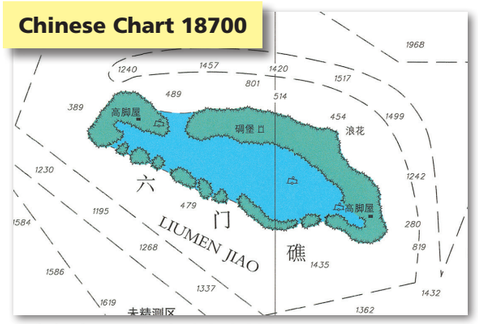


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Liumen Reef - Located approximately 20 nautical miles southeast of the Bisheng Reef, it is an atoll that is trending northwest-to-southeast. There is a lagoon in the middle. There are 6 openings on the southwest sides of the atoll, and there is no specific information available on them yet. The northern side of the atoll is exposed approximately 0.9 meters. The northwest part of the atoll has a 650-meter wide and 9.1 meters deep lagoon that can be navigated and entered. On the west side and southeast side of the atoll, there are anchoring grounds with a water depth of approximately 60 meters.

Chinese Chart 18700



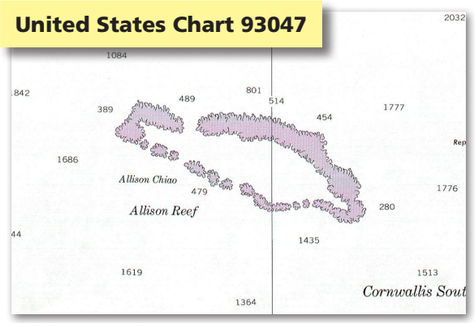
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Allison Reef (Alison Reef) (8°50'N., 114°00'E.) is a drying atoll-reef about 11 miles long in a general NW-SE direction forming a lagoon which appears to be shallow and foul. It lies with its W end about 13 miles SE of Pearson Reef. On the N side in a position about 2.5 miles W of the W end there is an entrance 0.35 mile wide with a depth of 9m. The side is strewn with small rocks. At LW, some of these uncover about 0.9m.

The S side consists of a number of isolated drying patches between which there are narrow channels with depths of about 9m. At HW, Allison Reef does not uncover, but it can be located by the breakers, which can be seen at a distance of 5 or 6 miles on a clear day.

United States Chart 93047

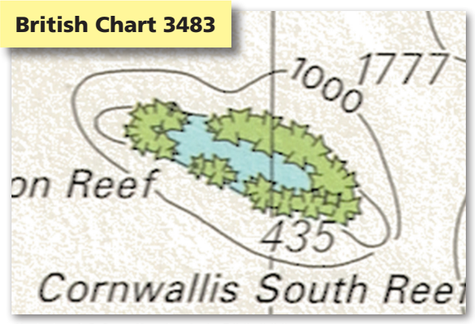


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Alison Reef (8°48'·60N 113°58'·70E) extends 11 miles from WNW to ESE. The reef, which dries, encloses a lagoon which appears foul and shallow. The S side of the reef consists of a number of drying patches, between which there are narrow channels with depths of 9 m. There is an entrance to the lagoon, on the N side of the reef, towards the W end, which is 3 ½ cables wide and has a depth of 9 m.

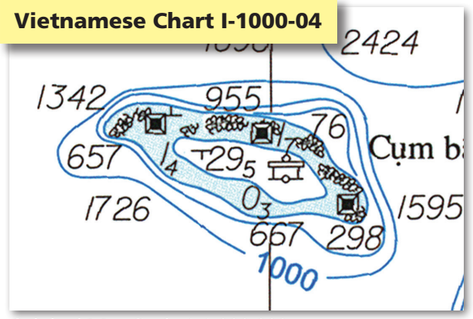
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

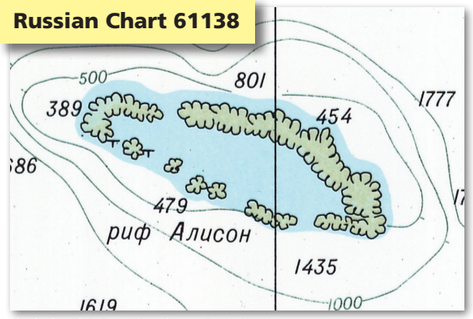
ALISON REEF
Additional Charts

Vietnamese Chart I-1000-04



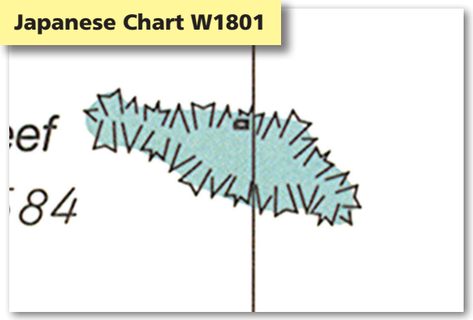
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



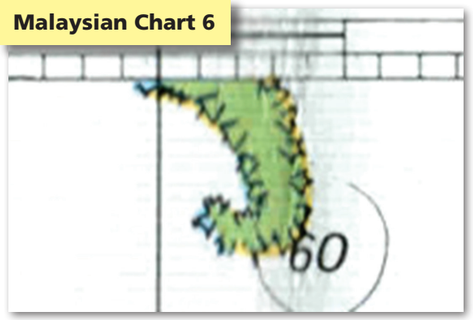
Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



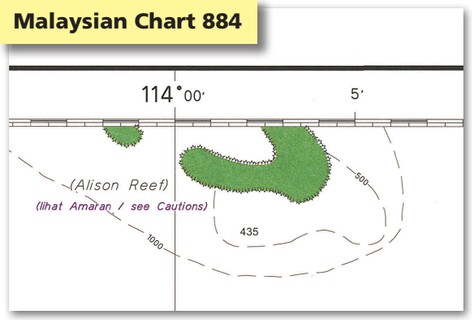
Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 6



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Alison Reef, which dries at low water, is approximately 11 M long in a northwest-southeast direction. It encloses a lagoon and has several entrances. In the northern part of the reef, some small rocks uncover at low water to 0.9 metres. The Chinese chart shows two small black dots in the northwest part of the reef and in the southeast part; on the Vietnamese chart three black squares are shown in the northwest, north-central and southeastern parts of the reef; and on the Japanese nautical chart one small rectangle is depicted in the north-central part of the reef. These symbols all represent the man-made structures that have been built on the reef. These man-made structures can be seen clearly in the photographs. Malaysian Chart 6 and the U.S., British, Philippine, and Russian charts show only the reef. At high water, the entire reef is submerged. Only the Vietnamese chart (No. 1-100-4) shows bathymetric information for the lagoon, indicating depths of 0.4 metres and 29.5 metres at two locations. All the nautical charts show that the reef becomes rather deep (180 metres and deeper) close to its outer edge.

Historical and Anthropological Information

No record of human habitation has been found prior to occupation by the Vietnamese military in 1988.[1] The Vietnamese are reported to have made improvements in 1999 to structures on the feature.[2]

The Status of the Feature under UNCLOS

Alison Reef is a low-tide elevation under Article 13. The nautical charts and sailing directions confirm that at high tide Alison Reef is submerged. There are small rocks that uncover at low water to 0.9 metres. It is 177.5 M from Palawan and 14.2 M from the nearest high-tide elevation, Pearson Reef. The Philippines knows of no record of human habitation prior to occupation by the Vietnamese military in 1988.[3]

References

[1] Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

[2] *Id.*, p. 150.

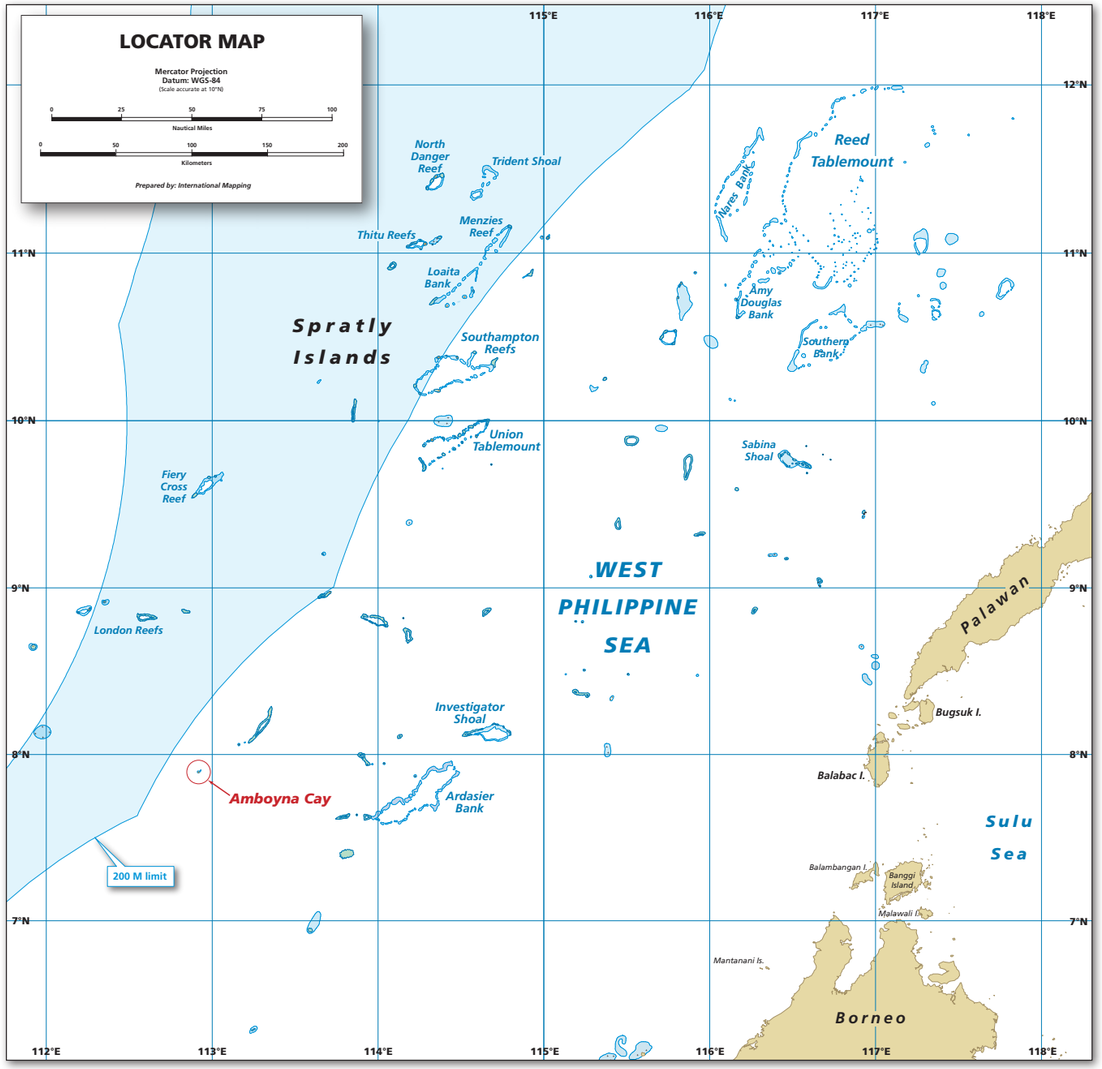
[3] Jianming Shen, "International Law Rules and Historical Evidences Supporting China's Title to the South China Sea Islands", *Hastings International & Comparative Law Review*, Vol. 21, No. 1 (1997-1998), p. 56. MP, Vol. VII, Annex 260. *See also* Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

AMBOYNA CAY

Also known as:

Chinese: Anbo Shazhou (安波沙洲)
Philippine: Kalantiyaw/Datu Kalantiaw

Coordinate Location: 07°53'51"N - 112°55'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 238.3 M
Distance to Hainan: 643.2 M
Claimed by: China, Malaysia, Philippines, Taiwan, Vietnam
Occupied by: Vietnam



Satellite Image

Amboyna Cay
(QuickBird-2, 6 March 2014)

Amboyna Cay as seen from the sea

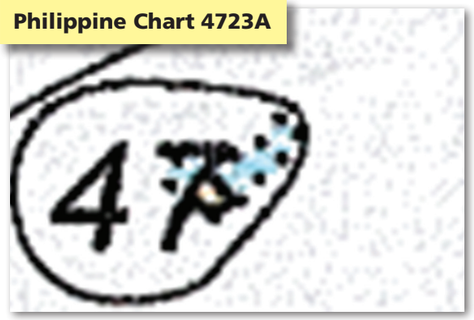
AMBOYNA CAY

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

KALANTIYAW CAY (7° 53' N, 112° 55' E) is 2 meters (8 ft) high and situated 62 miles ENE of Antonio Luna Reef. It has two parts consisting of the E which has a sand beach and broken coral and the W strewn with debris and covered with a bed of guano. It is surrounded by coral ledges which partly dry and upon which the sea breaks heavily with any swell. An obelisk 3 meters in height stands on the SW part of the cay. A reef extends 0.5 mile NW from Kalantiyaw Cay while a bank extends 1 mile NE with a depth of 7.3 meters (24 ft) over it…

Philippine Chart 4723A



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

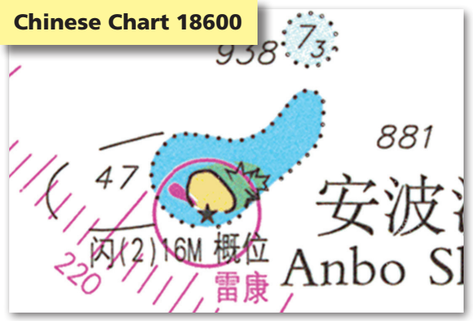
2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Anbo Sandbank - Located approximately 70 nautical miles east of Nanwei Bank, it is comprised of the east and west parts. The east part is made up of sand and crushed coral. The west part is covered by guano, and sand and gravel is scattered. The sandbank which is exposed above the surface of the water is approximately 213 meters in length, approximately 146 meters in width, and has an altitude of approximately 2.5 meters. Surrounding it are coral reefs that are partially exposed above the surface of the water and approximately 2 chains away from shore. Thus, whenever there are swells, it stirs up huge breaking waves on top of it. There is an approximately 2.7-meters high obelisk on the southwest part of this sandbank.

There is a submerged reef that extends approximately 0.5 nautical miles southwest from Anbo Sandbank. There is an approximately 2 chain-wide shoal that also extends from this sandbank approximately 1 nautical mile northeast. On this shoal, at a distance of 3.5 chains from the sandbank, there is a water depth of 7.3 meters. The water depth on the outer edge of the shoal is 16.5 meters, and the reef edge is very precipitous. However, it is possible to find an anchoring ground with very good shelter.

…The middle section of Anbo Sandbank (a flagpole has been erected)…

Chinese Chart 18600



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC24

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

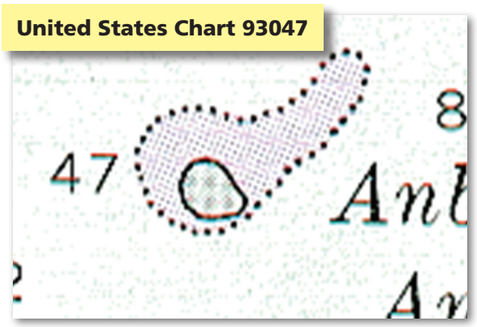
Amboyna Cay (Anbo Shozhoa) (7°52'N., 112°55'E.) lies near the SW edge of the Dangerous Ground. This cay is about 2m high with a sand beach, broken by coral, and rubble. Coral ledges which partly dry and on which the sea breaks when there is a swell, extend 0.2 mile offshore in places.

An obelisk, 3m high, stands on the SW part of the cay. The cay is also marked by a light, which has a racon.

Coral banks, on which the sea breaks heavily, extend 0.5 mile NW and 1 mile NE from the island with depths of 7.3m to a distance of over 0.3 mile offshore on the latter bank. A reef, having depths of 3.7 to 4.6m, is reported to lie about 0.8 mile NW of the cay.

The W and SW part of Amboyna Cay is fringed by steep-to reefs to a distance of 0.3 mile. The W and SW reefs gradually shoal from depths of 7.6m at 0.2 mile offshore to 1.5m at 27m offshore. About 0.1 mile S of the island, the fringing reef has a depth of 7m.

United States Chart 93047



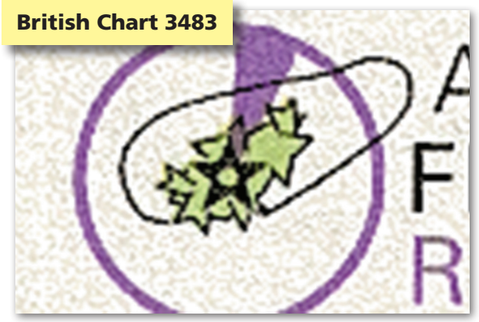
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Amboyna Cay (7°53'·49N 112°55 '·17E) has two parts. The E part consists of a beach of sand and broken coral; the W is covered with a bed of guano, strewn with debris. The cay is surrounded by coral ledges which partly dry and extend 2 cables offshore in places; with any swell, the sea breaks heavily over the ledges. A light (2.54) is exhibited from Amboyna Cay, and an obelisk, 3 m in height, stands on the SW part of the cay.

From Amboyna Cay a reef extends 5 cables NW, and a bank, 2 cables wide, extends 1 mile NE. The bank has a depth, at 3½ cables from the cay, of 7·3 m, and at its outer edge, where it is steep-to, a depth of 16·5 m.

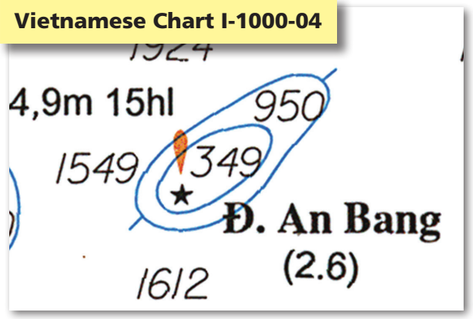
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

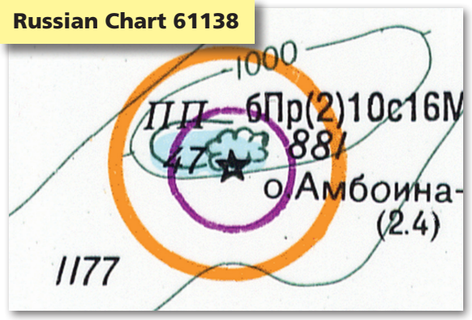
AMBOYNA CAY
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138

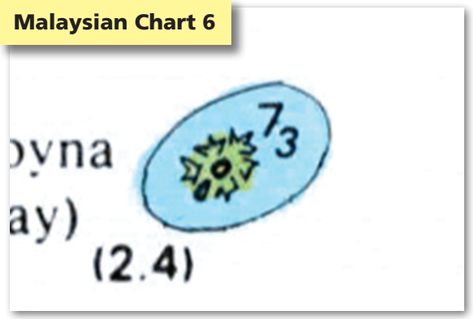


Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 6



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Geographic/Hydrographic Observations by Dr. Robert Smith

Amboyna Cay is 2 metres high and has two parts. In the east, there is a sand beach with broken coral; in the west, there is sand, gravel, and guano. There are coral ledges that extend 0.2 M in places and which partly dry. The sandbank, which is exposed above the surface of the water, is approximately 213 metres in length, 146 metres wide, and 2.5 metres high. Surrounding the sandbank are coral reefs that are partially exposed above the water's surface. A 3-metre high obelisk stands on the southwest part of the cay. There is a man-made structure next to the obelisk. The British, Chinese, Vietnamese, Russian, and Japanese nautical charts show a symbol that represents a light beacon. The Chinese chart depicts a colored circle indicating a feature that is above water at high tide. The US chart shows a circular feature that represents the island. There is a man-made structure which is seen on both the satellite imagery and photographs occupying the entire "foot print" of the reef that is above water at high tide. Structures may have also been built on submerged areas.

Historical and Anthropological Information

Amboyna Cay was reported by the British ship *Walpole* in 1763, and again by the *Amboyna* in 1802.[1] In 1864, the feature was surveyed by the *H.M.S. Rifleman*, which "placed a beacon upon both [Spratly Island and Amboyna Cay] and also planted cocoanut trees and vegetables".[2]

By 1877, the two features had been visited by Messrs. James, Graham and Simpson, who discovered that both "were entirely uninhabited, [but] that they contained considerable deposits of guano".[3] The following year, the British colonial authorities granted those individuals permission to exploit guano on and hoist the British flag over Amboyna Cay. Operations reportedly commenced on the feature later that year, and "two cargoes of guano" were taken off in 1879. During one such trip, Mr. Graham and his assistant "were attacked on Amboyna Cay by their own Chinese coolies, two of whom they shot dead. The other coolies were tried and sentenced ... for this attack".[4]

In May 1889, Amboyna was visited by *H.M.S. Wanderer*, which reported that the feature was uninhabited and was believed to have been so for a minimum of five years.[5] United States Sailing Directions from 1915 report, presumably on the basis of the *Wanderer's* visit, that in 1889:

> Remains of huts, which had been made of stones, pieces of coral, planks and bamboos, parts of an old boat, etc., were seen on the cay (1889), all covered with a white coating of guano, denoting that it is a long time since anyone was working guano, or living on Amboyna Cay.[6]

In September 1889, a 3-year license to exploit guano on Amboyna Cay (and Spratly Island) was granted to the Central Borneo Company at a rent of 15 pounds per year. However, "[t]here is no evidence that the Central Borneo Company ever took any action under their lease".[7]

An internal British memorandum from 1932 reports:

> [f]rom investigations made at the Foreign Office at the time, it appeared that no foreign Government had officially claimed the sovereignty over [Spratley Island and Amboyna Cay], and that both islands were so far distant from Borneo on the one side, and the Malay Peninsula on the other, that they could not fairly be claimed as dependencies of either of these territories on the ground of contiguity and geographical position.[8]

British Sailing Directions state that "[i]n 1933 there were traces of old habitations and there was a flagstaff and a temporary beacon on the cay".[9]

France claimed Amboyna Cay and several other features in the early 1930s. The British Admiralty rejected the claim in February 1933, concluding it had "no basis in international law and call[ing] for a strong protest without any further delay".[10] In opposing France's claim, the Admiralty observed that "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[11]

French archival records indicate that in April 1933, the captain of the Frigate *Laperouse* "took possession of the small island named Amboyna Cay" on behalf of France.[12] The same year, France formally claimed the feature along with several others,[13] attaching Amboyna Cay to the Baria Province.[14] *The New York Times* reported in July 1933 that Amboyna Cay formed "part of a large group of dots on the ocean which are fragments of coral reefs and rise not more than eight feet above the sea". It cited U.S. State Department officials as suggesting "that they had never even heard of the islands [claimed by France] until mention of them was made in press dispatches".[15] Because "Britain has never formally renounced its claim to Spratly Island and Amboyna Cay",[16] British government records from 1933 reflect internal discussions on their legal status in light of France's claim.[17]

Amboyna Cay and several other features were annexed by Japan in 1939.[18]

Amboyna Cay was occupied by South Vietnamese marines in or around 1973, at which time it was unoccupied.[19]

AMBOYNA CAY

Historical and Anthropological Information, cont'd

In 1978, Malaysian forces landed and "reportedly erected a monument" on the cay.[20] Malaysia claimed the feature in 1980.[21] In so doing, it claimed a territorial sea, but not an EEZ surrounding it.[22] The Malaysian monument was later "removed by Vietnamese forces",[23] who "had assumed full control of the island at least by 1984".[24]

In June 1995, "Vietnam inaugurated a lighthouse on Amboyna Cay".[25] The feature also contains "[g]un emplacements and gun shelters".[26]

A Vietnamese news article quotes an official on Amboyna Cay as stating that "[o]ut here, green vegetables are the most precious commodity. Every year, each person is provided with only 10kg of soil to grow vegetables". The same article also quotes a soldier as claiming that the "soil here [on Amboyna Cay] is even more expensive than the land in [Ho Chi Minh] City. It is worth its weight in diamonds".[27] According to the article, "it is normal for waves to be rolling over the island and it is very difficult to catch fish and grow vegetables to supplement meals".[28]

The Status of the Feature under UNCLOS

Amboyna Cay is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. This tiny feature is comprised of two parts: a sand beach with broken coral in the east; and sand, gravel and guano in the west. Collectively, the entire feature covers only 0.029 km^2. Amboyna Cay was first occupied by the South Vietnamese military in 1973,[29] and has been consistently occupied by Vietnam since approximately 1984. They are there not to colonize the feature but to enhance Vietnam's sovereignty claim. Other than limited extraction of guano in 1879, there is no record of economic activity on the feature.

References

[1] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom (23 Feb. 1933), p. 5. SWSP, Vol. III, Annex 364.

[2] *Letter* from Foreign Office, United Kingdom, to the Law Officers of the Crown, United Kingdom (29 July 1932), p. 1 SWSP, Vol. III, Annex 361.

[3] *Id*.

[4] *Id*., p. 2.

[5] *Id.*, p. 3.

[6] U.S. Hydrographic Office, *Asiatic Pilot: The Shores of the China Sea from Singapore Strait to and including Hongkong*, Vol. IV (1915), p. 107. SWSP, Vol. IV, Annex 394.

[7] *See Letter* from Foreign Office, United Kingdom, to the Law Officers of the Crown, United Kingdom (29 July 1932), p. 4. SWSP, Vol. III, Annex 361.

[8] *Id.*, p. 1.

[9] United Kingdom, Hydrographic Department, *China Sea Pilot*, Vol. I (1st ed., 1937), p. 113. SWSP, Vol. IV, Annex 397.

[10] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), para. 11. SWSP, Vol. III, Annex 363.

[11] *Id*., para. 12.

[12] French Republic, Indochina Hydrographic Mission, *Procès-Verbal* (7 Apr. 1933). SWSP, Vol. III, Annex 365.

[13] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), p. 7837. MP, Vol. VI, Annex 159.

[14] French Republic, Governor of Cochin China, *Decree* (21 Dec. 1933), *reprinted in* Monique Chemillier-Gendreau, *Sovereignty over the Paracel and Spratly Islands*. SWSP, Vol. III, Annex 352.

[15] [Untitled Article], *New York Times* (30 July 1933). SWSP, Vol. IV, Annex 400.

[16] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 94. SWSP, Vol. V, Annex 459.

[17] *See generally, e.g. Memorandum* from the Legal Advisers of the Foreign Office, United Kingdom (10 Nov. 1931). SWSP, Vol. III, Annex 359.

[18] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[19] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 102. SWSP, Vol. V, Annex 459.

[20] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 20. SWSP, Vol. V, Annex 445.

[21] Jorge R. Coquia, "Maritime Boundary Problems in the South China Sea", *University of British Columbia Law Review*, Vol. 24 (1990), p. 119. SWSP, Vol. V, Annex 443.

[22] *See* Diterbitkan oleh Pengarah Pemetaan Negara [Malaysian Directorate of National Mapping], "Sheet 1", in *Peta Menunjukkan Sempadan Perairan dan Pelantar Benua Malaysia [Map Showing Territorial Waters and Continental Shelf Boundaries of Malaysia]* (Malaysia, 1979). SWSP, Vol. VI, Annex M82; Diterbitkan oleh Pengarah Pemetaan Negara [Malaysian Directorate of National Mapping], "Sheet 2", in *Peta Menunjukkan Sempadan Perairan dan Pelantar Benua Malaysia [Map Showing Territorial Waters and Continental Shelf Boundaries of Malaysia]* (Malaysia, 1979). SWSP, Vol. VI, Annex M83.

[23] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 20. SWSP, Vol. V, Annex 445.

[24] Russ Rowlett, "Lighthouses of the Spratly Islands" *available at* https://www.unc.edu/~rowlett/lighthouse/spr.htm (accessed 11 Feb. 2015), p. 7. SWSP, Vol. V, Annex 463.

[25] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 38. SWSP, Vol. V, Annex 445.

[26] David Jude Sta Ana, "Vietnam beefs up military garrisons in Spratlys", *The Philippine Star* (26 May 2011). SWSP, Vol. IV, Annex 417.

[27] "Green vegetables bring salty taste of the sea", *Tuoitre* (21 Jan. 2008), p. 1. SWSP, Vol. IV, Annex 415.

[28] *Id*., p. 2.

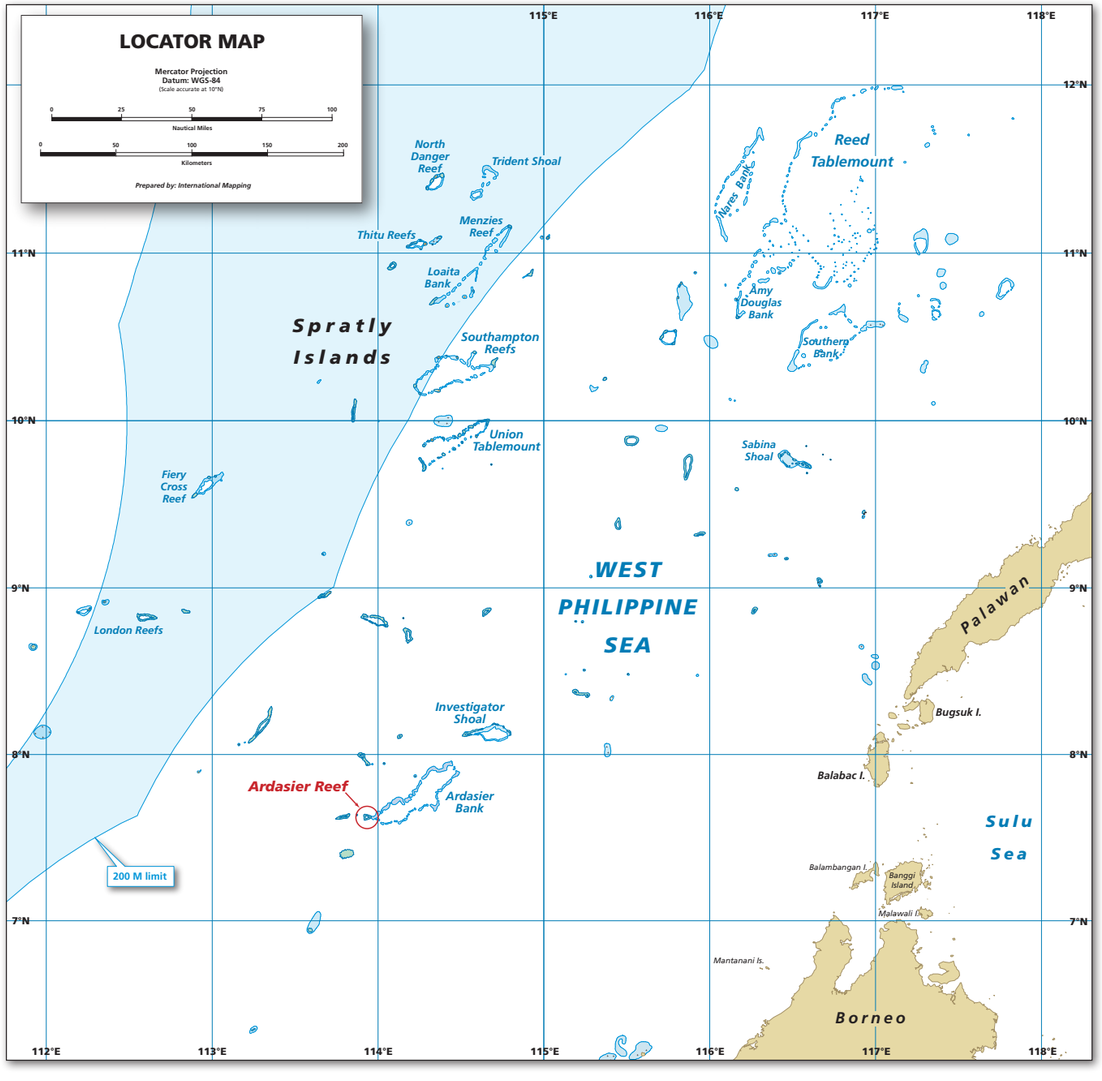
[29] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 102. SWSP, Vol. V, Annex 459.

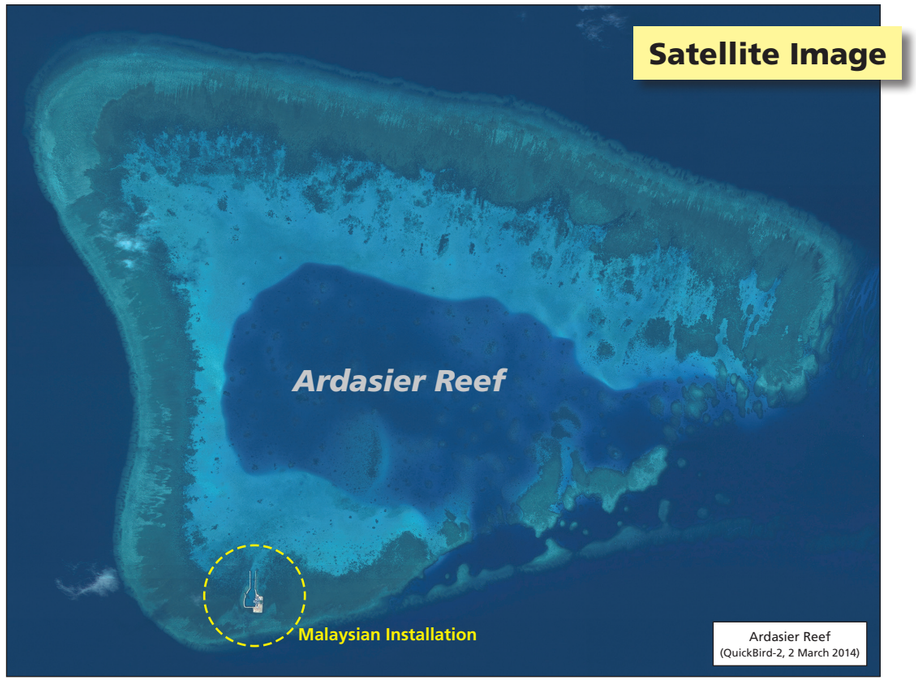
ARDASIER REEF

Also known as:

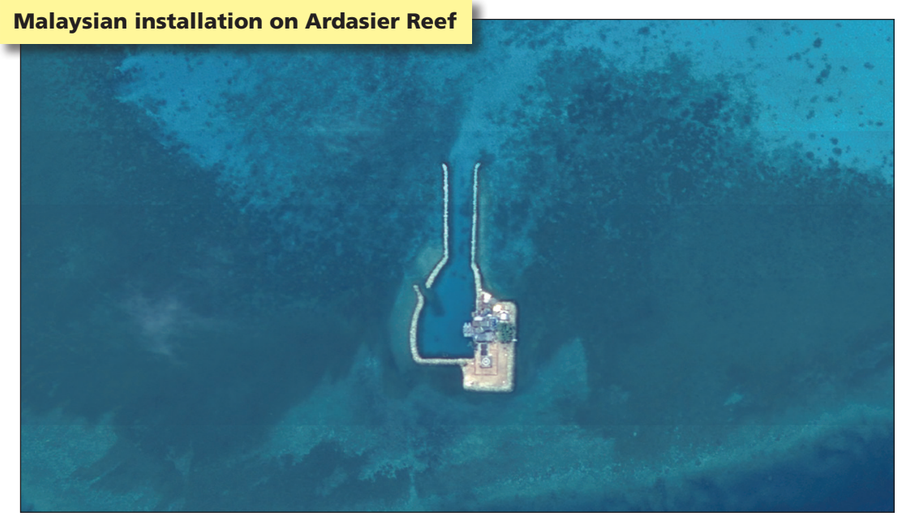
Chinese: Guangxingzi Jiao (光星仔礁)
Philippine: Antonio Luna Reef

Coordinate Location: 07°36'00"N - 113°56'00"E
Nearest High Tide Feature: Swallow Reef, 14.4 M
Distance to Palawan: 177.5 M
Distance to Hainan: 676.9 M
Claimed by: China, Malaysia
Occupied by: Malaysia

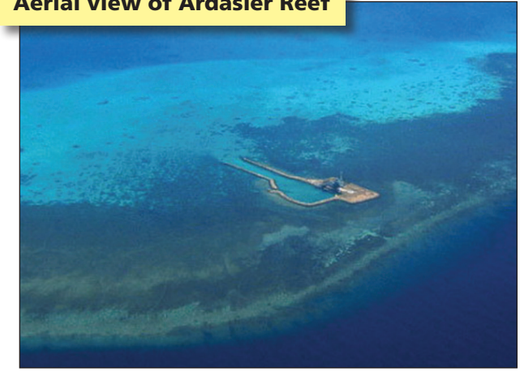




Malaysian installation on Ardasier Reef



Aerial view of Ardasier Reef



Ardasier Reef from the sea

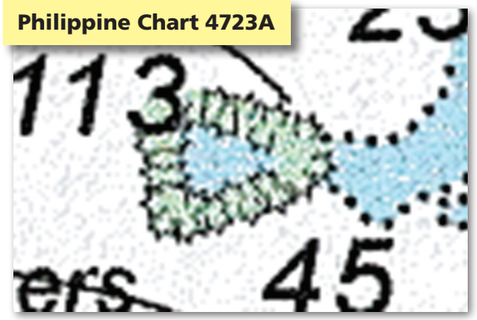
ARDASIER REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

ANTONIO LUNA REEF (7° 38' N, 113° 56' E), the W extremity of Antonio Luna Bank lies 14 miles NNE of Swallow Reef. The shallow lagoon which is enclosed by a reef that dries may be accessible to boats at HW. The reef is steep-to except on its E side, where it joins Antonio Luna Bank.

Philippine Chart 4723A

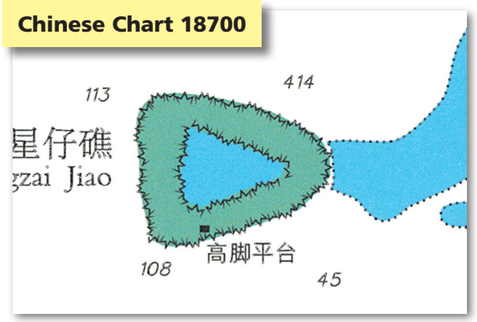


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Approximately 14 nautical miles to the north and east of Danwan Reef are Guangxing Reef, Guangxing Zi, and Andu Bank. Located to its northeast, Andu Bank is an underwater reef flat that is trending northeast-to-southwest and has a length of approximately 38 nautical miles and at its widest is 18 nautical miles. The water depth above it is 4 meters ~ 16.4 meters. The shallowest section is located at the northeast end of the reef flat. The southern edge of the reef flat is very steep, and the north side has an underwater submerged reef: Polang Reef. Guangxing Zi Reef is located at the southwest end of the reef flat, and it is an exposed coral bank. Guangxing Reef is approximately 8 nautical miles west of Guangxing Zi Reef, and between them, there is an underwater submerged shoal.

Chinese Chart 18700



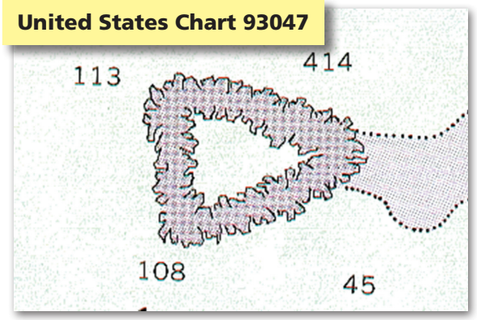
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Ardasier Reef (7°38'N., 113°56'E.) is the W extremity of Ardasier Bank, which lies 14 miles NNE of Swallow Reef.

This reef, which dries, encloses a shallow lagoon which is probably accessible to boats at HW. The reef is steep-to except on its E side, where it joins Ardasier Bank.

United States Chart 93047

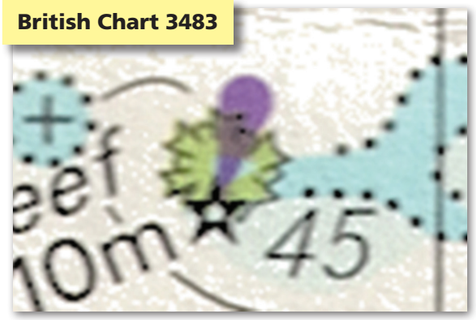


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Ardasier Reef (7°38'·30N 113°52'·15E), the W extremity of Ardasier Bank, is steep-to except on its E side, where it joins Ardasier Bank. This reef, which dries, encloses a shallow lagoon which is probably accessible to boats at HW.

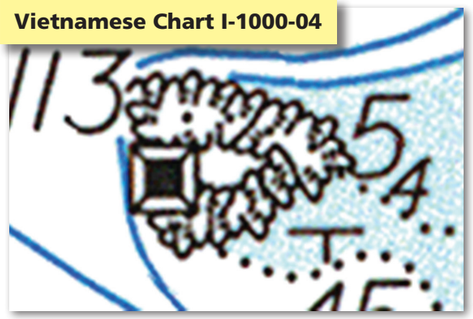
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

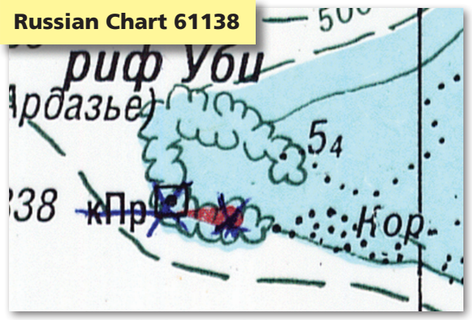
ARDASIER REEF
Additional Charts

Vietnamese Chart I-1000-04



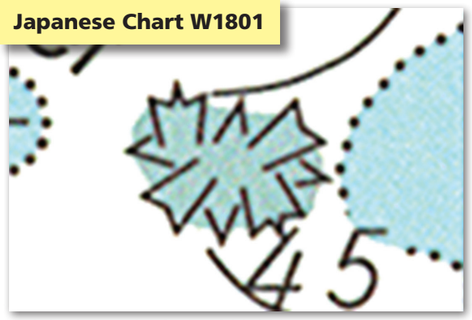
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



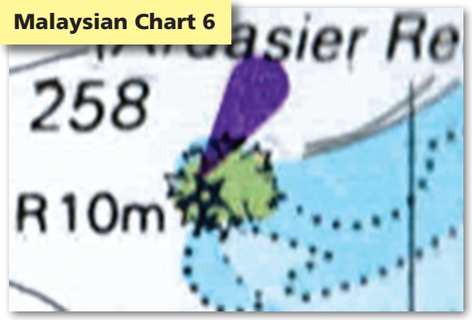
Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 6



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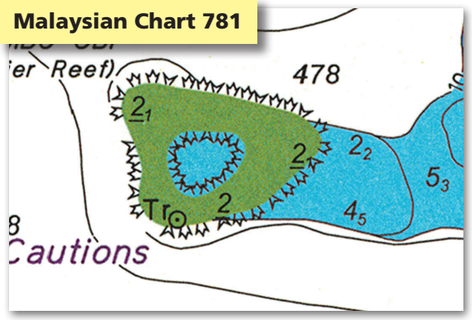
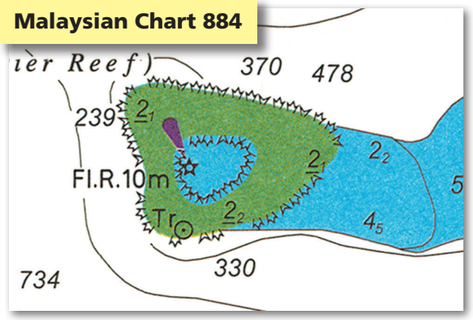
Complete chart reproduced as Annex NC13

Malaysian Chart 781



Original Map Scale 1:300,000
Complete chart reproduced as Annex NC14

Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Ardasier Reef dries at low tide and encloses a shallow lagoon that may be accessible to boats at high water. There is nothing on this reef that is above water at high tide. The Chinese and Vietnamese nautical charts depict an undefined square that is situated along the south-central fringe of the reef, which might be a light beacon. The British chart shows a light beacon in the same position. Neither the sailing directions nor the nautical charts depict any other feature that is above water at high tide. The satellite imagery and photographs show a man-made installation in the area of the reef where the light beacon is shown to be.

Historical and Anthropological Information

Ardasier Reef was surveyed by the *H.M.S. Rifleman* in 1867-1868.[1] It was considered by Great Britain not to be of a character to justify annexation as it was entirely submerged.[2] It was described in *The China Sea Directory* in 1879 as follows:

> ARDASIER BANK, which is very extensive, has only received a partial examination; it is probable that the South Ardasier, Gloucester, and North Ardasier breakers, as also the breakers seen by Mr. Dallas in 1860, are shoal patches on different parts of one large bank. The south-eastern side, which forms one of the northern limits of the approach to the Palawan passage, has been surveyed in the *Rifleman*; the general direction of this part is N.E. by E. 1/2 E. and S.W. by W. 1/2 W. for a distance of 20 miles, but the outline of the edge is very irregular. Several shoal patches of 3 to 5 fathoms were found near the edge; the shoalest spot discovered had only 2 1/4 fathoms water, and is in 7º 36/ 37” N., 114º 10’ 10” E., near the position ascribed to South Ardasier breakers.[3]

France claimed Ardasier Reef in the early 1930s.[4] In rejecting this claim, the United Kingdom stated that it had “no basis in international law and calls for a strong protest without any further delay”,[5] and that “Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work”.[6]

Ardasier Reef was occupied by Malaysian armed forces in 1986.[7]

The Status of the Feature under UNCLOS

Ardasier Reef is a low-tide elevation under Article 13. The nautical charts and sailing directions describe the reef as submerged at high water but drying at low tide. It is 177.5 M from Palawan and 14.4 M from the nearest high-tide feature, Swallow Reef. The Philippines knows of no record of human habitation prior to occupation by the Malaysian military in 1986.[8]

ARDASIER REEF

References

[1] United Kingdom, Foreign Office, *List of Islands and Reefs in the Area Claimed by France* (undated). SWSP, Vol. III, Annex 354.

[2] *Id*.

[3] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 279. SWSP, Vol. IV, Annex 389.

[4] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933). SWSP, Vol. III, Annex 363.

[5] *Id*.

[6] *Id*.

[7] Johan Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 76. SWSP, Vol. V, Annex 460. *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds.), p. 76. SWSP, Vol. V, Annex 460.

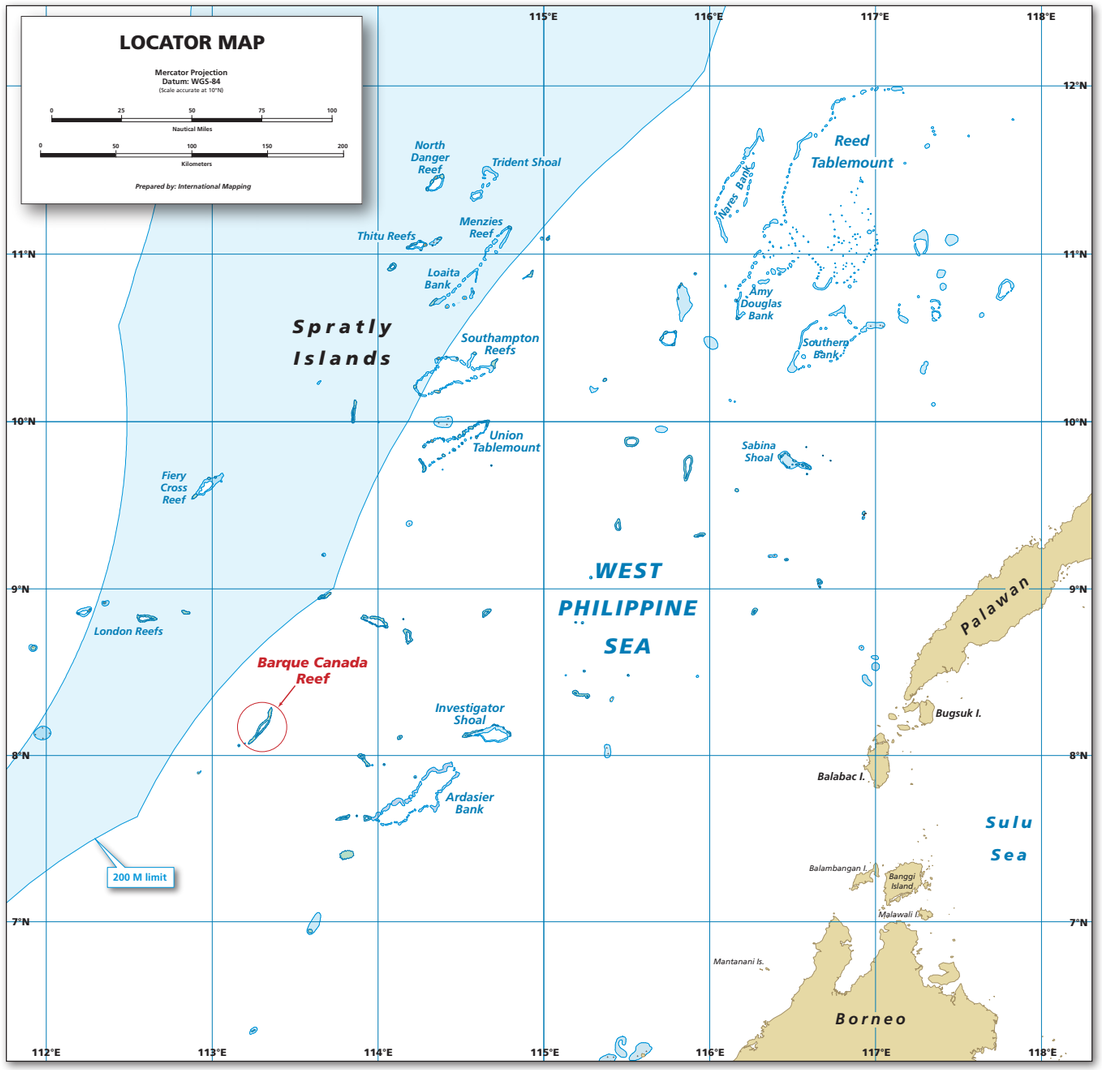
[8] Johan Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 76. SWSP, Vol. V, Annex 460.

BARQUE CANADA REEF

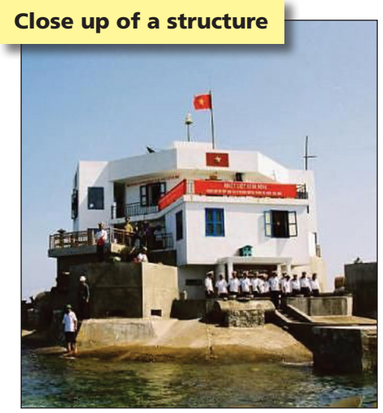
Also known as:

Chinese: Bai Jiao (柏礁)
Philippine: Masca(r)do/Magsaysay

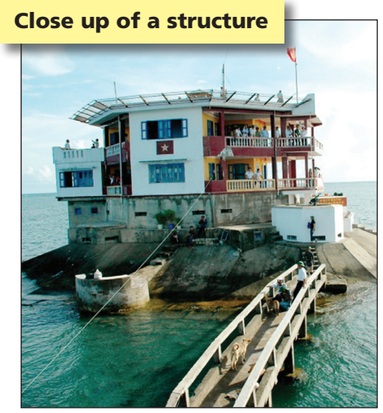
Coordinate Location: 08°10'00"N - 113°18'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 212.9 M
Distance to Hainan: 628.9 M
Claimed by: China, Malaysia, Philippines, Vietnam
Occupied by: Vietnam



Close up of a structure



Close up of a structure



A Vietnamese installation on Barque Canada Reef

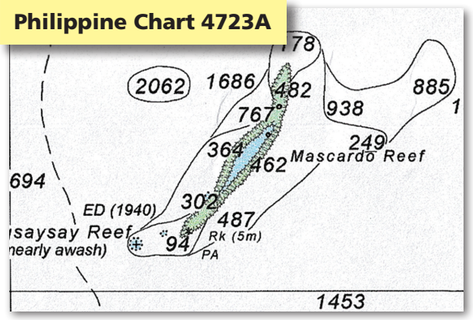
BARQUE CANADA REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

MASCARDO REEF which dries, is situated with its SW extremity (8° 04' N, 113° 12' E) 20 miles NE of Kalantiyaw Cay. It extends 18 miles NE where there is a group of rocks, 2 meters (6 ft) high. Boats can probably reach a lagoon in the middle of the narrow reef. Anchorage can be found on a spit, at the N extremity of the reef on which there are heavy overfalls, in a depth of 37 meters (20 fms).

Philippine Chart 4723A

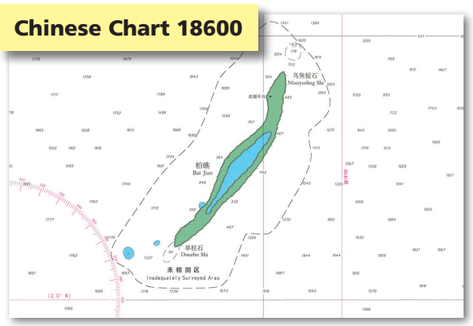


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Not included.

Chinese Chart 18600



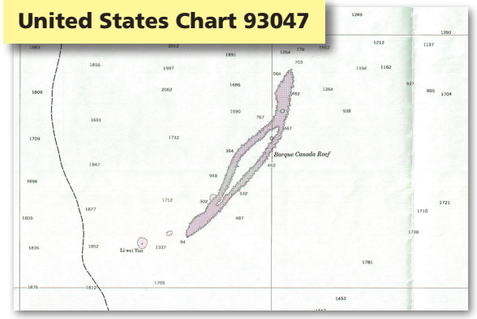
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC24

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Barque Canada Reef is a long narrow reef, nearly all of which dries. It extends about 15 miles NE from a rock 4.5m high in position 8°05'N, 113°14'E.

The lagoon within the reef appears to be fairly deep, but is inaccessible. At the NE end of the reef there is a group of rocks 2m high. This N part is not as steep-to as the S part and temporary anchorage may be taken in favorable weather.

United States Chart 93047

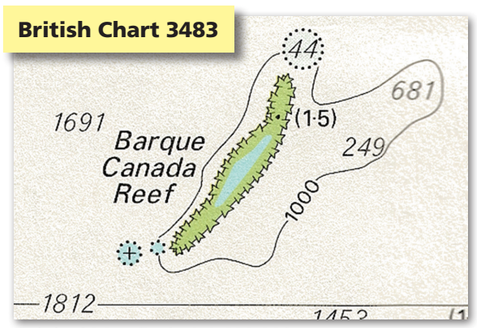


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Barque Canada Reef (8°10'·30N 113°18'·30E) extends 18 miles from SW to NE. The reef dries, and there is a group of rocks near its NE extremity. There is a narrow lagoon, which has not been examined, in the middle of the reef. The lagoon is probably accessible to boats.

British Chart 3483

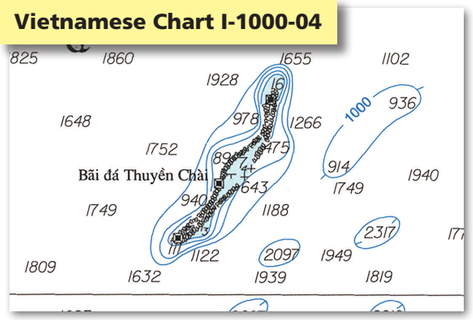


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

BARQUE CANADA REEF

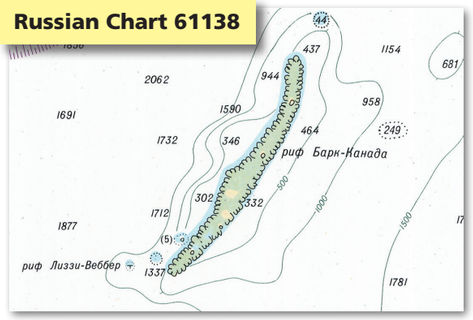
Additional Charts

Vietnamese Chart I-1000-04



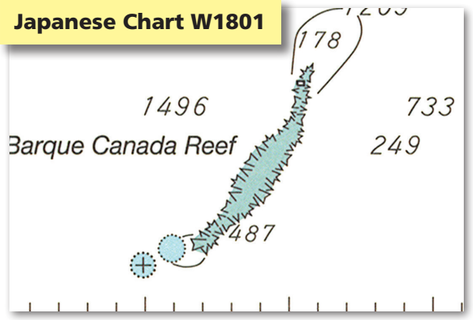
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



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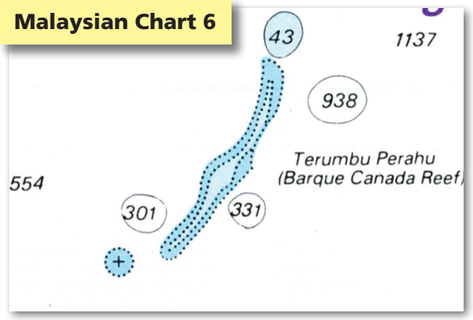
Complete chart reproduced as Annex NC11

Malaysian Chart 6



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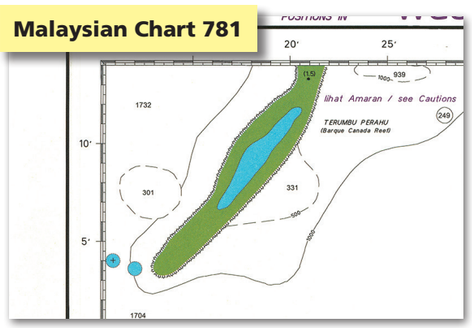
Malaysian Chart 781



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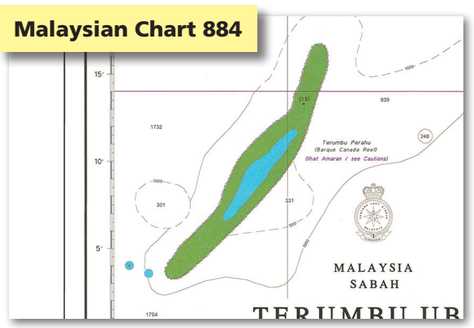
Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Barque Canada Reef is a long narrow reef about 16 M in length that extends generally in a southwest-northeast direction. Nearly the entire reef dries at low tide. At the northeast part of the reef there is a group of rocks 2 metres high at high tide. All the nautical charts depict a small dot in the northern part of the reef that likely represents these rocks. The Russian and Vietnamese nautical charts also show dots in the southern part of the reef that likely represent rocks that are above water at high tide. With the exception of these small rocks, the rest of the reef is above water only at low tide.

As shown in the satellite imagery and photographs, man-made structures and installations have been built at three locations. These structures are built on the low-tide elevations or on areas of the shallow seafloor that are submerged at all times.

Historical and Anthropological Information

Barque Canada Reef is named after the British ship *Canada*, which was lost on the reef in 1864. Older sources appear to refer to the feature as the Lizzie Webber Shoal. The *China Sea Directory*, published in 1879, provides the following account from Mr. P. Orr, the commander of the *Canada*:

> "On the 24th December 1864, at 12:30 a.m., the British barque *Canada* was wrecked on a reef in the China sea - not marked in the Chart I was navigating on, and corrected to 1863… After leaving the ship we skirted the weather side of the reef until noon : when we cleared the south end, I got a meridian observation which put us in 8º 3' N., - we were then about one mile south of the reef which is awash. I estimate the distance made in the boats from the time we left the ship till we cleared the south end of the reef to be 25 miles".[1]

An internal British memorandum from 1933 noted that although Barque Canada Reef has "portions which do not cover at [high water]", it was "unlikely to be of any value whatsoever except possibly to seaplanes and flying boats".[2]

Barque Canada Reef has been occupied by Vietnam since 1978.[3] A few small structures have been constructed on the feature, as seen in the satellite imagery and photographs. Malaysia also claims Barque Canada Reef. The basis of Malaysia's claim to Barque Canada Reef is that it is within the Exclusive Economic Zone (EEZ) of its land territory in Borneo[4] and was illustrated by a continental shelf map issued by Malaysia in 1979.[5]

The Status of the Feature under UNCLOS

Barque Canada Reef is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. Most of this narrow reef is submerged at high tide with only a group of rocks exposed at high water. There is no record of human settlement on Barque Canada Reef prior to its occupation by the Vietnamese military in 1978.[6] The Vietnamese forces are dependent on supplies from outside.

[1] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 289. SWSP, Vol. IV, Annex 389.

[2] *Memorandum* to Admiralty, United Kingdom (12 Nov. 1937), p. 6. SWSP, Vol. III, Annex 372.

[3] Jianming Shen, "International Law Rules and Historical Evidences Supporting China's Title to the South China Sea Islands", *Hastings International & Comparative Law Review*, Vol. 21, No. 1 (1997-1998), p. 56. MP, Vol. VII, Annex 260. Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

[4] Steven Kuan-tsyh Yu, "Who Owns the Paracels and Spratlys? - An Evaluation of the Nature and Legal Basis of the Conflicting Territorial Claims", *Chinese (Taiwan) Yearbook of International Law & Affairs*, Vol. 9 (1989-1990), p. 19. SWSP, Vol. V, Annex 444.

[5] Jorge R. Coquia, "Maritime Boundary Problems in the South China Sea", *University of British Columbia Law Review*, Vol. 24 (1990), p. 121. SWSP, Vol. V, Annex 443.

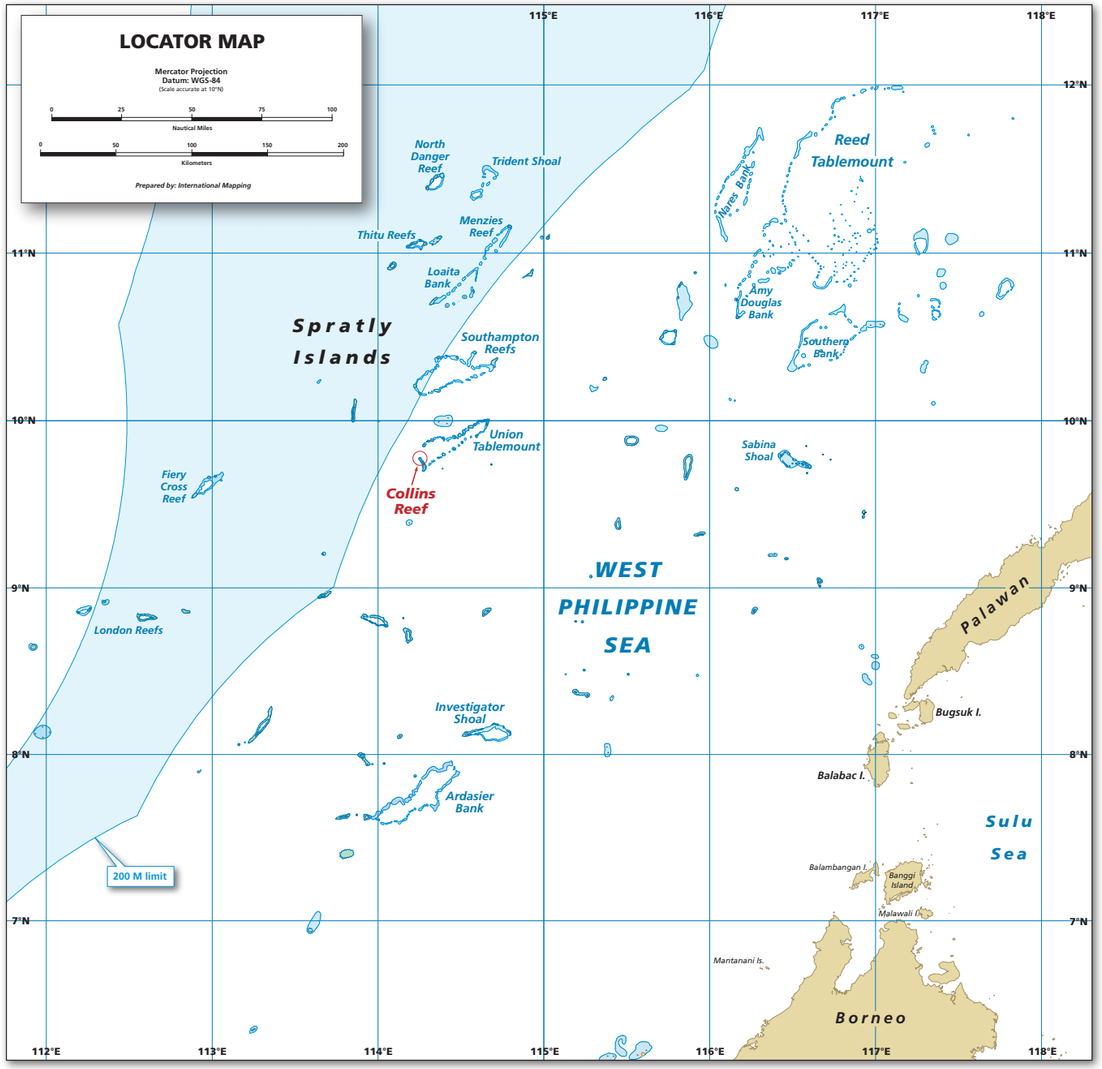
[6] Jianming Shen, "International Law Rules and Historical Evidences Supporting China's Title to the South China Sea Islands", *Hastings International & Comparative Law Review*, Vol. 21, No. 1 (1997-1998), p. 56. MP, Vol. VII, Annex 260. *See also* Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

COLLINS REEF

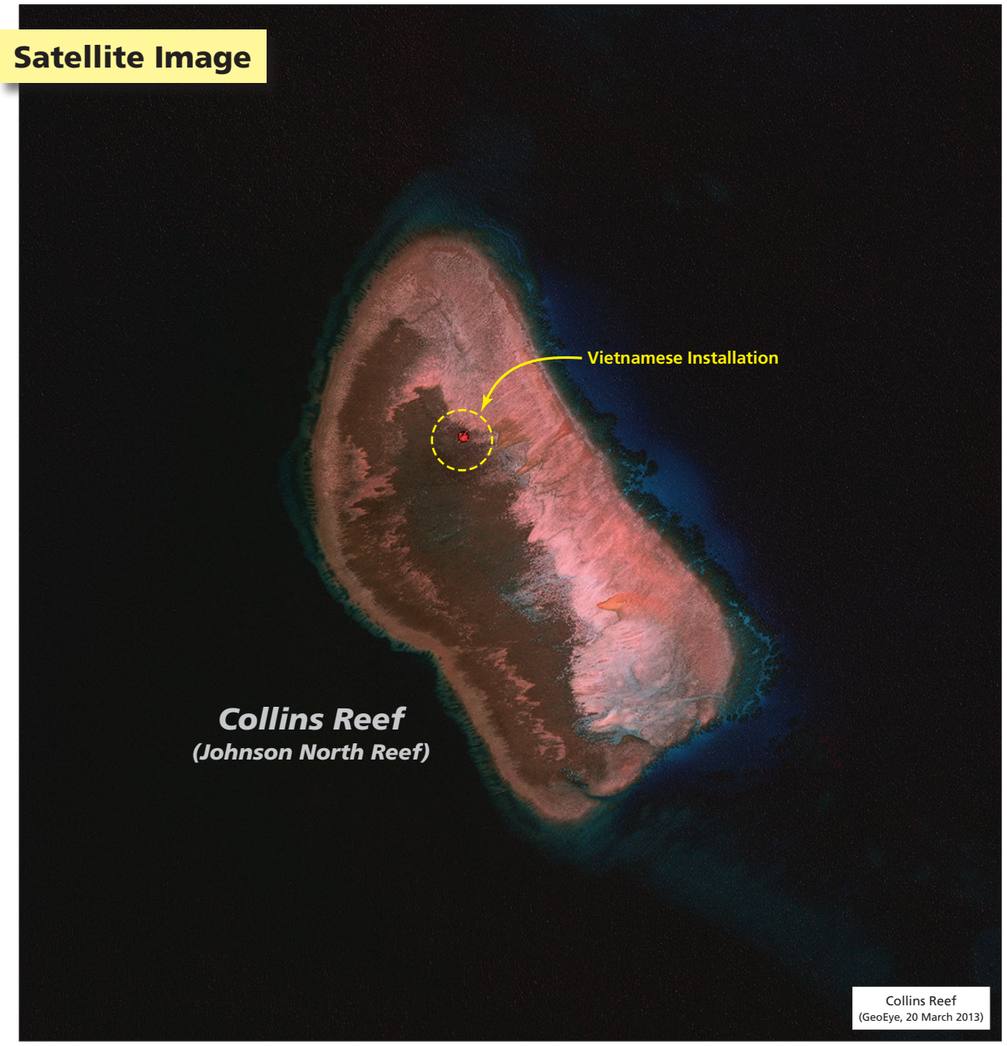
Also known as:

Chinese: Guǐhǎn Jiāo (鬼喊礁)
Philippine: Roxas

Coordinate Location: 09°45'00"N - 114°13'40"E
Nearest High Tide Feature: Johnson South Reef, 3.1 M
Distance to Palawan: 189.6 M
Distance to Hainan: 567.9 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam

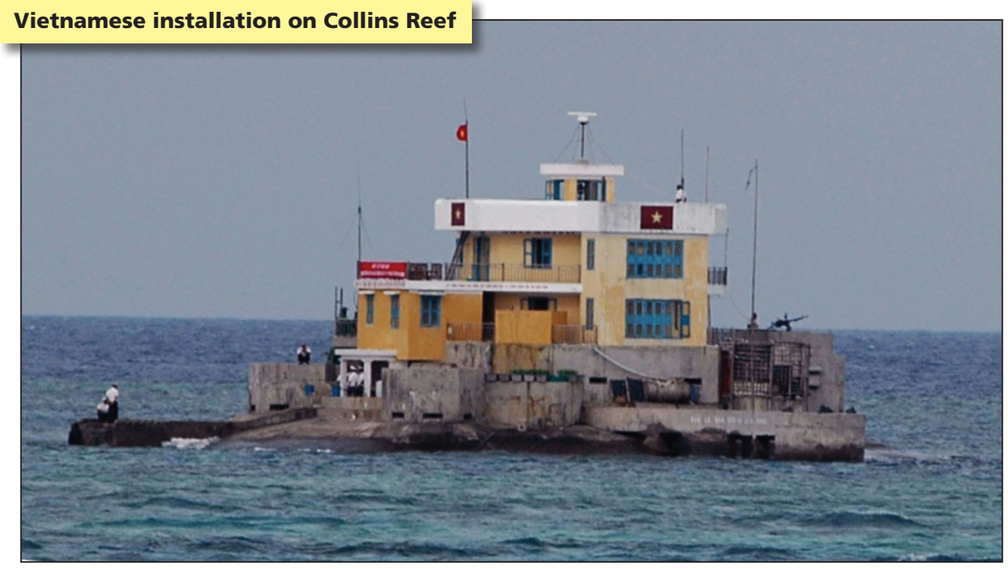


Satellite Image



Collins Reef
(GeoEye, 20 March 2013)

Vietnamese installation on Collins Reef



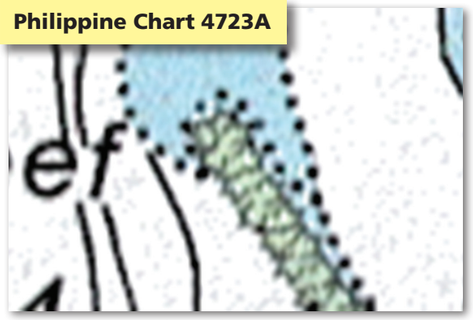
COLLINS REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

Philippine Chart 4723A

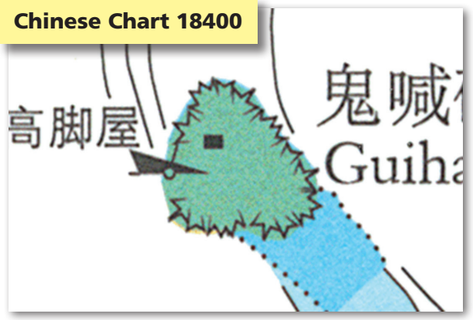


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

[In relation to] Jiuzhang reef group includes in total 20 individual reef flats. Among these, there are 2 islands (Jinghong Island, Ranqing Sandbank), and 18 reefs. In clockwise order starting from the western end of the reefs, they are Chigua Reef, Guihan Reef, Hua Reef, Jiyang Reef, Jinghong Reef, Nanmen Reef, Ximen Reef, Dongmen Reef, Anle Reef, Changxian Reef, Zhuquan Reef, Niu'e Reef, Ranqingdong Reef, Ranqing Sandbank, Longxia Reef, Bianshen Reef, Jiuzhang Unnamed Reef (to be named), Zhangxi Reef, Quyuan Reef, and Qiong Reef.

Chinese Chart 18400

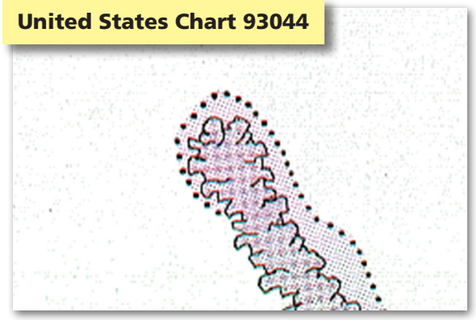


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Collins Reef, a small reef with a coral dune at its SE part, lies 1.5 miles NNW of Johnson Reef. It is separated from Johnson Reef by a relatively deep channel with a coral bottom.

United States Chart 93044

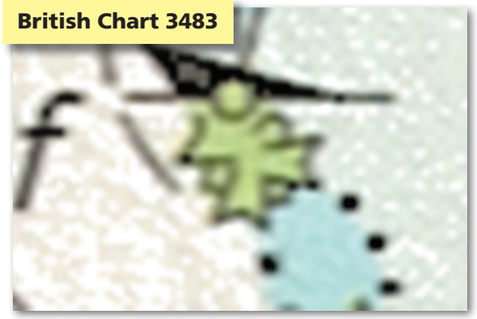


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Collins Reef (9°46'·23N 114°14'·96E), lies near the W extremity of the banks and reefs; a stranded wreck lies on the N edge of the reef.

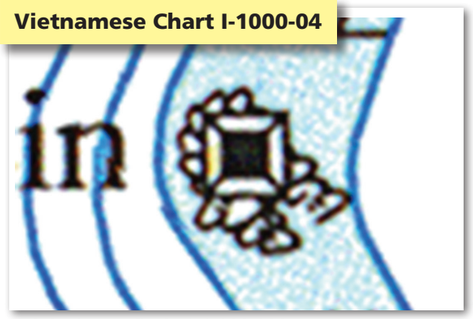
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

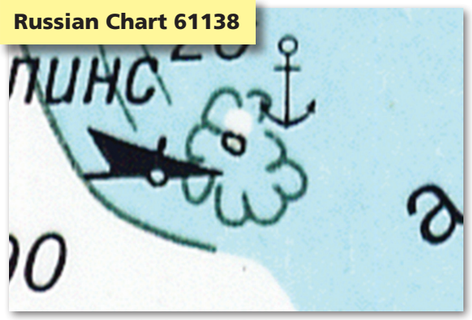
COLLINS REEF
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Collins Reef lies near the western side of the Union Reefs. The U.S. sailing directions report that there is a coral dune in the southeast part of the reef, but there is no evidence that it is above water at high tide. The Chinese and Vietnamese nautical charts show a rectangular feature in the north-central part of the reef that is the man-made structure that has been built on top of this drying reef. The satellite image confirms that this is the location of the structure; the photographs indicate this is the installation that has been constructed in the lagoon, in a shallow area that is always submerged. All the other nautical charts show the reef to be below water at high tide.

Historical and Anthropological Information

Union Bank and Reefs, of which Collins Reef forms a part:

> were surveyed by HM surveying ship *Herald* in April and May 1931 and all names of features are derived from names of surveying officers aboard *Herald*... or the church calendar. The *Herald* survey of Union Bank and Reefs has never been published by the Hydrographer of the Navy.[1]

The *Herald*'s survey was conducted "to investigate probable areas for seaplane operations in time of war".[2] Japanese hydrographers subsequently made "'sketch' surveys" of several features, including Union Bank, during 1936 and 1937.[3]

Collins Reef was occupied by Vietnam in 1988 during a military operation that led to the deaths at nearby Johnson South Reef of more than 60 Vietnamese soldiers in a confrontation with China.[4] Vietnamese media reports suggest that clashes also occurred at Collins Reef.[5]

According to Philippine media reports, facilities at Collins Reef "seem to follow a standard pattern of construction" among Vietnamese-occupied reefs. This pattern features "a golden-painted three-storey concrete building with built-in light house on top, gun emplacements on both sides, [a] T-type pier, solar panels, parabolic disc antennas, and garden plots".[6]

The Status of the Feature under UNCLOS

Collins Reef is a low-tide elevation under Article 13. All the nautical charts except China's and Vietnam's show the entirety of Collins Reef below water at high tide. The Chinese and Vietnamese charts show a symbol which is likely the artificial installation that has been constructed in the lagoon, in a shallow area that is always submerged. It is 189.6 M from Palawan and 3.1 M from the nearest high-tide elevation, Johnson South Reef.

References

[1] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 10 n.1. MP, Vol. VIII, Annex 256.

[2] *Id*., p. 37.

[3] *Id*., pp. 37-38.

[4] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 83. SWSP, Vol. V, Annex 459.

[5] *See, e.g.*, "Deadly fight against Chinese for Gac Ma Reef remembered", *Thanh Nien News* (17 Mar. 2013), p. 3. SWSP, Vol. IV, Annex 425 ("[T]wo other Vietnamese ships protecting the Len Dao (Lansdowne) and Co Lin (Collins) reefs that were also attacked by Chinese ships managed to hold out".). *See also* "Families of Vietnamese martyrs to visit Truong Sa for memorial", *Thanh Nien News* (26 Jan. 2013). SWSP, Vol. IV, Annex 424. ("The three soldiers died with 61 others on March 14, 1988 when Chinese soldiers launched a military assault against Gac Ma (Johnson South Reef or Chigua Reef), Len Dao (Lansdowne Reef) and Co Lin (Johnson North/Collins Reef) in a flagrant effort to seize the Spratly Islands and gain control over the entire East Sea".).

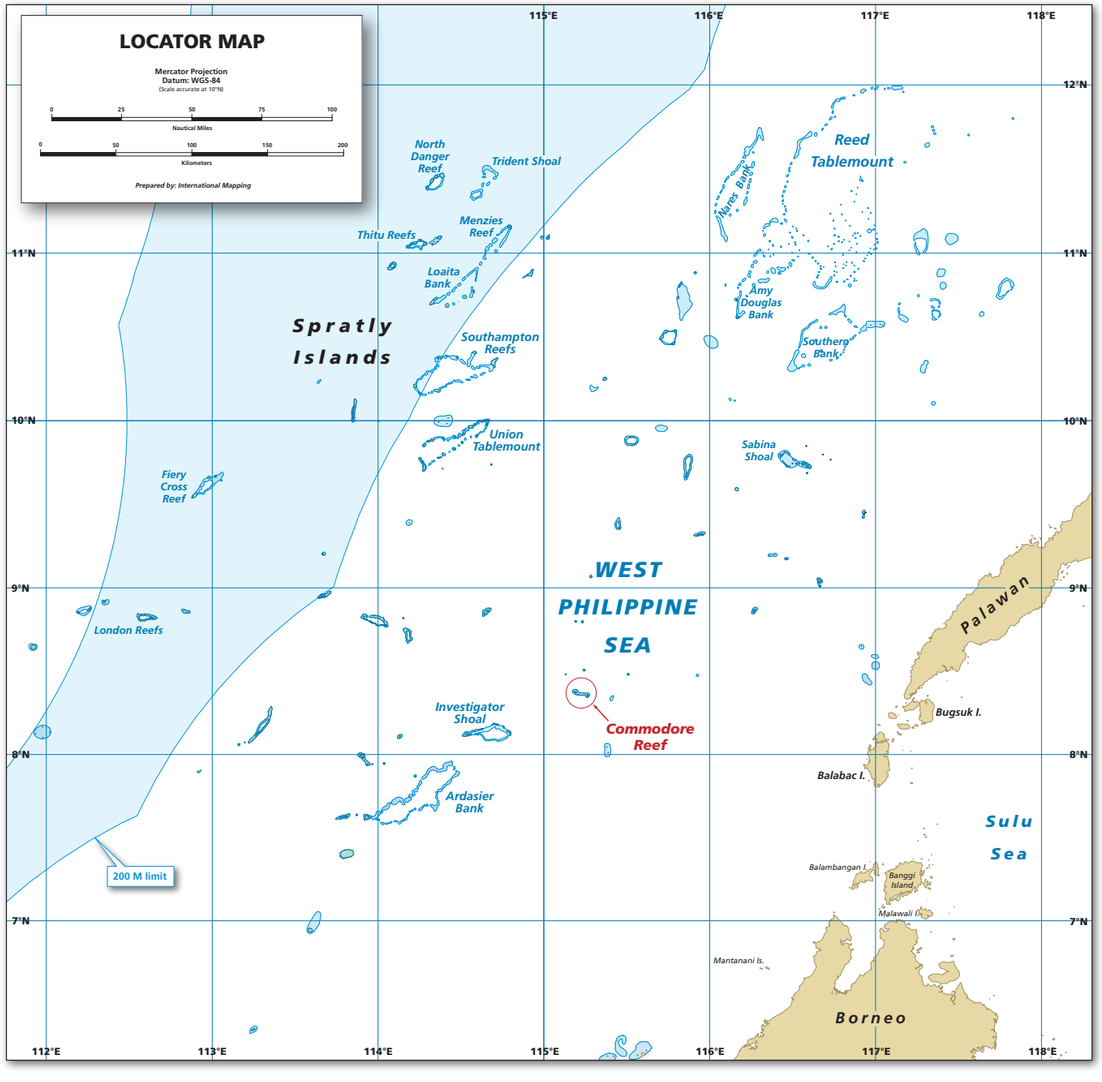
[6] Rommel C. Banlaoi, "Clash of sovereignties in the Spratlys", *The Philippine Star* (30 June 2011). SWSP, Vol. IV, Annex 420.

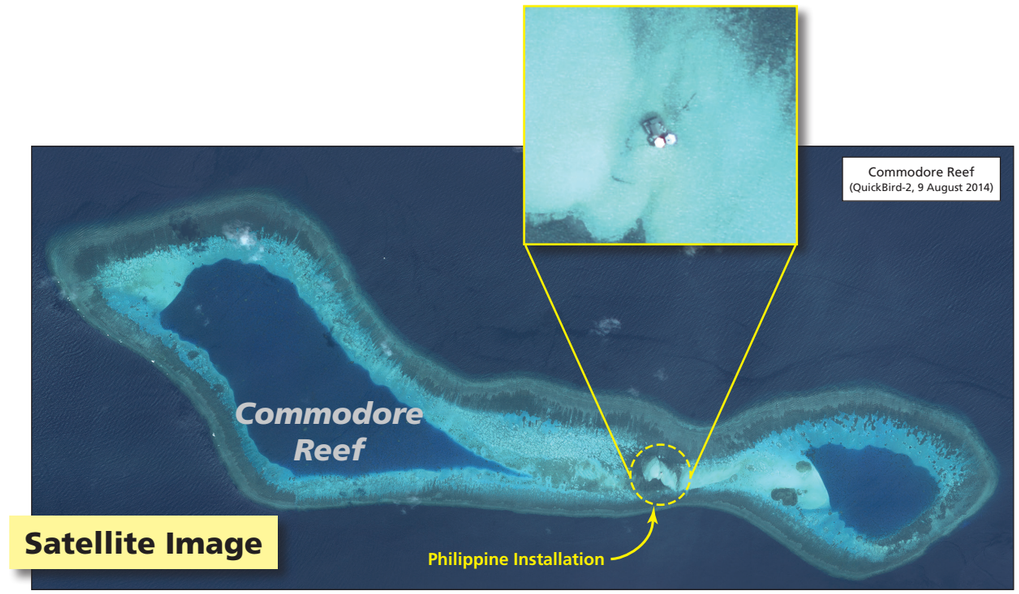
COMMODORE REEF

Also known as:

Chinese: Siling Jiao (司令礁)
Philippine: Rizal Reef

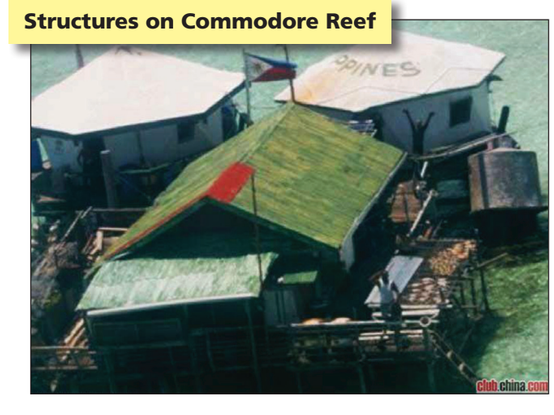
Coordinate Location: 08°21'30"N - 115°13'40"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 101.3 M
Distance to Hainan: 667.1 M
Claimed by: China, Malaysia, Philippines
Occupied by: Philippines



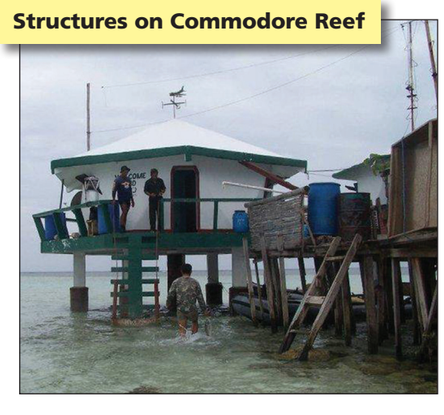


Aerial view of Commodore Reef

Structures on Commodore Reef



Structures on Commodore Reef



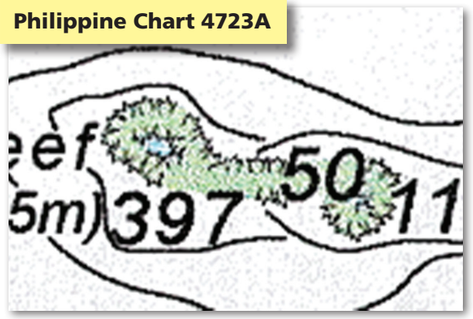
COMMODORE REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

RIZAL REEF with its E extremity (8° 21' N, 115° 18' E) lies 65 miles SW of Hasa Hasa Shoal. It dries in patches around its whole circumference and contains two lagoon, with a sand cay, 0.5 meters (1 ft) high on the neck between them. The W lagoon can be entered at high water, the best place being 2 miles on the N and S sides. General depths are from 5.5 meters to 14.6 meters (18 to 48ft) but there are groups of below water rocks in places. The E Lagoon which appears shallow and foul has not been closely examined.

Philippine Chart 4723A



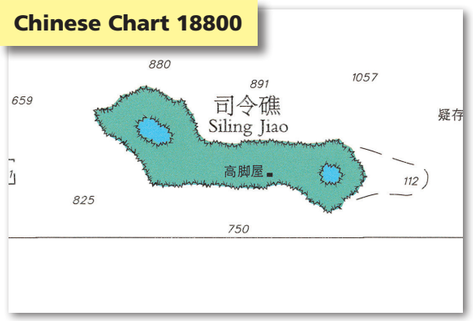
Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Siling Reef - Located approximately 38 nautical miles northeast of the eastern end of Yuya Submerged Shoal (08°22'N, 115°14'E), it is a coral atoll that is trending toward east and west. It has a length of approximately 6.4 nautical miles, and there are two enclosed lagoons in the center. There are no entry points, and ships cannot enter. During low tide, there can be pedestrian traffic on the reef. The water outside the edge of the reef is suddenly deep, and it is difficult for ships to moor here.

There are many submerged shoals and submerged reefs near the Siling Reef. Approximately 7 nautical miles east of it there are two reefs. Xiaowei Submerged Shoal is located approximately 9 nautical miles north of Siling Reef, and it is a submerged reef. Nanyue Submerged Shoal is located approximately 18 nautical miles northeast of the Siling Reef, and it is a submerged reef.

Chinese Chart 18800



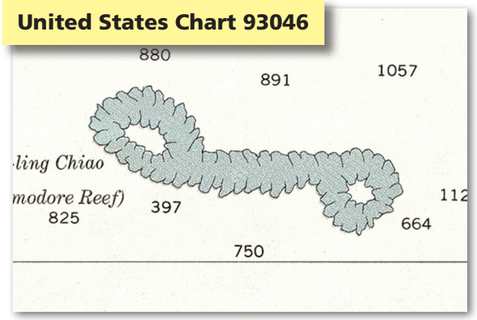
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC29

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Commodore Reef (8°22'N., 115°14'E.) is an atoll about 7 miles in length, and extends E and W lying about 47 miles SE of Pigeon Reef. It dries 1.5m on its W end, and in patches elsewhere around its circumference. The reef forms two lagoons with a sand cay 0.5m high on the neck between them.

The E lagoon has not been closely examined, but appears to be shallow and full of rocks. The encircling reef is completely covered at HW, except for the sand cay near the middle and a rock 0.3m high at the E end.

United States Chart 93046



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC52

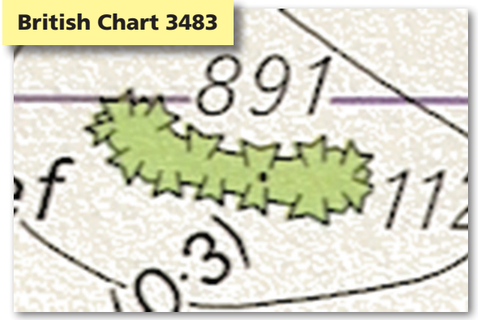
4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Commodore Reef (8°20'·95N 115°12'·32E), which has been reported to lie 2 miles E of its charted position, dries in patches around its circumference. It contains two lagoons, with a low sand cay on a neck between them. Depths in the W lagoon are 5·5 to 14·6 m, but there are groups of below-water rocks in places. The E lagoon has not been closely examined, but appears to be shallow and foul.

There is no anchorage in the vicinity of Commodore Reef. Boats can enter the W lagoon at HW, and in some places at LW; the best positions are 2 miles from the W end, and on the N and S sides.

A rock awash, existence doubtful, lies 3 miles ENE, and an unknown danger is charted 5 miles NW.

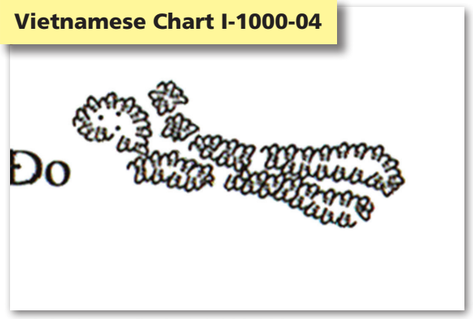
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

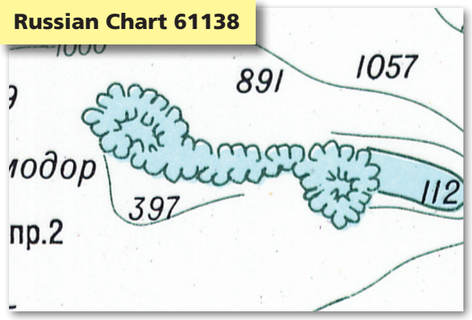
COMMODORE REEF
Additional Charts

Vietnamese Chart I-1000-04



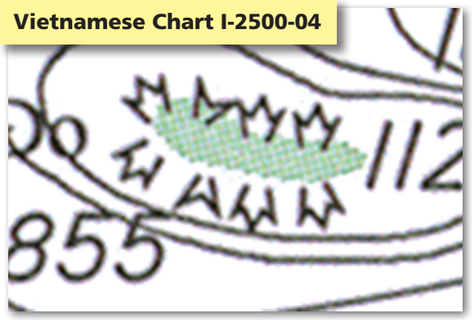
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Vietnamese Chart I-2500-04



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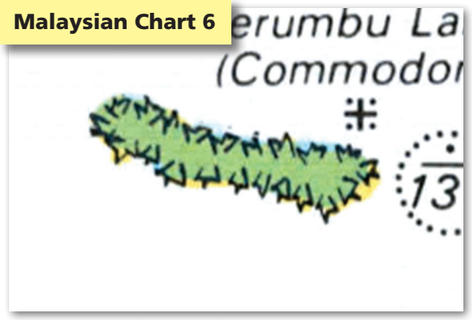
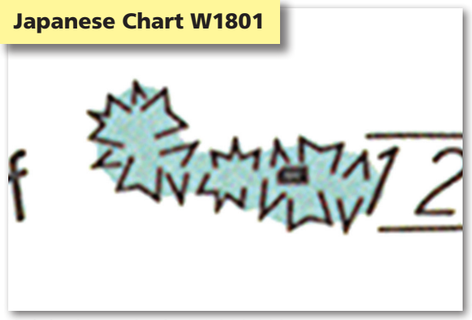
Complete chart reproduced as Annex NC66

Malaysian Chart 6



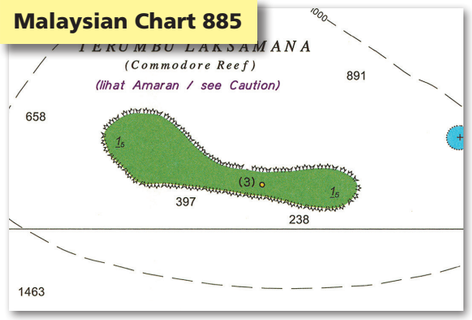
Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 885



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC15

Geographic/Hydrographic Observations by Dr. Robert Smith

Commodore Reef is an atoll approximately 7 M in length. It dries at low tide to 1.5 metres on its west end and in patches elsewhere around its circumference. The reef forms two lagoons, which are best depicted on the U.S. and Chinese charts. The sailing directions report that a sand cay 0.5 metres high at high tide is located on the neck between the two lagoons. The British, Chinese, and Japanese nautical charts show a black dot that presumably represents this cay. The U.S. sailing directions also report a rock 0.3 metres high that is located at the east end, although this rock is not shown on the charts. Satellite imagery and the photographs show that several structures have been built on stilts that are fixed to the submerged seafloor.

Historical and Anthropological Information

Commodore Reef was featured in British sailing directions in the 19th century. *The China Sea Directory* describes Commodore Reef as follows:

> COMMODORE REEF. — Mr. Hugh Baird, commanding the ship *Commodore*, reports as follows: - Monday, 22nd December 1862, at 8 a.m., saw what I took to be the North Viper shoal, or Seahorse, the north-east end bearing by compass N.N.W. 3 miles; it seemed to extend over 3 miles N.E. and S.W. Partly dry sand, and several rocks from 20 to 30 feet above water, and heavy breakers all around it. At noon it bore W. by S., distant about six miles; lat. By observation 8º 22' N., long. 115º 31' E.[1]

No record has been found of any human habitation at Commodore Reef, until it was occupied by Philippine armed forces in 1980.[2]

Malaysia also claims Commodore Reef. The Philippines protested Malaysia's publication of a map in 1979 claiming the feature.[3] In April 1988, three fishing boats from the Philippines were seized by the Malaysian navy.[4] This prompted a protest by the Philippines.[5]

The Philippines military forces on Commodore Reef have been described as living in "mostly crude stilted structures over shallow water or small sandbars, with very little room to maneuver and fishing as the sole activity and consolation".[6] According to one report, "the troops on [Commodore Reef] used to tie themselves to empty oil drums when there was particularly bad weather at night, so that if a high sea or an errant piece of ocean debris wiped out the stilts, they'd at least be able to float".[7]

The Status of the Feature under UNCLOS

Commodore Reef is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. Commodore Reef dries at low tide and forms two lagoons. There is a sand cay between the lagoons that is 0.5 metres high at high tide. Chinese sailing directions indicate that "[d]uring low tide, there can be pedestrian traffic on the reef". The US sailing directions also report a rock 0.3 metres high. There is no record of human habitation on Commodore Reef prior to its occupation by Philippine armed forces in 1980.[8] There is no economic activity on Commodore Reef.

COMMODORE REEF

References

[1] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 280. SWSP, Vol. IV, Annex 389.

[2] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

[3] Jorge R. Coquia, "Maritime Boundary Problems in the South China Sea", *University of British Columbia Law Review*, Vol. 24 (1990), p. 121. SWSP, Vol. V, Annex 443.

[4] Johan Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 77. SWSP, Vol. V, Annex 460.

[5] *Id.*

[6] Jeff Himmelman, "A Game of Shark And Minnow", *New York Times* (17 Oct. 2013). SWSP, Vol. IV, Annex 430.

[7] *Id*.

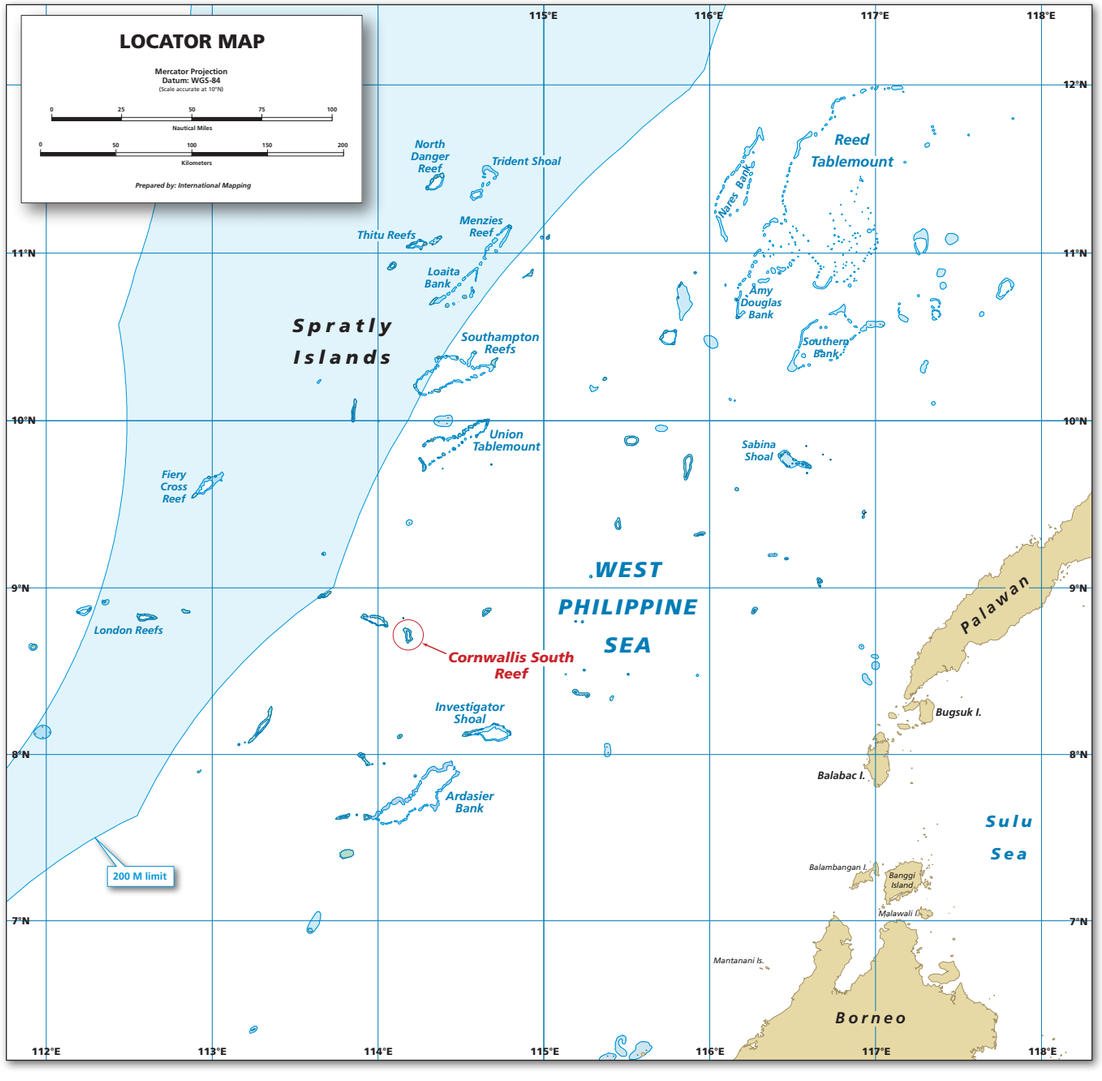
[8] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

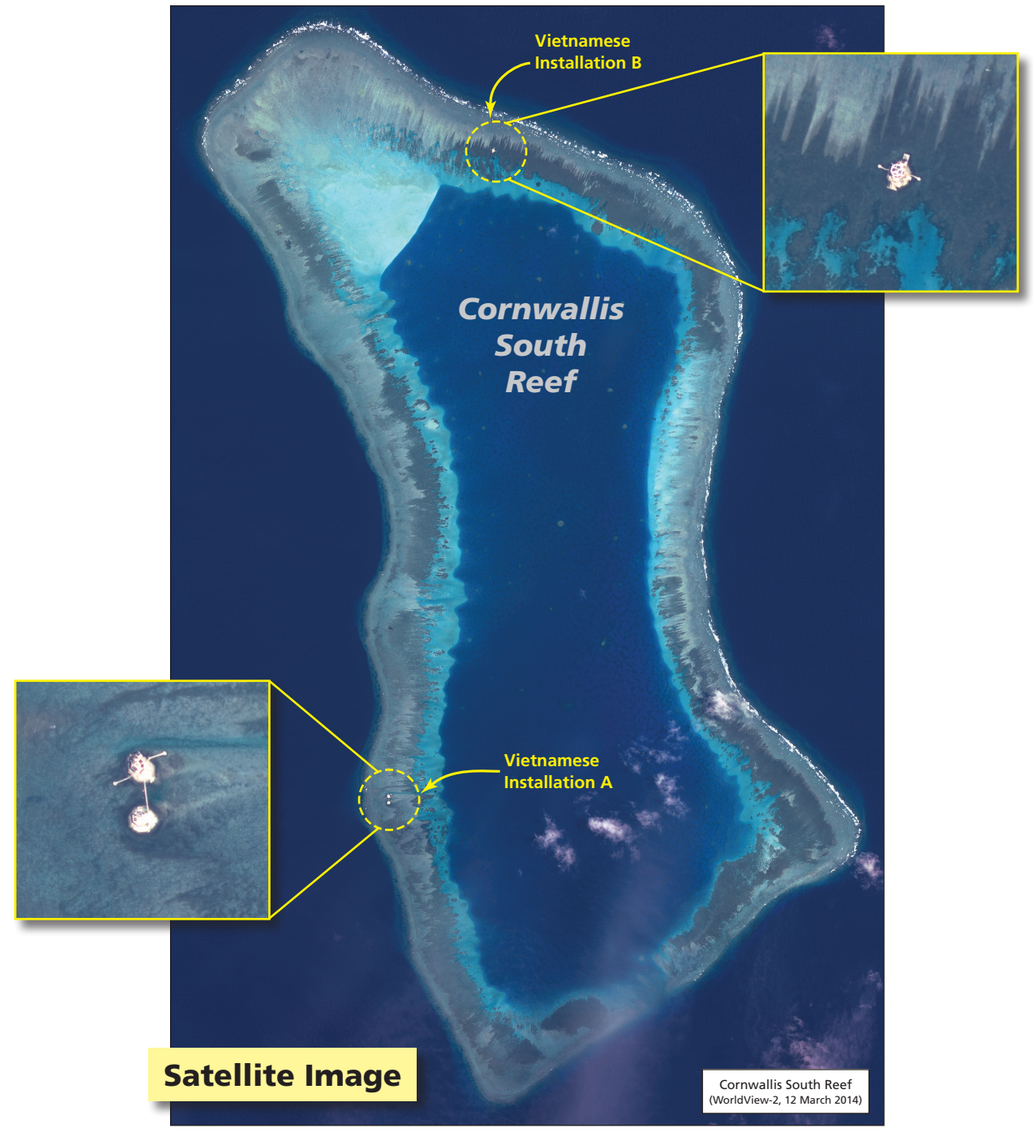
CORNWALLIS SOUTH REEF

Also known as:

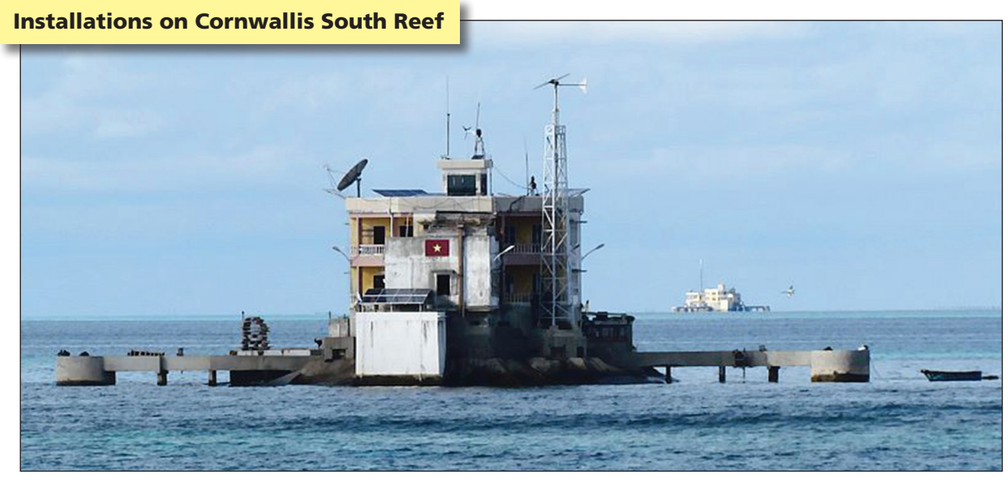
Chinese: Nanhua Jiao (南华礁)
Philippine: Osmeña

Coordinate Location: 08°43'00"N - 114°11'00"E
Nearest High Tide Feature: Pearson Reef, 29.8 M
Distance to Palawan: 167.7 M
Distance to Hainan: 620.6 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam





Installations on Cornwallis South Reef



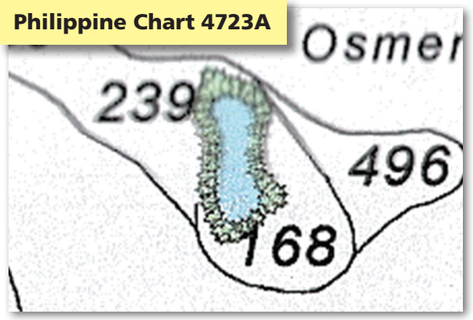
CORNWALLIS SOUTH REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

CORNWALLIS REEF is situated about 10 miles N of Pagkakaisa Banks and Reefs. It consist of underwater dangerous rocks whose existence was reported to be doubtful.

Philippine Chart 4723A

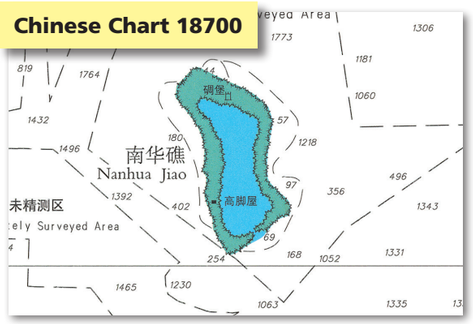


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Nanhua Reef - Located approximately 6 nautical miles east of the southeastern end of Liumen Reef, it is a coral atoll that is trending toward north and south. There is a lagoon inside with a water depth of 9 meters.

Chinese Chart 18700



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

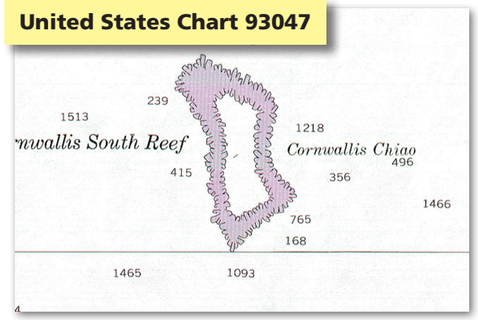
3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Cornwallis South Reef (8°45'N., 114°13'E.), 8 miles ESE of Allison Reef, consists of a drying reef enclosing a lagoon which is open to the S.

The entrance is about 0.2 mile wide and contains several coral patches. Depths of 9m are found within the lagoon, but it has not been closely examined. There are some small drying rocks on the SE side of the reef which breaks in a NE wind.

Cornwallis South Reef remains identifiable at HW.

United States Chart 93047

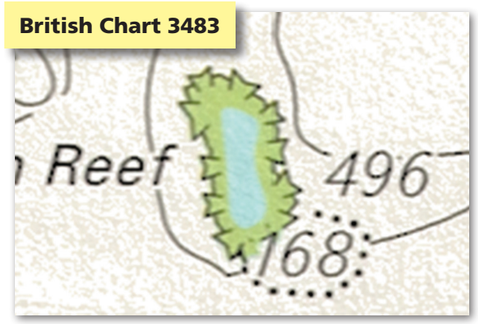


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Cornwallis South Reef (8°43'·02N 114°11'·00E), which dries, and the lagoon enclosed by it, have not been thoroughly examined. The lagoon has depths of 9 m; there is an entrance at its S end, also with a depth of 9 m, in which there are several coral patches.

British Chart 3483

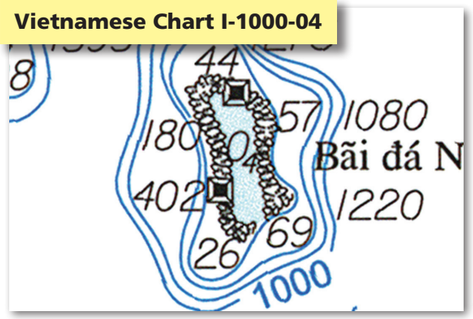


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

CORNWALLIS SOUTH REEF

Additional Charts

Vietnamese Chart I-1000-04



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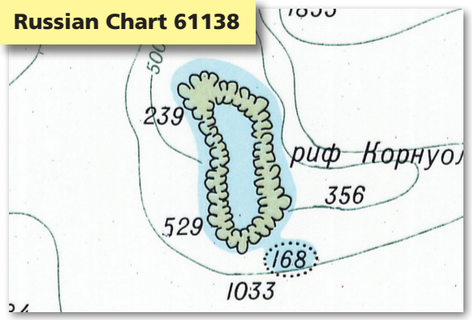
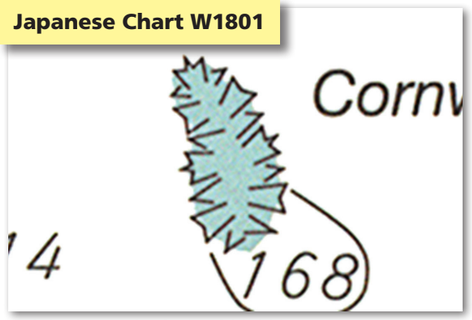
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



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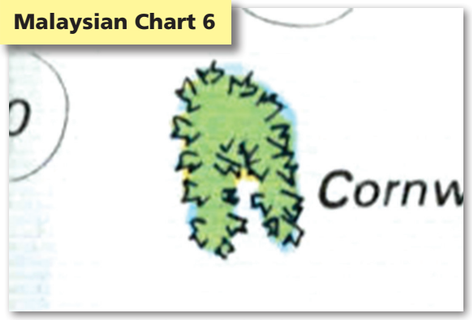
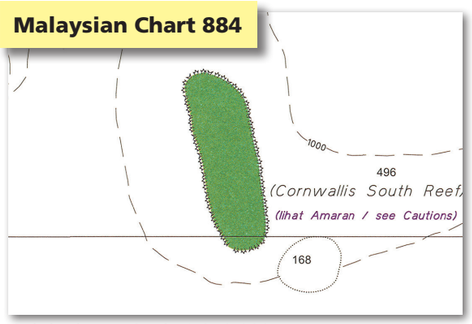
Complete chart reproduced as Annex NC11

Malaysian Chart 6



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Cornwallis South Reef is a drying reef that encloses a lagoon which is open to the south. Malaysian chart 6, and the Chinese and Vietnamese nautical charts, as well as the satellite image, show a very small entrance into the reef. There are some small rocks that dry at low water on the southeast side of the reef. The Chinese nautical chart shows an undefined black dot on the southwest part of the reef. The Vietnamese nautical chart shows two black squares, one in the north and the other in the southwest part of the reef. None of the other charts show anything above tidal datum. The satellite imagery shows one feature in the northern part of the reef and two in the southwest. Photographs clarify that these "dots" are man-made installations that have been built by extending cement pillars to the seafloor.

Historical and Anthropological Information

Cornwallis South Reef was described as a "doubtful Shoal" in 1879 by the United Kingdom Hydrographic Department, which reported that "Cornwallis south reef is placed on the Admiralty chart in lat 8º 50' N., long. 114º 11 1/2' E., and shown as being 3 or 4 miles in extent".[1]

Cornwallis South Reef was among the features claimed by France in 1933. A 15 July 1933 article in *The Peiping Chronicle* stated: "Apparently nobody except China has any sort of claim, China's claim resting on the fact that the islands seized are said to be inhabited by Chinese fishermen, and that claim will be brushed aside as irrelevant. Apparently China has never exercised jurisdiction over the islands, though as possible dependencies of the King of Sulu they may at one time have owed an indirect allegiance to China".[2]

The Vietnamese military established a presence on Cornwallis South Reef in 1988.[3] In 1999, Vietnam upgraded structures that had been built earlier.[4] The feature remains occupied by Vietnam.

The Status of the Feature under UNCLOS

Cornwallis South Reef is a low-tide elevation under Article 13. All the nautical charts show that the reef dries at low tide. This is confirmed by the satellite imagery. It is 167.7 M from Palawan and 29.8 M from the nearest high-tide elevation Pearson Reef. The Philippines knows of no record of human habitation prior to occupation by the Vietnamese military in 1988.[5]

CORNWALLIS SOUTH REEF

References

[1] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 289. SWSP, Vol. IV, Annex 389.

[2] "Feu de Joie pour le Quatorze Juillet", *Peiping Chronicle* (15 July 1933). SWSP, Vol. IV, Annex 399.

[3] Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

[4] *Id.*, p. 150.

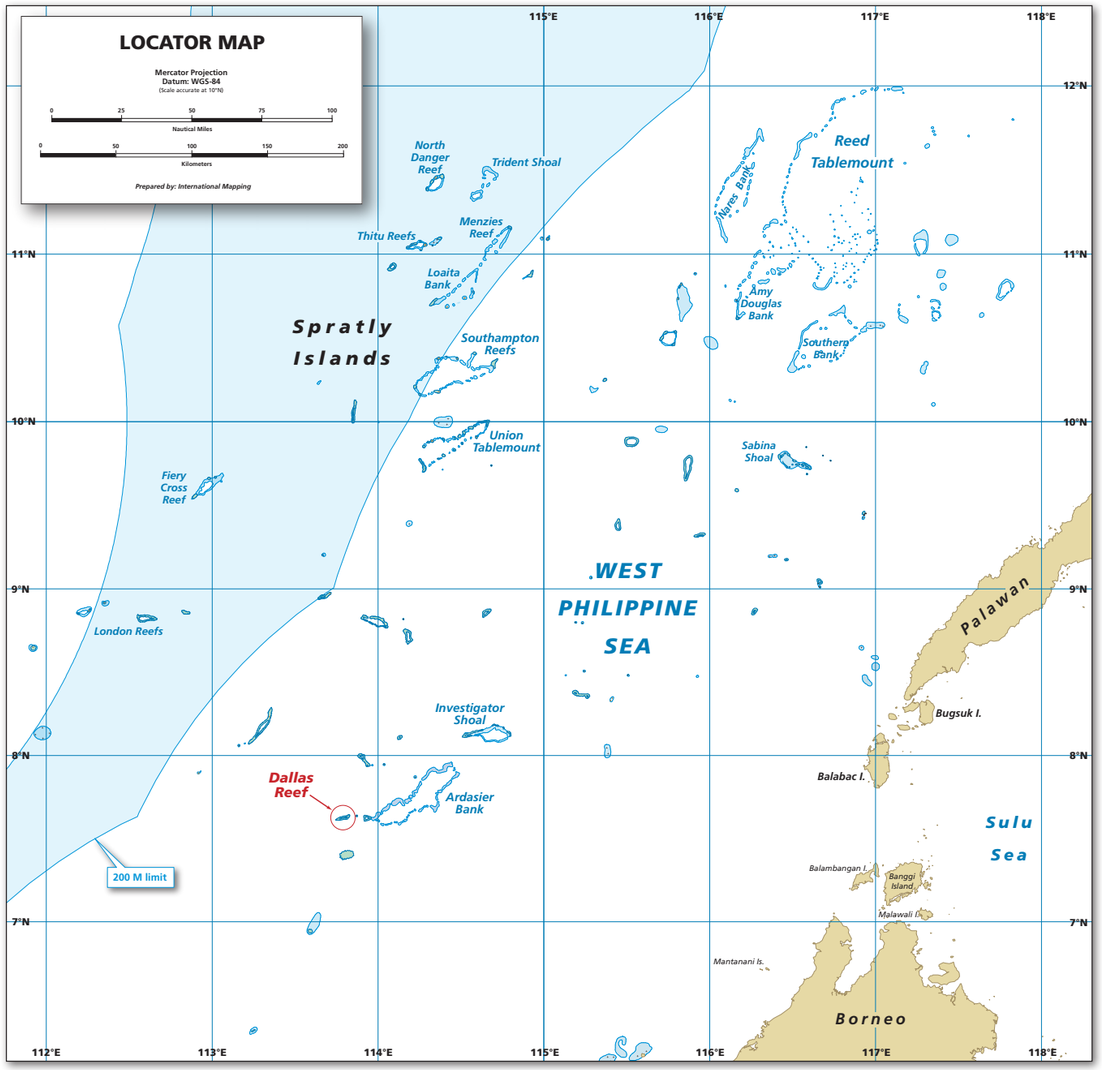
[5] Jianming Shen, "International Law Rules and Historical Evidences Supporting China's Title to the South China Sea Islands", *Hastings International & Comparative Law Review*, Vol. 21, No. 1 (1997-1998), p. 56. MP, Vol. VII, Annex 260. *See also* Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

DALLAS REEF

Also known as:

Chinese: Guangxing Jiao (光星礁)
Philippine: Rajah Matanda

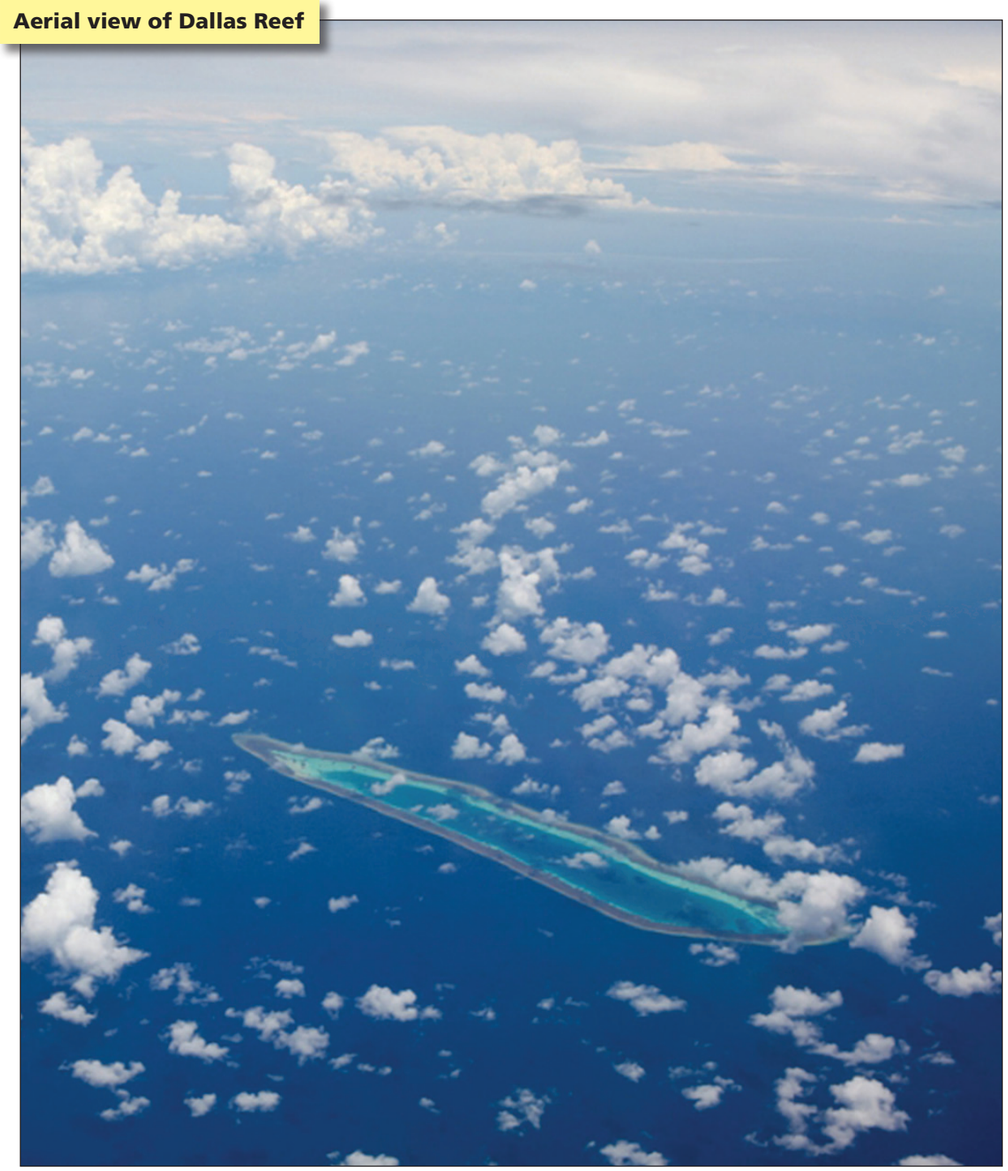
Coordinate Location: 07°38'00"N - 113°53'00"E
Nearest High Tide Feature: Swallow Reef, 14.4 M
Distance to Palawan: 185.2 M
Distance to Hainan: 674.5 M
Claimed by: China, Malaysia
Occupied by: Malaysia



Satellite Image

Dallas Reef
(WorldView-2, 20 March 2014)

Aerial view of Dallas Reef



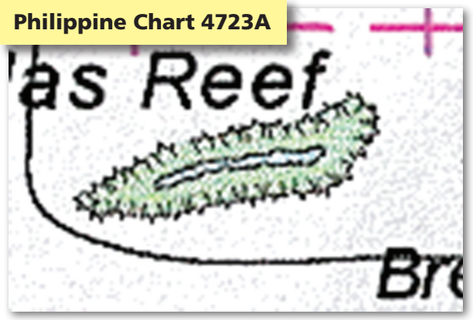
DALLAS REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

DALLAS REEF lies 5 miles W of Antonio Luna Reef and dries. The reef entirely encloses a lagoon. The lagoon may be accessible to boats at HW. A shoal, with a depth of 16.5 meters (54 fms), exist in 7° 35' N, 114° 39' E, about 18 miles SE of the SE side of Antonio Luna Bank. A bank with a depth of 82 meters (45 fms) over it lies 24 miles farther SSE.

Philippine Chart 4723A

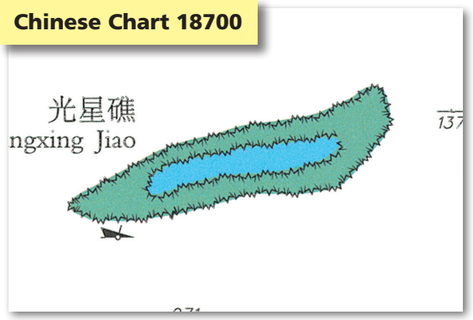


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Approximately 14 nautical miles to the north and east of Danwan Reef are Guangxing Reef, Guangxing Zi, and Andu Bank. Located to its northeast, Andu Bank is an underwater reef flat that is trending northeast-to-southwest and has a length of approximately 38 nautical miles and at its widest is 18 nautical miles. The water depth above it is 4 meters ~ 16.4 meters. The shallowest section is located at the northeast end of the reef flat. The southern edge of the reef flat is very steep, and the north side has an underwater submerged reef: Polang Reef. Guangxing Zi Reef is located at the southwest end of the reef flat, and it is an exposed coral bank. Guangxing Reef is approximately 8 nautical miles west of Guangxing Zi Reef, and between them, there is an underwater submerged shoal.

Chinese Chart 18700

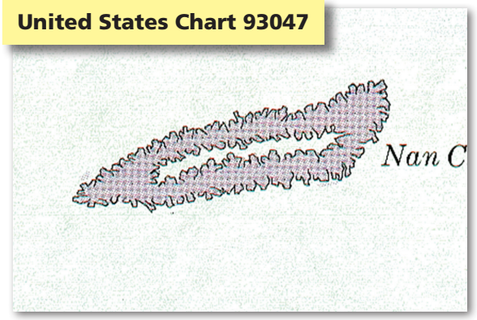


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Dallas Reef (7°38'N., 113°48'E.) is about 5 miles long E-W and dries entirely, enclosing a small lagoon. A line from Dallas Reef to Barque Canada Reef marks a portion of the approximate SW limit of Dangerous Ground.

United States Chart 93047

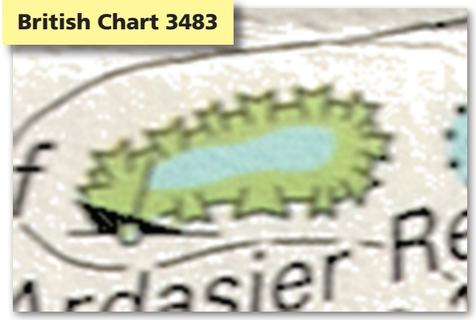


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Dallas Reef (7°37'·80N 113°47'·52E), which dries, entirely encloses a small lagoon. The lagoon is probably accessible to boats at HW. There is no anchorage. A stranded wreck lies on the SW fringe of the reef.

British Chart 3483

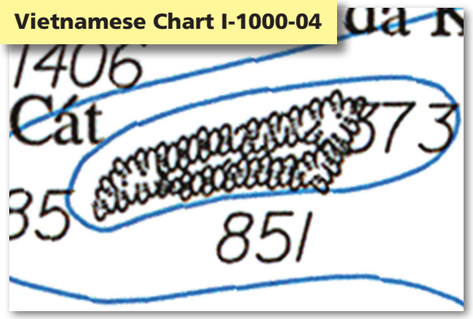


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

DALLAS REEF

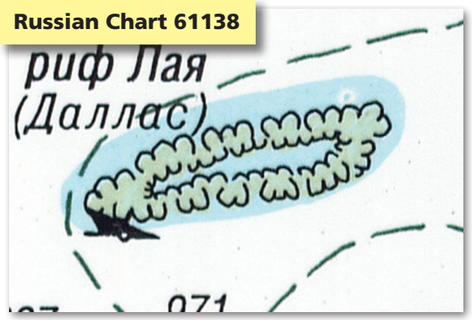
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138

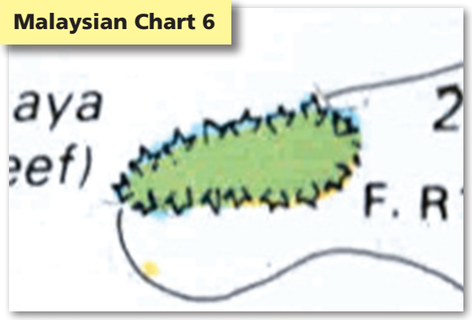


Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

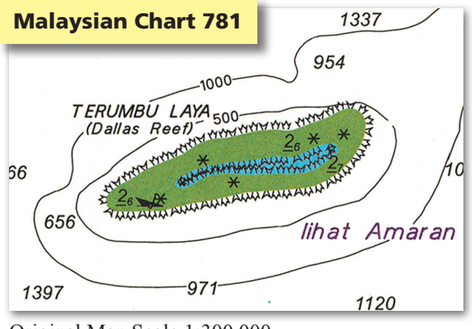
Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 6



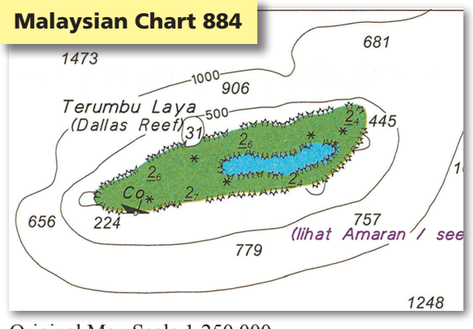
Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Malaysian Chart 781



Original Map Scale 1:300,000
Complete chart reproduced as Annex NC14

Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Dallas Reef, which dries at low water, extends east-west for about 5 M and encloses a small lagoon. A shipwreck is located off the southwest corner of the reef and is depicted on the British, Russian, Malaysian, and Chinese charts. The satellite image, photographs, and nautical charts show no evidence of any features that are above water at high water; everything on the reef is submerged at high tide.

Historical and Anthropological Information

Dallas Reef was referred to as "Dallas Breakers" or just "Breakers" in 19th century sailing directions. They were seen by a Mr. Dallas in 1860 at a latitude and longitude near to Ardasier Bank that corresponds to what is currently referred to as Dallas Reef. The Dallas breakers were described as "shoal patches on different parts of one large bank".[1]

In 1901, the British Hydrographic Department described Dallas Reef as follows: "Breakers, in lat. 7º 38' N., long. 113º 53' E., were reported to have been seen in 1860 by Mr. Dallas, while proceeding from the wreck of the *Fiery Cross* to Labúan in the boats".[2]

Dallas Reef was occupied by Malaysian armed forces in 1987.[3] It is included in a Malaysian chart, published in 1988, that was based on hydrographic work conducted by the Malaysian navy in 1987.[4] The chart includes the following statement:

> CAUTION Certain areas within this chart as indicated by the scarcity of sounding have not been systematically surveyed especially around Permatang Ubi (Ardasier Bank) Terumbu Laya (Dallas Reef) Terumbu Perahu (Barque Canada Reef) and Terumbu Peninjau (Investigator Reef). Existence of uncharted rocks and corals very likely. Vessels are warned not to attempt to enter inside any lagoons.[5]

Malaysia currently uses the reef for scuba diving tourism.[6]

The Status of the Feature under UNCLOS

Dallas Reef is a low-tide elevation under Article 13. The nautical charts and sailing directions show that Dallas Reef encloses a small lagoon, is submerged at high tide, and dries at low tide. It is 185.2 M from Palawan and 14.4 M from the nearest high-tide elevation Swallow Reef. The Philippines knows of no record of human habitation prior to occupation by the Malaysian military in 1988.[7]

DALLAS REEF

References

[1] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), p. 624. SWSP, Vol. IV, Annex 390.

[2] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (4th ed., 1901), p. 237. SWSP, Vol. IV, Annex 392.

[3] Johan Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 76. SWSP, Vol. V, Annex 460.

[4] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", IBRU Maritime Briefing, Vol. 1, No. 6 (1995), p. 44. MP, Vol. VIII, Annex 256.

[5] *Id.*

[6] Dallen J. Timothy, "Tourism, war, and political instability: territorial and religious perspectives", in Tourism and War (R. Butler & W. Suntikul, eds., 2013), p. 16. SWSP, Vol. V, Annex 457.

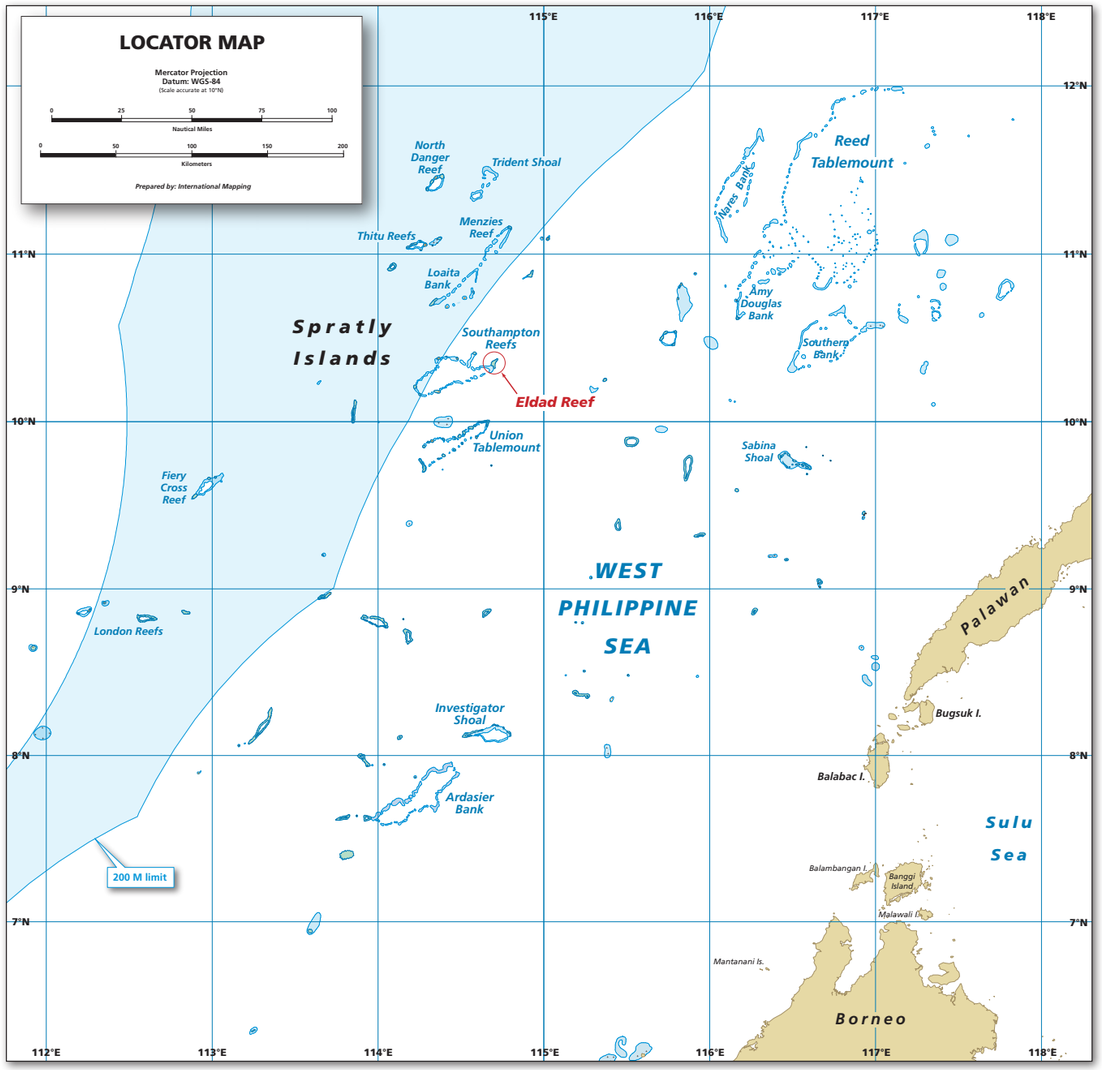
[7] Johan Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 76. SWSP, Vol. V, Annex 460.

ELDAD REEF

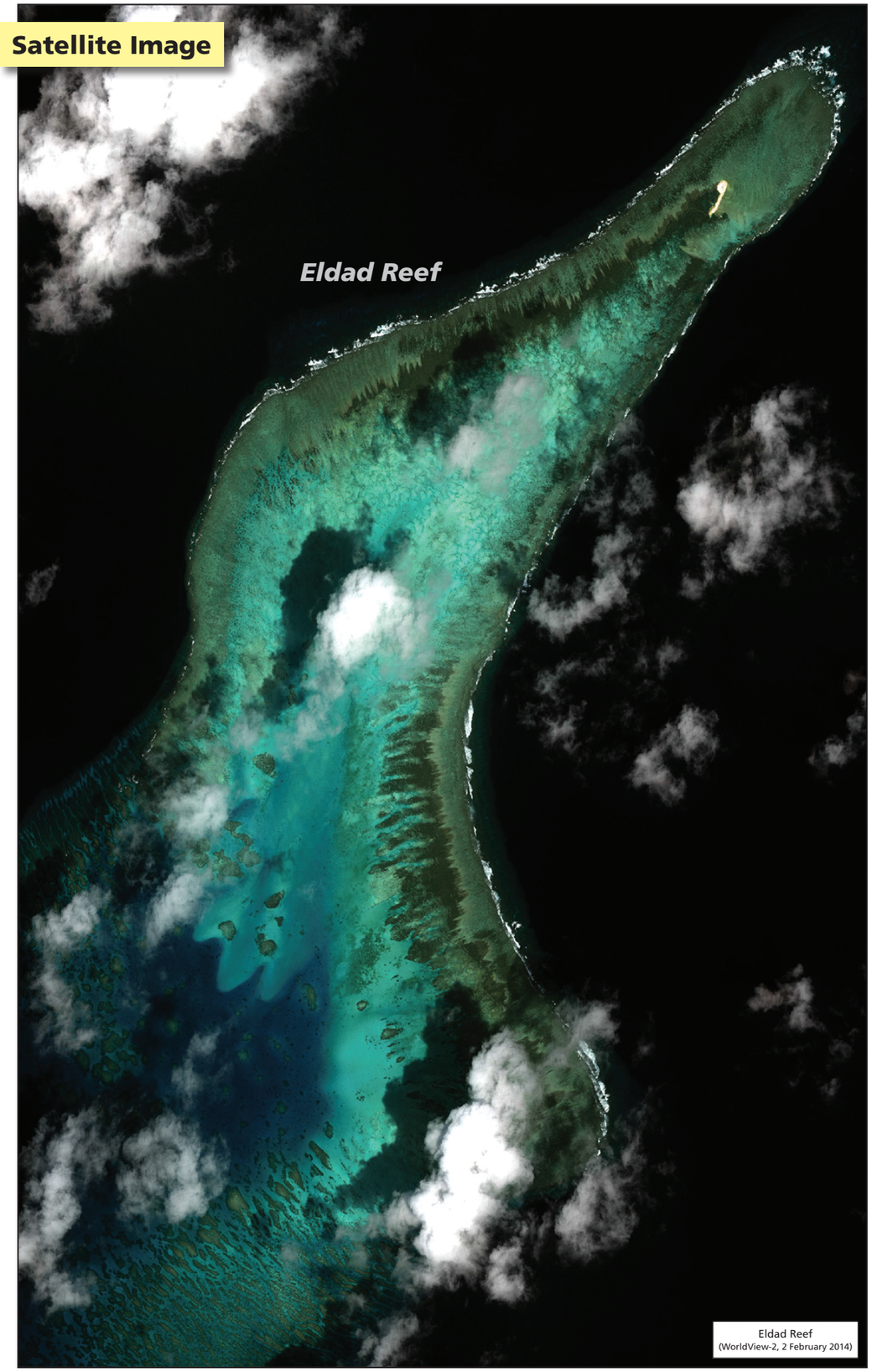
Also known as:

Chinese: Anda Jiao (安达礁)
Philippine: Malvar Reef

Coordinate Location: 10°21'00"N - 114°42'00"E
Nearest High Tide Feature: Sand Cay, 12.4 M
Distance to Palawan: 181.8 M
Distance to Hainan: 550.1 M
Claimed by: China, Philippines, Vietnam
Occupied by: Unoccupied



Satellite Image



Eldad Reef
(WorldView-2, 2 February 2014)

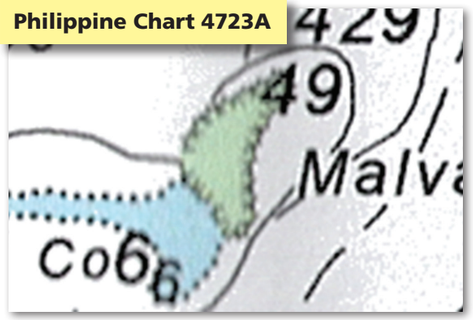
ELDAD REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

MALVAR REEF (10° 21' N, 114° 42' E) lies at the E end of Tizard Bank, 7 miles SE of Petley Reef. A few large and many small above-water rocks lie on this reef. The NE end of Malvar Reef is narrow and steep-to; a ridge extends 1 mile NE on which depths increase to over 91 meters (50 fms).

Philippine Chart 4723A

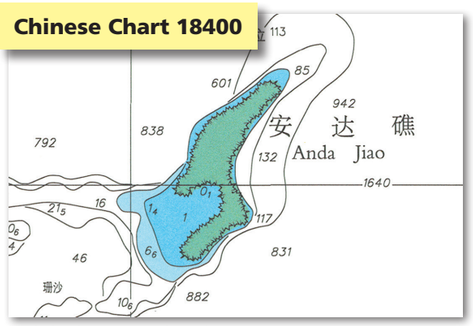


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Anda Reef - Located at the eastern end of the Zhenghe reef group, it is approximately 7 nautical miles southeast of the Bolan Reef. It is an underwater atoll. This atoll is approximately 4.5 nautical miles in length. Its northeast end is both narrow and steep. There are rocks and reefs that extend one nautical mile northeast. The water depth above it gradually increases to over 91.4 meters.

Chinese Chart 18400

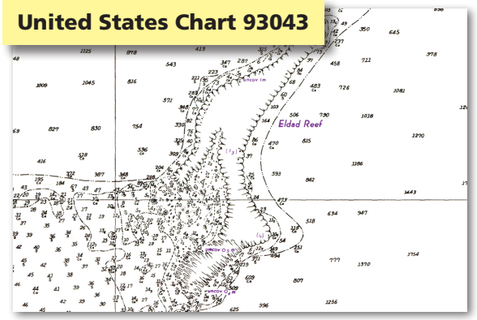


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Eldad Reef, 7 miles ESE of Petley Reef, is the easternmost drying reef of the group. The reef is 4.5 miles long with the middle section having a depth of about 1.2m, located at the NE end of the reef.

United States Chart 93043

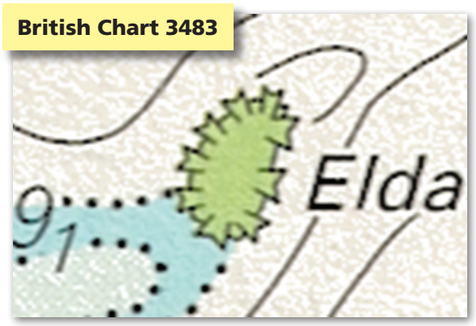


Original Map Scale 1:75,000
Complete chart reproduced as Annex NC51

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Eldad Reef (10°21'·13N 114°41'·90E), which lies at the E extremity of Tizard Bank. It is steep-to on all but its SW side. A few large, and many small above-water rocks lie on the reef.

British Chart 3483

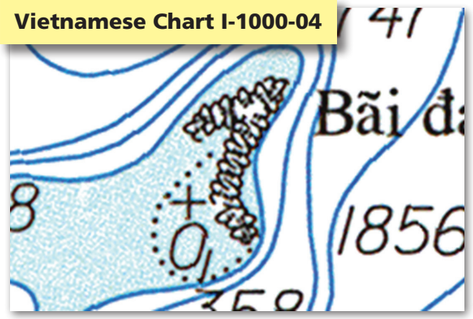


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

ELDAD REEF

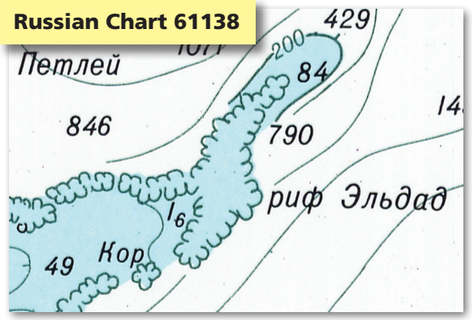
Additional Charts

Vietnamese Chart I-1000-04



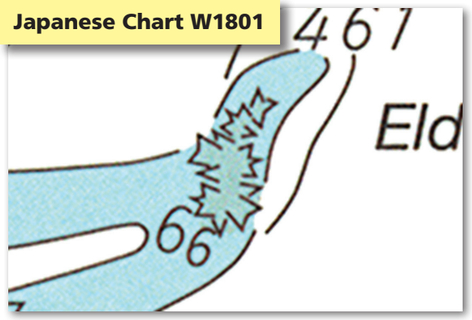
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Eldad Reef, which extends 4.5 M, is the easternmost drying reef of Tizard Bank. The Chinese sailing directions refer to the feature as an "underwater atoll". According to the Philippine and British sailing directions, a few large, and many small, above-water rocks lie on the reef. Those sailing directions do not specify whether the rocks are above water at high tide or low tide. Only the U.S. nautical chart (NGA 93043) shows these six rocks to uncover to specified heights, ranging from 0.4 to 1 metre. None of the other charts even show these rocks. These rocks, along with the reef itself, are low-tide elevations. Satellite imagery and photographs show dredging and land reclamation in the northern part of the reef.

Historical and Anthropological Information

Eldad Reef is on Tizard Bank, at least parts of which were reported by the British ship *Dolphin* in 1767, and surveyed by the *H.M.S. Rifleman* in 1867.[1] The Bank was also examined by Commander Moore in 1888.[2] Sailing Directions describing Eldad Reef the following year call it "peculiarly shaped", and note that "[a] few large rocks are visible at high water".[3]

Although France claimed "Tizard Reef" and several other features in the early 1930s, the British Admiralty rejected the claim in February 1933, concluding it had "no basis in international law and call[ing] for a strong protest without any further delay".[4] In opposing France's claim, the Admiralty observed that "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[5]

The Official Journal of the French Republic describing France's claims in July 1933 did not mention Eldad Reef by name.[6]

During World War II, Japan occupied and built facilities on Tizard Bank.[7] It is unclear whether any of Japan's activities occurred on Eldad Reef. Although the feature was unoccupied as of mid-October 2014, China has reclaimed land on Eldad Reef. A backhoe recently sighted at the feature "apparently served a dual purpose: to get filling materials for the reclamation and to harvest [endangered] giant clams".[8]

The Status of the Feature under UNCLOS

Eldad Reef is a low-tide elevation under Article 13. It dries at low tide. Although the sailing directions of the Philippines and the United Kingdom indicate the presence of a few "above-water rocks", without specifying whether those rocks are above water at high tide, the sailing directions of China call the feature an "underwater atoll". The U.S. sailing directions refer to Eldad as a "drying reef". None of the nautical charts indicate presence of a naturally formed area of land that is above water at high tide. It is 12.4 M from the nearest high tide feature (Sand Cay), and 181.8 M from Palawan.

References

[1] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom (23 Feb. 1933), p. 4. SWSP, Vol. III, Annex 364.

[2] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 44. MP, Vol. VIII, Annex 256.

[3] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), pp. 589-590. SWSP, Vol. IV, Annex 390.

[4] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), para. 11. SWSP, Vol. III, Annex 363.

[5] *Id*., para. 12.

[6] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[7] Bruce Elleman, "Maritime territorial disputes and their impact on maritime strategy: A historical perspective", in *Security and International Politics in the South China Sea: Towards a cooperative management regime* (S. Bateman and R. Emmers, eds., 2009), p. 48. SWSP, Vol. V, Annex 453.

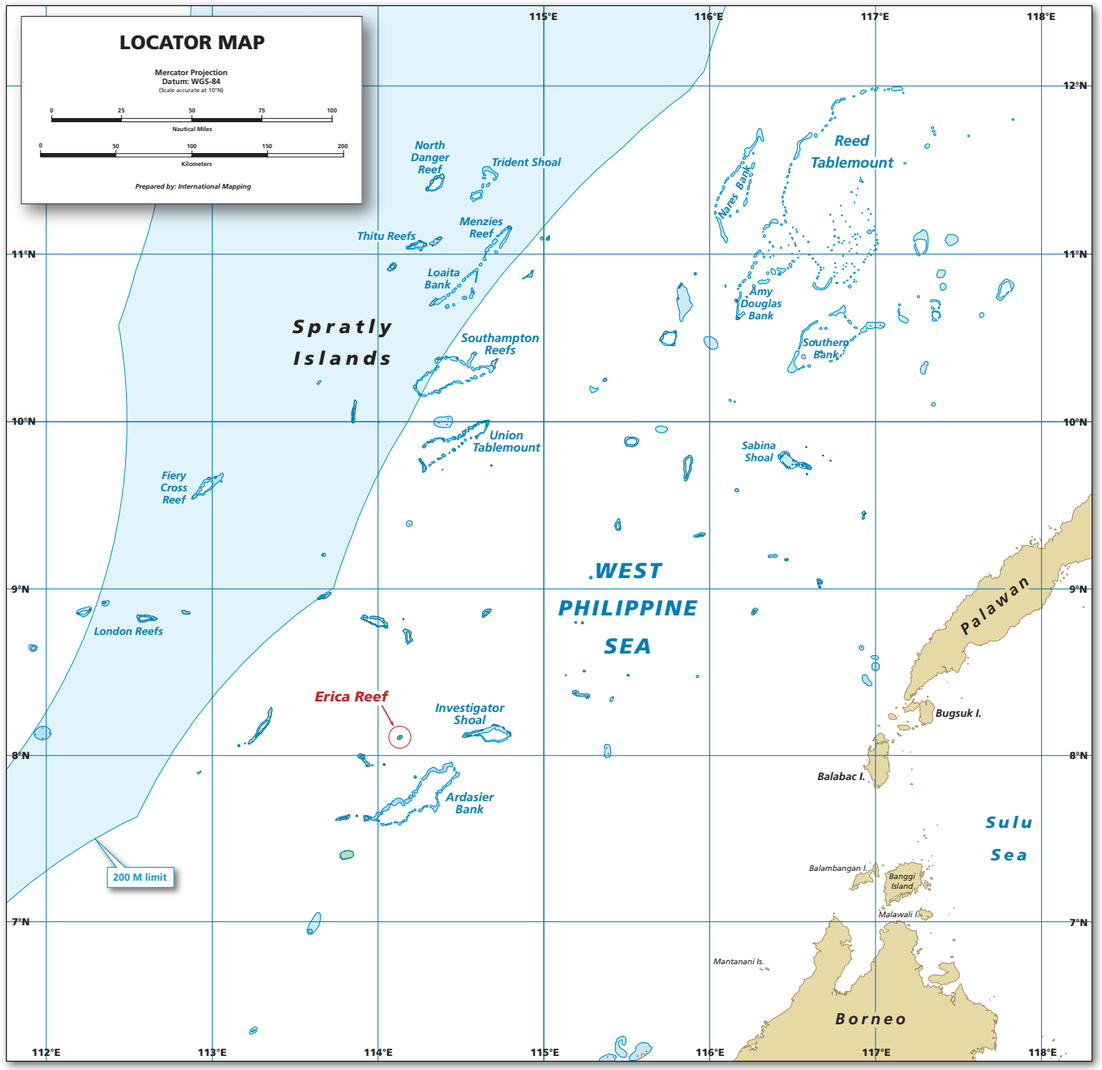
[8] Nikko Dizon, "Photos confirm China reclamation; experts hit reef degradation in Spratlys", *Philippine Daily Enquirer* (7 June 2014). SWSP, Vol. IV, Annex 436.

ERICA REEF

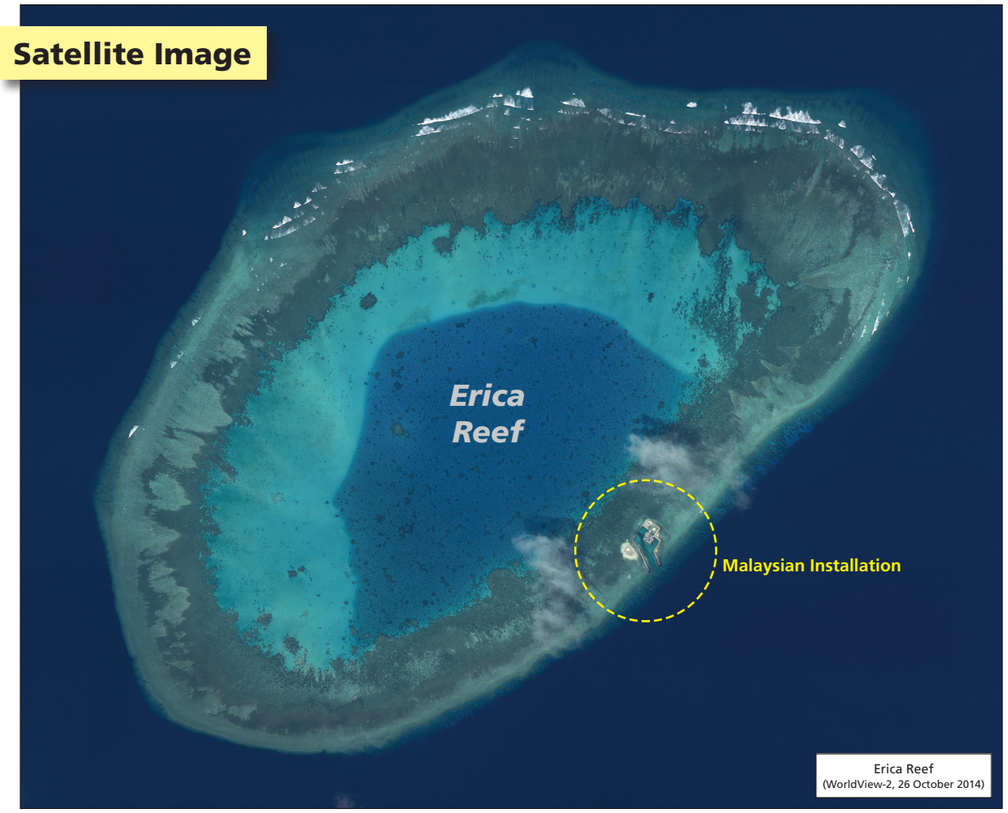
Also known as:

Chinese: Boji Jiao (簸箕礁)
Philippine: Gabriela Silang

Coordinate Location: 08°06'00"N - 114°09'00"E
Nearest High Tide Feature: Mariveles Reef, 14.5 M
Distance to Palawan: 165.7 M
Distance to Hainan: 654.9 M
Claimed by: China, Malaysia, Philippines
Occupied by: Malaysia



Satellite Image



Erica Reef
(WorldView-2, 26 October 2014)

Enlargement of Installation

Aerial view of Erica Reef

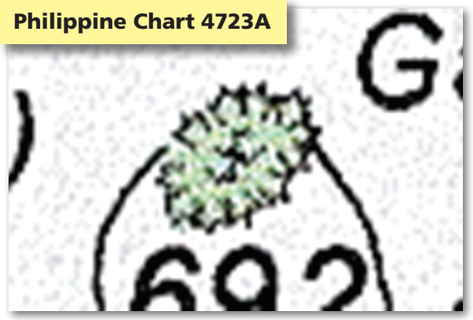
ERICA REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

ERICA REEF (8° 06' N, 114° 09' E), 13 miles ENE of Mariveles Reef dries and encloses a shallow lagoon. Some rocks may appear at high water on its E side.

Philippine Chart 4723A

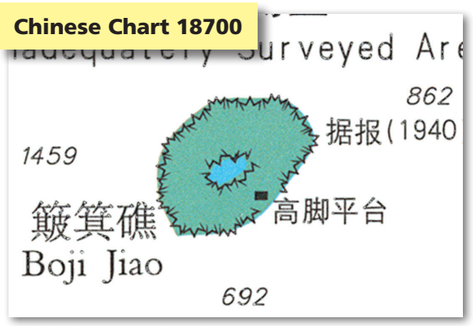


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Not included.

Chinese Chart 18700

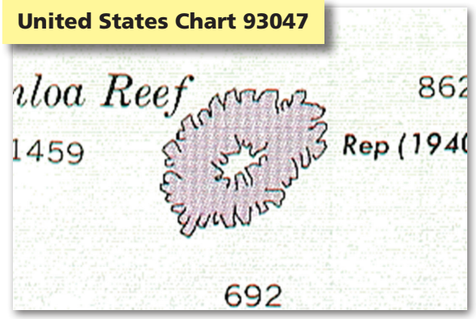


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Erica Reef (Enloa Reef) (8°07'N., 114°08'E.), lying WNW of the N end of Ardasier Reef, is an oval drying reef that encloses a shallow lagoon. A few drying rocks lie on the E side of Erica Reef and may show at HW. No entrance or anchorage has been found.

United States Chart 93047

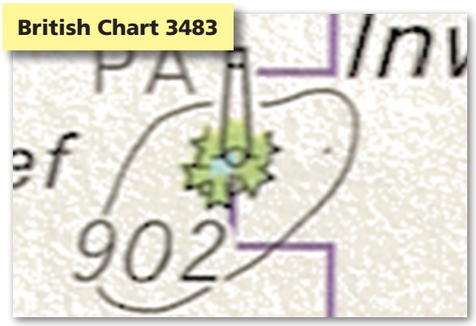


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Erica Reef (8°06'·61N 114°08'·23E), which is small and dries, entirely encloses a shallow lagoon. A few rocks may show on its E side at HW. There is no anchorage, but the lagoon is probably accessible to boats at HW. A tower stands near the W end of the reef.

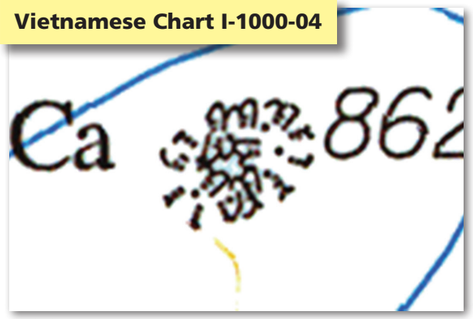
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

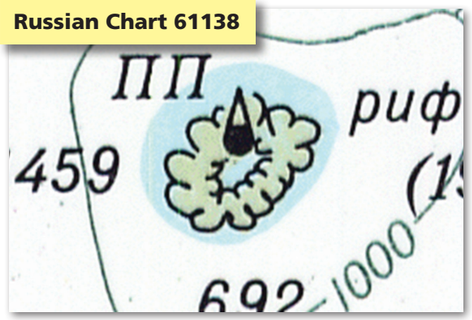
ERICA REEF
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138

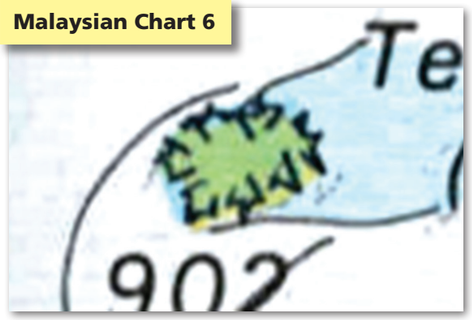


Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 6



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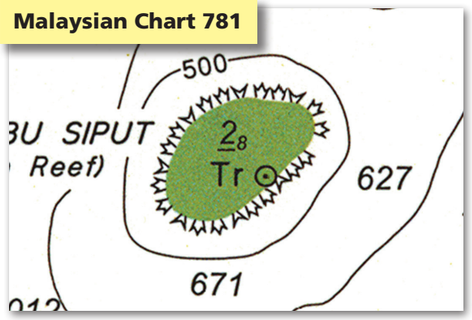
Complete chart reproduced as Annex NC13

Malaysian Chart 781



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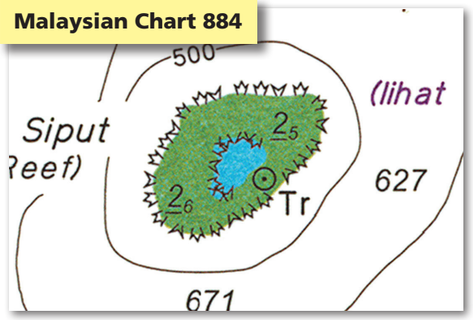
Complete chart reproduced as Annex NC14

Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Erica Reef dries and encloses a shallow lagoon. Several of the sailing directions suggest that some rocks "may" be visible at high water on the eastern side of the reef. However, none of the nautical charts show such rocks. It is likely that the waves that crash against the reef in this location, as seen by the white coloring in the satellite imagery, expose these rocks at high water. But this reef is a low-tide elevation. Only the Chinese and two of the Malaysian nautical charts show an undefined symbol in the southeast portion of the feature. These might indicate a man-made installation. Satellite imagery and photographs show this structure, which would have been built either on the low-tide features or in shallow water.

Historical and Anthropological Information

No record of human habitation has been found prior to occupation by Malaysian armed forces in 1998.[1] The Philippines has been unable to find any other historical or anthropological reference to the feature.

The Status of the Feature under UNCLOS

Erica Reef is a low-tide elevation under Article 13. None of the nautical charts depict any feature consistently above water at high tide. It is located within 165.7 M of Palawan, and at least 14.5 M from the nearest high-tide feature, Mariveles Reef.

References

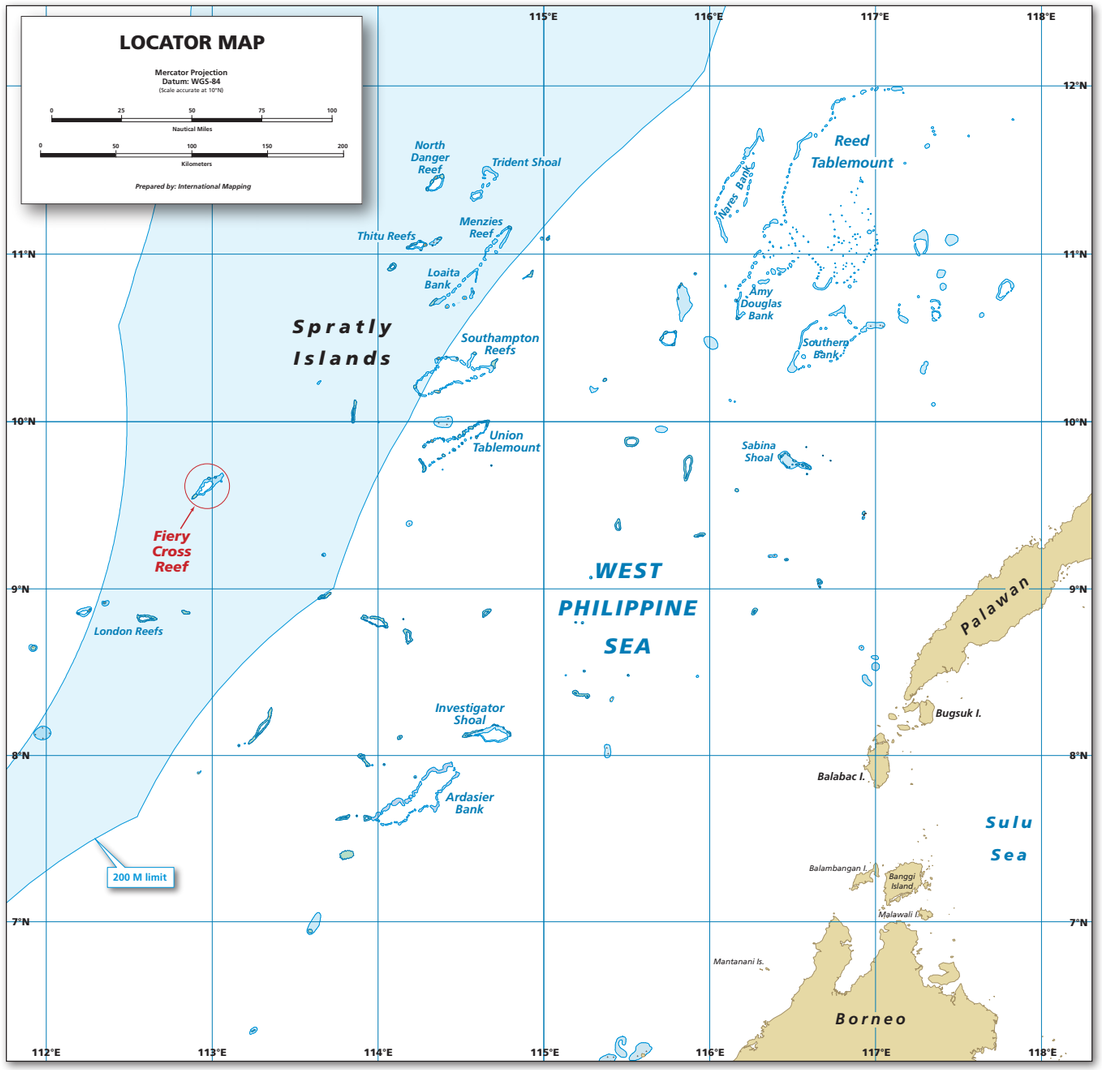
[1] Johan Saravanamuttu, “Malaysia's Approach to Cooperation in the South China Sea”, in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 76. SWSP, Vol. V, Annex 460.

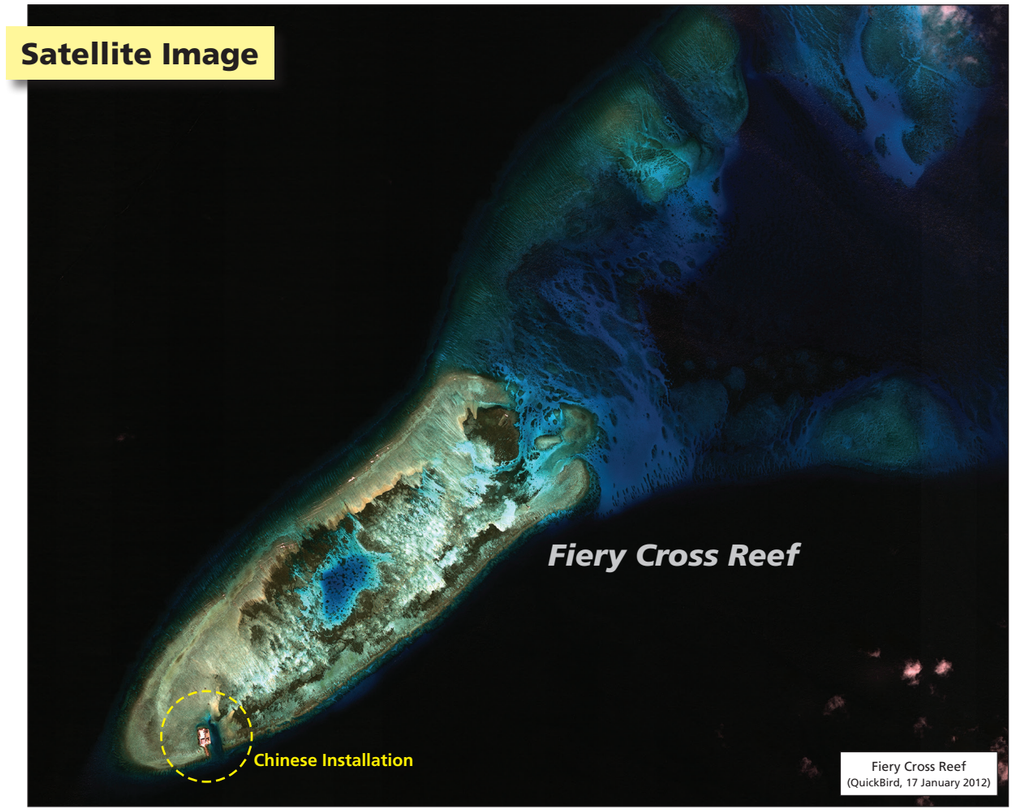
FIERY CROSS REEF

Also known as:

Chinese: Yongshu Jiao (永暑礁)
Philippine: Kagitingan Reef

Coordinate Location: 09°38'00"N - 112°57'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 257.0 M
Distance to Hainan: 547.8 M
Claimed by: China, Philippines, Vietnam
Occupied by: China





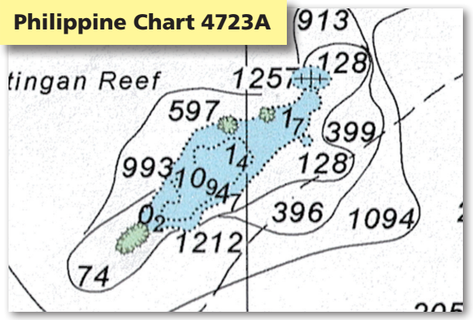
FIERY CROSS REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

KAGITINGAN REEF, lies with its SW extremity (9˚ 33' N, 112˚ 54' E) 40 miles N of Calderon [Cuarteron] Reef. The reef is steep-to and composed of patches of coral, several of which dry or are awash with depths of from [*sic*] 15 meters to 40 meters (8 to 22 fms) between them. The whole reef covers at HW except a prominent rock (9˚ 33' N, 112˚ 53' E), 1 meter high, situated on the SW side of the largest drying patch near the SW end of the reef. The sea does not cover this reef in calm weather. A dangerous wreck lies 4 miles SW of the NW extremity.

Philippine Chart 4723A



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

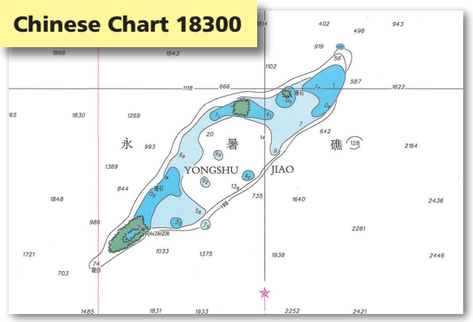
2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Yongshu Reef - Located at the southeast part of the Nansha Islands and the west end of the Nanhua waterway's south side, the reef is trending from northeast-to-southwest. Most of the atoll is submerged underwater. During high tide, only the western end has 2 sq. meters of natural reef rock exposed. During low tide, there are 7 pieces of reef flat of varying sizes that are exposed…

Yongshu Reef light beacon
Located at the north end of Yongshu Reef, 13 meters high, steel-frame structure.

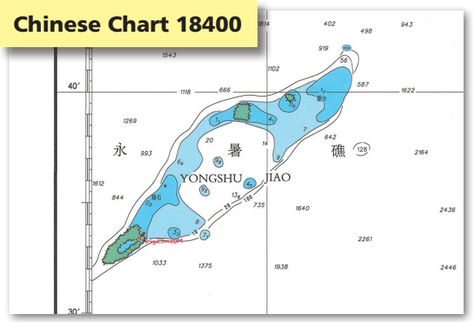
Yongshu Reef lighthouse
Located northeast of the Yongshu Reef light beacon, it is a white-colored, octagon-shaped steel and concrete tower. A lantern is installed at the top.

Chinese Chart 18300



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC27

Chinese Chart 18400



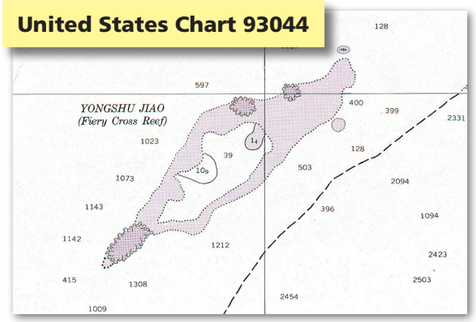
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Fiery Cross Reef (North West Investigator Reef) (9°35'N., 112°54'E.), marked by a light, is about 14 miles long NE-SW, steep-to, and composed of coral patches, several of which dry. The largest drying patch is located at the SW end of the reef and supports a prominent rock, 1m high. With the exception of this rock, the reef covers at HW. Breakers occur on Fiery Cross Reef with even a slight swell and make it visible from a distance of several miles.

A dangerous wreck lies 4 miles SW of the NW extremity of the reef.

United States Chart 93044

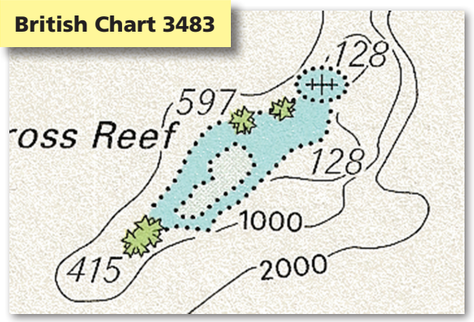


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

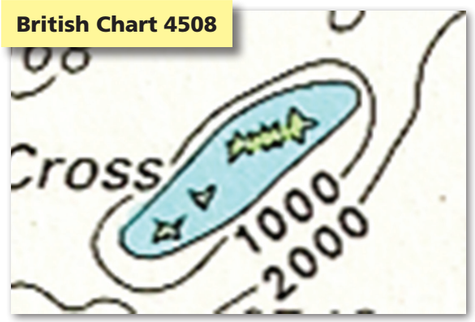
Fiery Cross Reef (9 °37'·40N 112°58'·60E) is steep-to and composed of patches of coral, several of which dry or are awash. There are depths of 15 to 40 m between them. A light (2.54) is exhibited from the SW extremity of the reef. With the exception of a prominent rock (9°33'·40N 112°53'·64E) 1 m high situated on the SE side of the largest drying patch, near the SW end of the reef, the whole reef usually covers at HW; in calm weather the reef does not cover. A dangerous wreck lies near the NE extremity.

British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

British Chart 4508

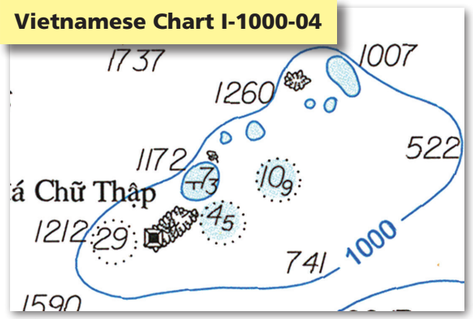


Original Map Scale 1:3,500,000
Complete chart reproduced as Annex NC47

FIERY CROSS REEF

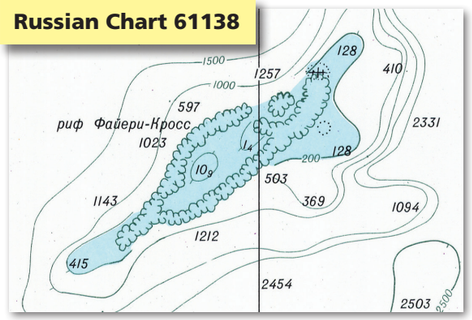
Additional Charts

Vietnamese Chart I-1000-04



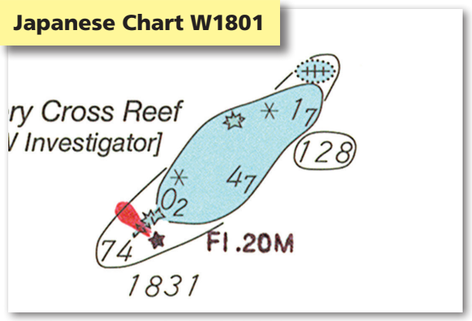
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Fiery Cross Reef is about 14 M long in a northeast-southwest direction. With the exception of one prominent rock (1 metre high) that is located at the southwest end of the reef, the reef is submerged at high tide. There is a lighthouse in the vicinity of the rock. The satellite imagery shows a man-made installation that has been built in the southern part of the reef, likely on one of the low tide coral patches shown on the nautical charts.

The Status of the Feature under UNCLOS

Fiery Cross Reef is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. As detailed in paragraphs 5.93-5.94 of the Memorial, with the exception of a small, 1 metre high rocky protrusion, the entire reef is submerged, with only patches drying at low water. At high tide, no more than 2 square metres are exposed above sea level.[1] There is no record of any human activity prior to China's occupation of the feature in 1988.[2] The Chinese government personnel who occupy the artificial installation that has been constructed to support China's sovereignty claim are dependent upon supplies from the outside. No economic activity takes place on the reef.

FIERY CROSS REEF

References

[1] Navigation Guarantee Department of the Chinese Navy Headquarters, China Sailing Directions: South China Sea (A103) (2011), p. 178. MP, Vol. VII, Annex 232.

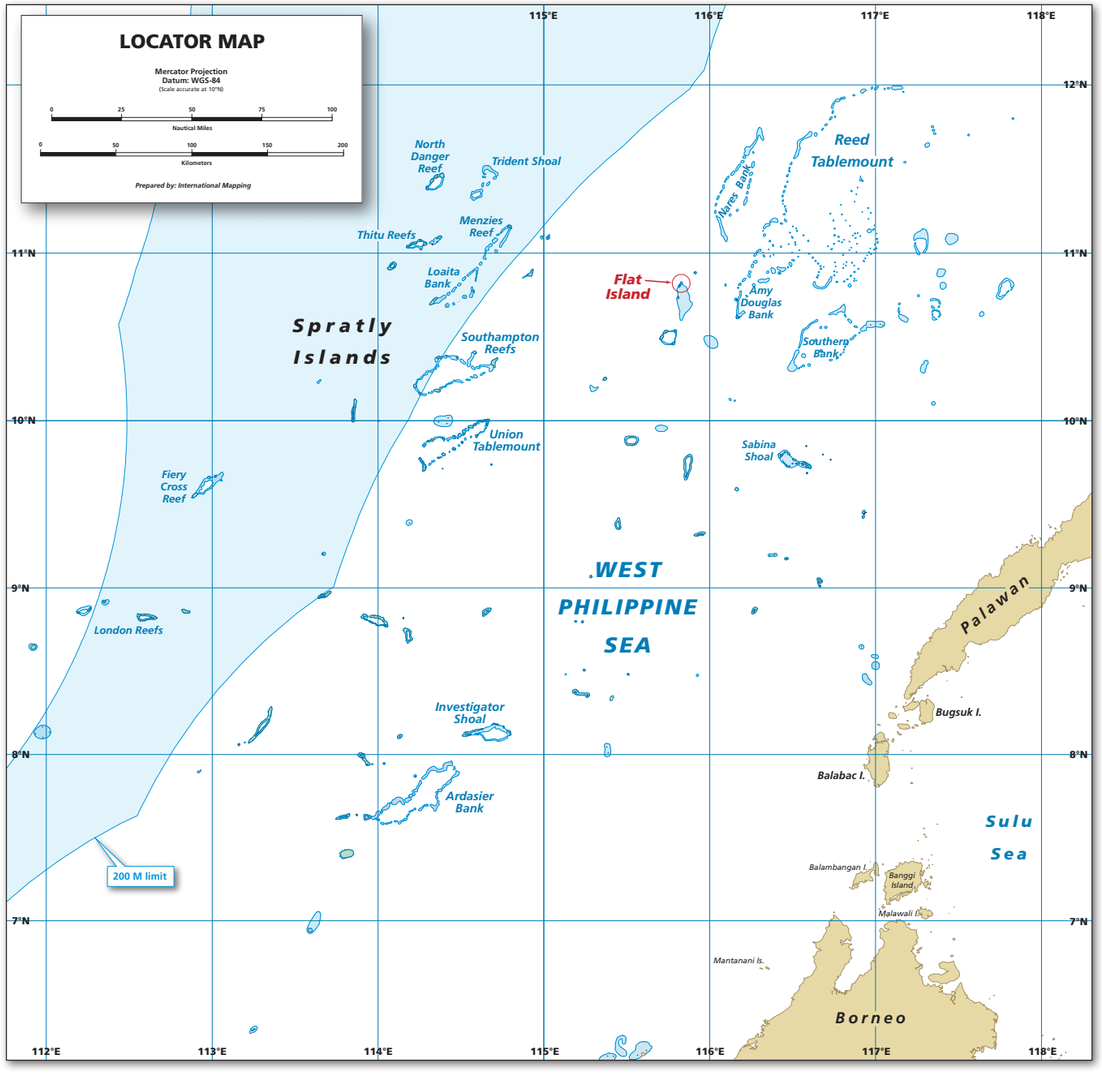
[2] Armed Forces of the Philippines, *Matrix of Events: Fiery Cross (Kagitingan) Reef* (2013). MP, Vol. IV, Annex 88.

FLAT ISLAND

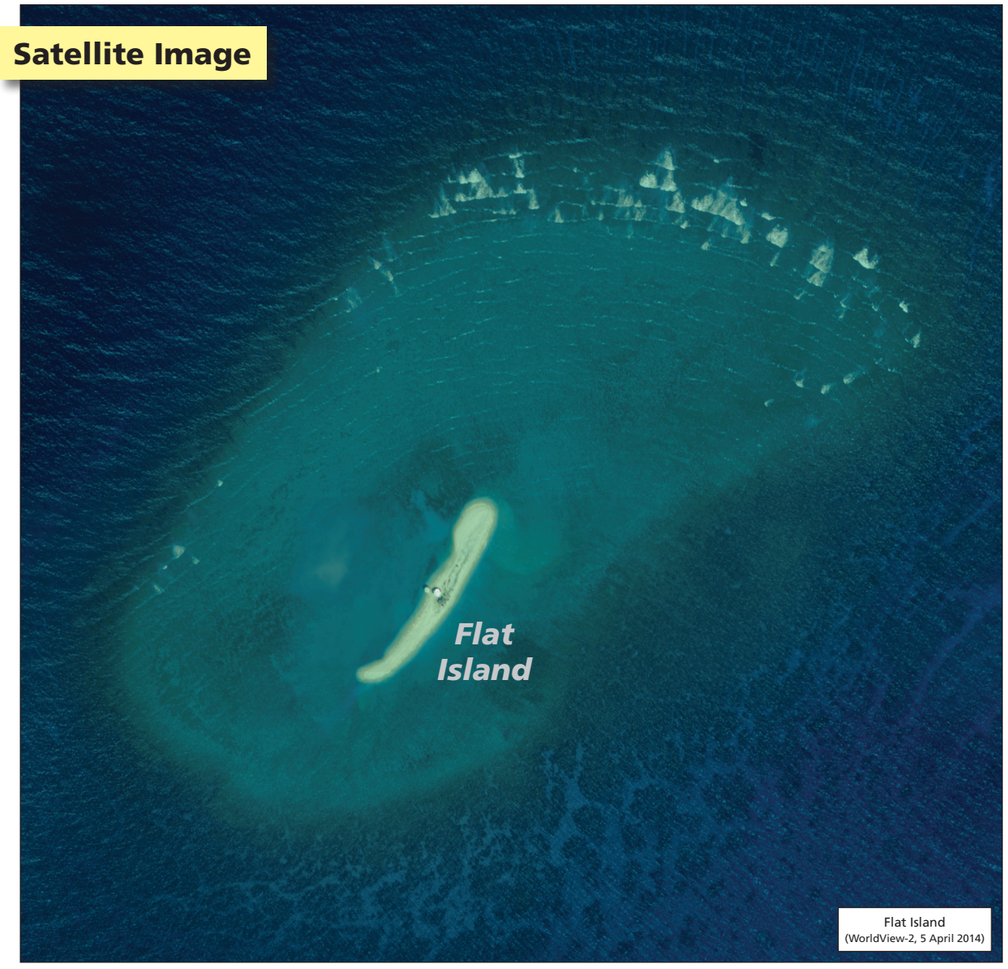
Also known as:

Chinese: Feixin Dao (费信岛)
Philippine: Patag Island

Coordinate Location: 10°49'30"N - 115°50'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 150.0 M
Distance to Hainan: 562.7 M
Claimed by: China, Philippines, Vietnam
Occupied by: Philippines



Satellite Image



Flat Island
(WorldView-2, 5 April 2014)

Buildings on Flat Island

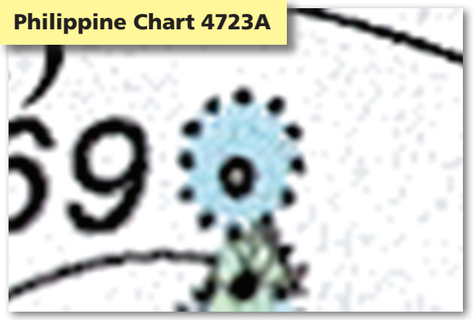
FLAT ISLAND

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

PATAG I is a low flat sandy cay from which a fringing reef extends 2 miles SE and NE. Its charted position (10°50.0' N, 115° 51.0' E) was reported off by 0.70 mile W when surveyed by Global Positioning System (GPS) in 1993. A shallow reef extends S from it to within 1 mile of Lawak Island A large bank of anchorage water with depths of about 20 meters extends 8 miles SE, although it has not been closely examined.

Philippine Chart 4723A

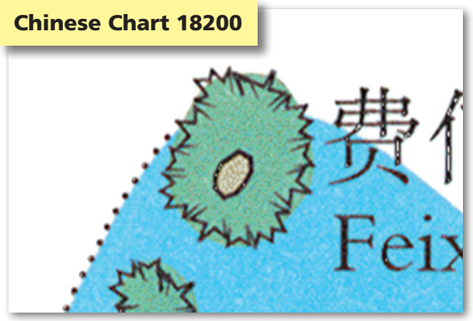


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Feixin Island - Located approximately 6 nautical miles north by east of Mahuan Island, it is a small sandbank that is slightly long and eggplant-shaped. It appears to be trending northeast-to-southwest, has a length of approximately 350 meters, has a width of approximately 221 meters, has a surface area of approximately 0.047 sq. km, and the island is 2.2 meters high. Based on what fishermen have said, this island is not suitable for people to live on. The island is surrounded on all sides by reef rock. No trees grow on the island, and the freshwater is not suitable for drinking. There is also a small island to the northeast of this island. 2 nautical miles northeast and southeast of the coral reef, the water depth is 45 meters, and ships can be anchored here.

Chinese Chart 18200



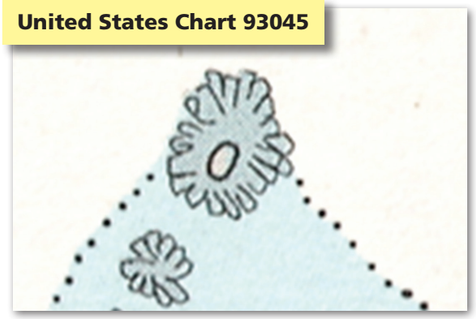
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC26

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Flat Island lies 5 miles N of Nanshan Island. It is a low, sandy islet with a fringing reef extending about 2 miles NE and SE from it.

A large bank, with reported but unconfirmed depths of 46m, extends 8 miles SE from Flat Island and Nanshan Island. Vessels engaged in fishing may be sighted on this bank.

United States Chart 93045



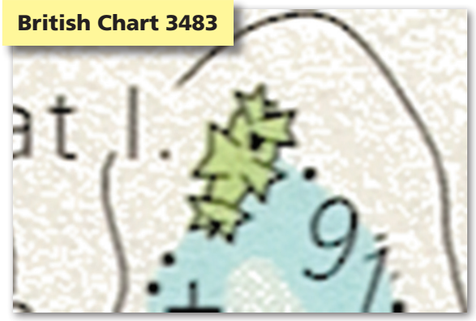
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC54

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Flat Island (10°49'·25N 115°49'·33E) is a low, flat, sandy cay, from which the fringing reef extends 2 miles SE and NE. A shallow reef extends S from it to within 1 mile of Nanshan Island, 5 miles S.

Anchorage. A large bank, with depths of 50 m, extends some 8 miles SE from the above two islands. It has not been closely examined, but may be suitable to anchor upon. There are shoal depths in places on the W edge of this bank, S of Nanshan Island.

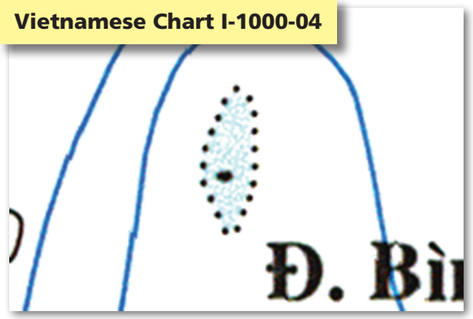
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

FLAT ISLAND
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61140

Original Map Scale 1:500,000
Complete chart reproduced as Annex NC41

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Flat Island is approximately 350 metres long and 221 metres wide. The location was reported to be off by 0.70 M when surveyed by Global Positioning System (GPS) in 1993. It is a low, sandy island about 2.2 metres high, with a fringing reef that extends 2 M to the southeast and northeast. No trees grow on the island and, according to the Chinese sailing direction, the water found there is not suitable for drinking. All the nautical charts show the island as being surrounded by a drying reef. Several very basic buildings can be seen in satellite imagery and photographs.

Historical and Anthropological Information

Sailing directions reflect the dangers posed to navigators by Flat Island.[1] In 1806, for example, the *Alexander* reportedly struck Flat Island "and was nearly lost".[2]

A 1938 report from Britain's *H.M.S. Herald* concluded that Flat Island was not "suitable as [a] landing ground[] for airplanes", and that such grounds could not even be constructed "with an enormous expenditure of material and labour". It also described the feature as "[a] bare sand cay with much broken coral", that "[s]hows signs of having been larger and is possibly being gradually washed away".[3] It noted that Flat Island housed "a wooden post with defaced characters".[4] Flat Island was annexed by Japan in 1939.[5]

Philippine forces landed on the feature in 1977,[6] at which time it was unoccupied. It is reported that Flat Island "lacks vegetation and is subject to erosion",[7] and that the feature "changes its shape seasonally as a result of the shifting sand brought about by the waves and wind direction".[8]

Flat Island does not have potable fresh water.[9] According to media reports in 2011, the Philippine Navy had nearly completed construction of a "shell-like structure" that was "intended to shelter and protect troops guarding" Flat Island "from inclement weather".[10]

The Status of the Feature under UNCLOS

Flat Island is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. This sandy feature, surrounded by a drying reef, has an area of only 0.047 km^2 according to the Chinese sailing directions. There is no potable water,[11] and it lacks vegetation. The feature is subject to erosion,[12] and is reported to "change[] its shape seasonally as a result of the shifting sand brought about by the waves and wind direction".[13] There is no record of human settlement on the feature before it was occupied by the Philippines military in June 1977.[14] The Chinese Sailing directions state that "[b]ased on what fishermen have said, this island is not suitable for people to live on", and that the water "is not suitable for drinking".[15] The seven military personnel stationed there[16] are dependent upon supply from the outside. There is no economic activity on the feature.

References

[1] *See* John Purdy, *The Oriental Navigator: Directions for Sailing to, from, and upon the coasts of, the East-Indies, China, Australia, &c.* (3rd ed., 1816), p. 116. SWSP, Vol. IV, Annex 386. ("Captain Horsburgh gives the longitude of Flat Island as about 117 º 25' E., and he observes that great care is requisite when passing hereabout in the night, for several ships have nearly grounded upon Flat Island before it was perceived".).

[2] *Id*.

[3] W.C. Jenk., H.M.S. Herald, United Kingdom, *Report on Suitability of Islands in China Sea for Landing Grounds* (18 Apr. 1938), p. 1. SWSP, Vol. III, Annex 374.

[4] *Id*., p. 2.

[5] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[6] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015). SWSP, Vol. III, Annex 349.

[7] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 26. MP, Vol. VIII, Annex 256.

[8] Republic of the Philippines, Municipality of Kalayaan, *Brochure: Municipality of Kalayaan, Palawan, Philippines*, p. 2. SWSP, Vol. III, Annex 346.

[9] Gregory B. Poling, "Arguing Over Blocks: Do China and the Philippines both Have a Claim?", *Center for Strategic and International Studies* (16 Apr. 2012), p. 3. SWSP, Vol. V, Annex 456.

[10] Jaime Laude, "Navy Seabeas constructing 'starshell' on Patag Island", *The Philippine Star* (31 July 2011). SWSP, Vol. IV, Annex 422.

[11] Gregory B. Poling, "Arguing Over Blocks: Do China and the Philippines both Have a Claim?", *Center for Strategic and International Studies* (16 Apr. 2012), pp. 2-3. SWSP, Vol. V, Annex 456.

[12] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 26. MP, Vol. VIII, Annex 256.

[13] Republic of the Philippines, Municipality of Kalayaan, *Brochure: Municipality of Kalayaan, Palawan, Philippines*, p. 2. SWSP, Vol. III, Annex 346.

[14] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

[15] Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea (A103)* (2011), p. 18. MP, Vol. VII, Annex 232.

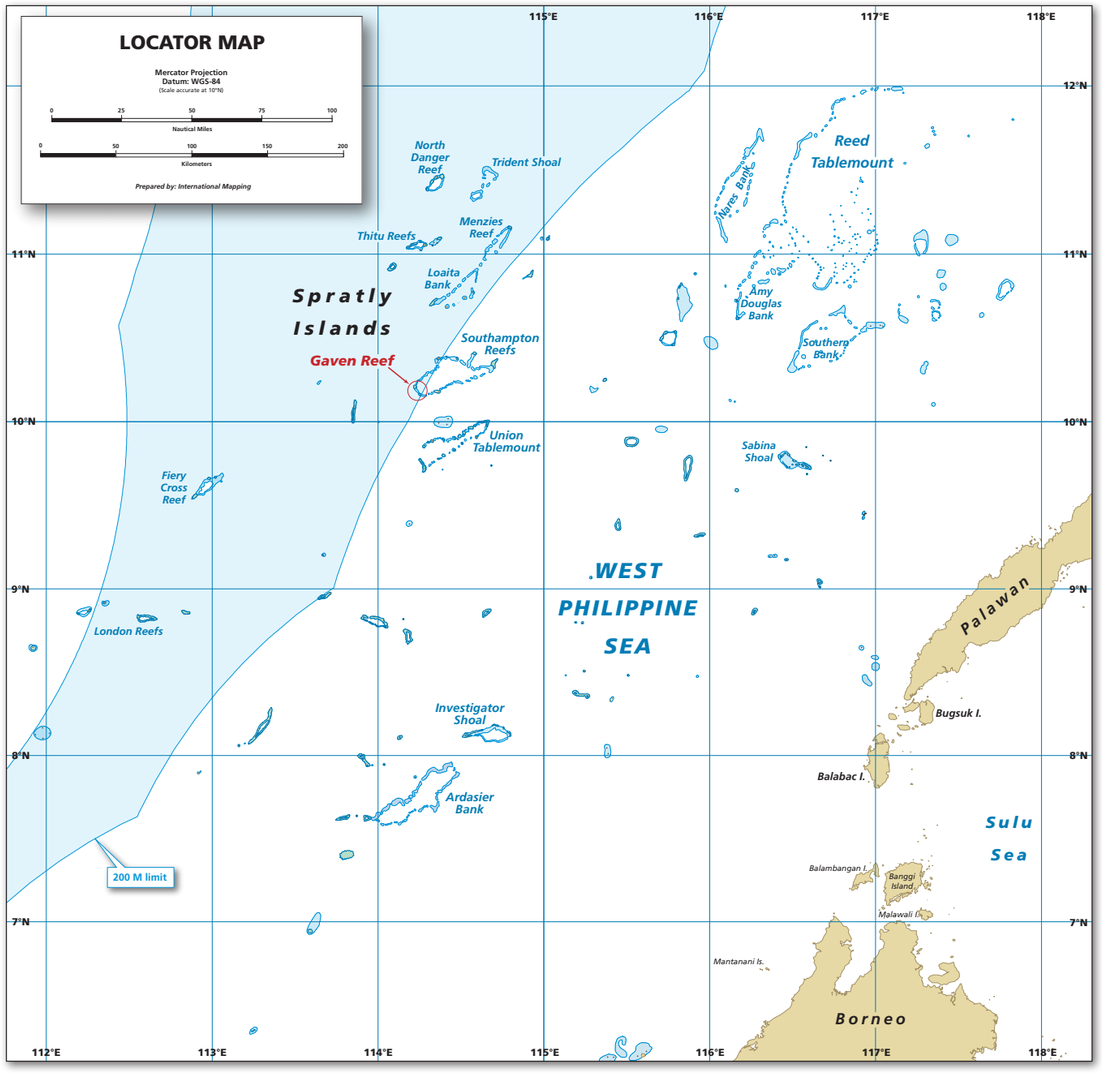
[16] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

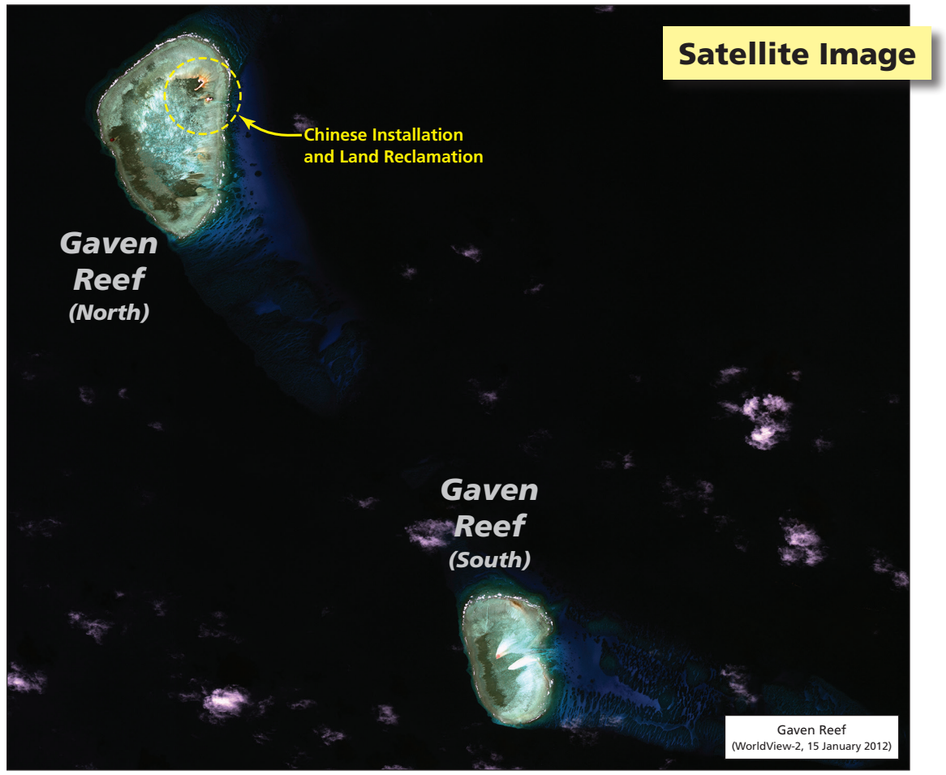
GAVEN REEF

Also known as:

Chinese: Nanxun Jiao (南薰礁)
Philippine: Burgos

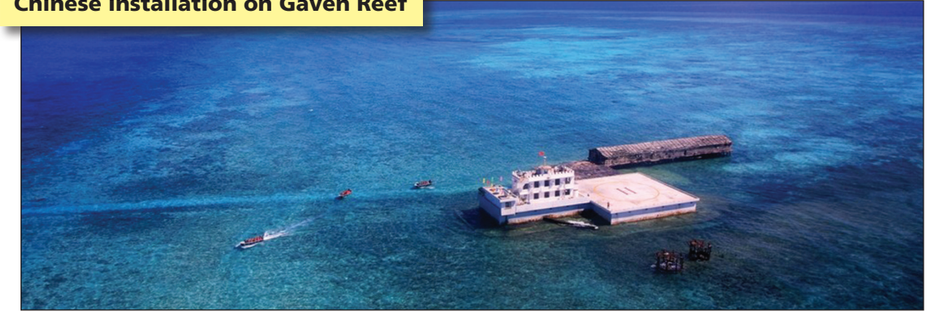
Coordinate Location: 10°12'30"N - 114°13'00"E
Nearest High Tide Feature: Namyit Island, 6.3 M
Distance to Palawan: 200.1 M
Distance to Hainan: 544.1 M
Claimed by: China, Philippines, Vietnam
Occupied by: China





Aerial view of Gaven Reef

Chinese installation on Gaven Reef



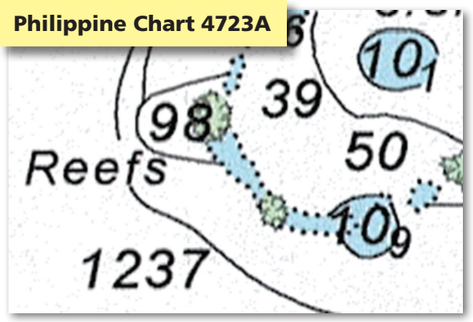
GAVEN REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

GAVEN REEFS (10˚ 12' N, 114˚ 13' E) two in number 2.5 miles apart in a NW direction, form the SW end of Tizard Bank. The SE reef lies 6.2 miles W of Binago Island. Gaven Reefs cover at HW; coral heads lie between them, with a depth of 6.4 meters (21 ft), 0.7 mile NW of the SE reef. Anchorage for shallow draught vessels can be obtained in fine weather almost any where [*sic*] on the banks surrounding the lagoon, but caution should be exercised. Fisherman [*sic*] usually visit the islands in December and January and leave at the start of the SW monsoon.

Philippine Chart 4723A

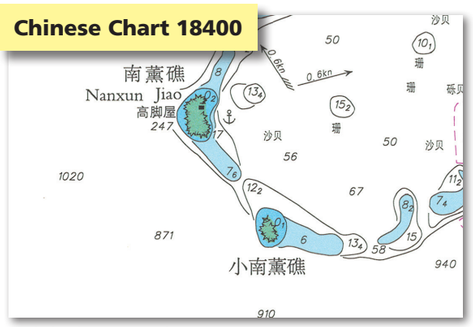


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Nanxun Reef - Located at the southwest end of the Zhenghe reef group, it is comprised of the north and south coral reefs. It appears to be trending from northwest-to-southeast. There is a reef in the southeast direction that is located approximately six nautical miles west of Hongma Island. During high tide, these reef rocks are all submerged by seawater.

Chinese Chart 18400

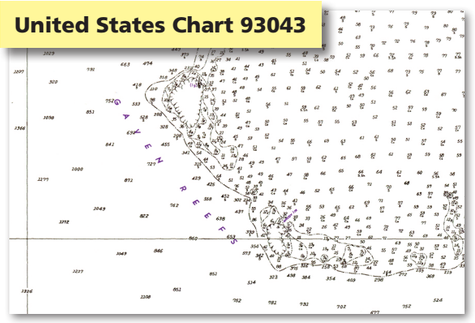


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

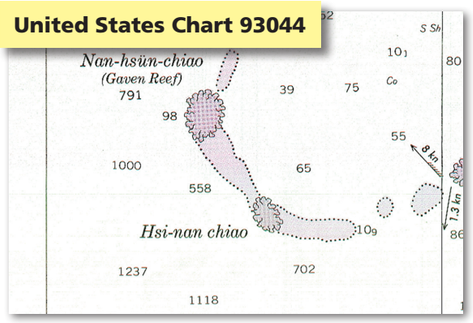
Gaven Reefs (10°12'N., 114°13'E.) is comprised of two reefs which cover at HW and lie 7 miles W and 8.5 miles WNW, respectively, of Namyit Island. They are the SW dangers of Tizard Bank. The N of the two reefs is marked by a white sand dune about 2m high.

United States Chart 93043



Original Map Scale 1:75,000
Complete chart reproduced as Annex NC51

United States Chart 93044

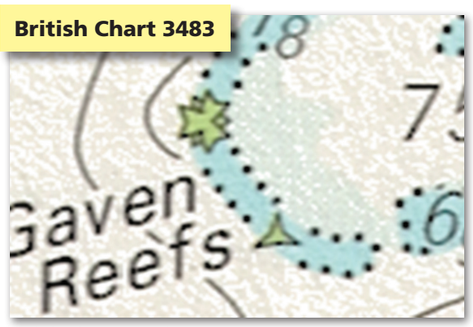


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Not included.

British Chart 3483



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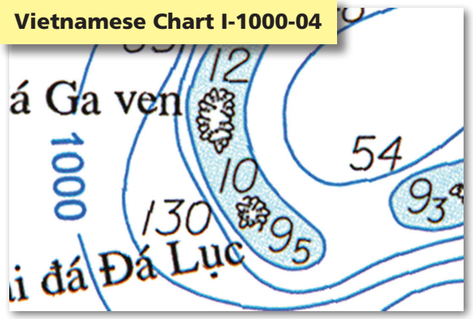
Complete chart reproduced as Annex NC1

GAVEN REEF

Additional Charts

Vietnamese Chart I-1000-04



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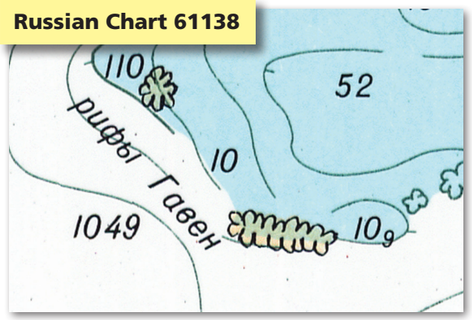
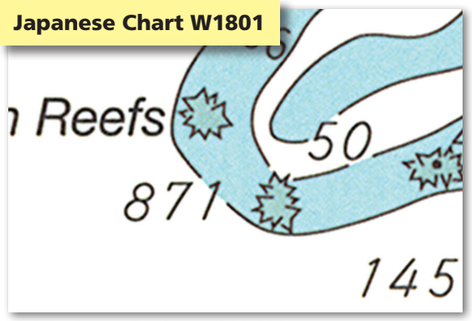
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Gaven Reef is comprised of two drying reefs, about 2 M apart, that are situated in the southwest corner of Tizard Bank. The reefs are submerged at high water. Satellite imagery shows that a man-made structure has been built in the central part of the reef with the foundation built in the shallow lagoon.

The Status of the Feature under UNCLOS

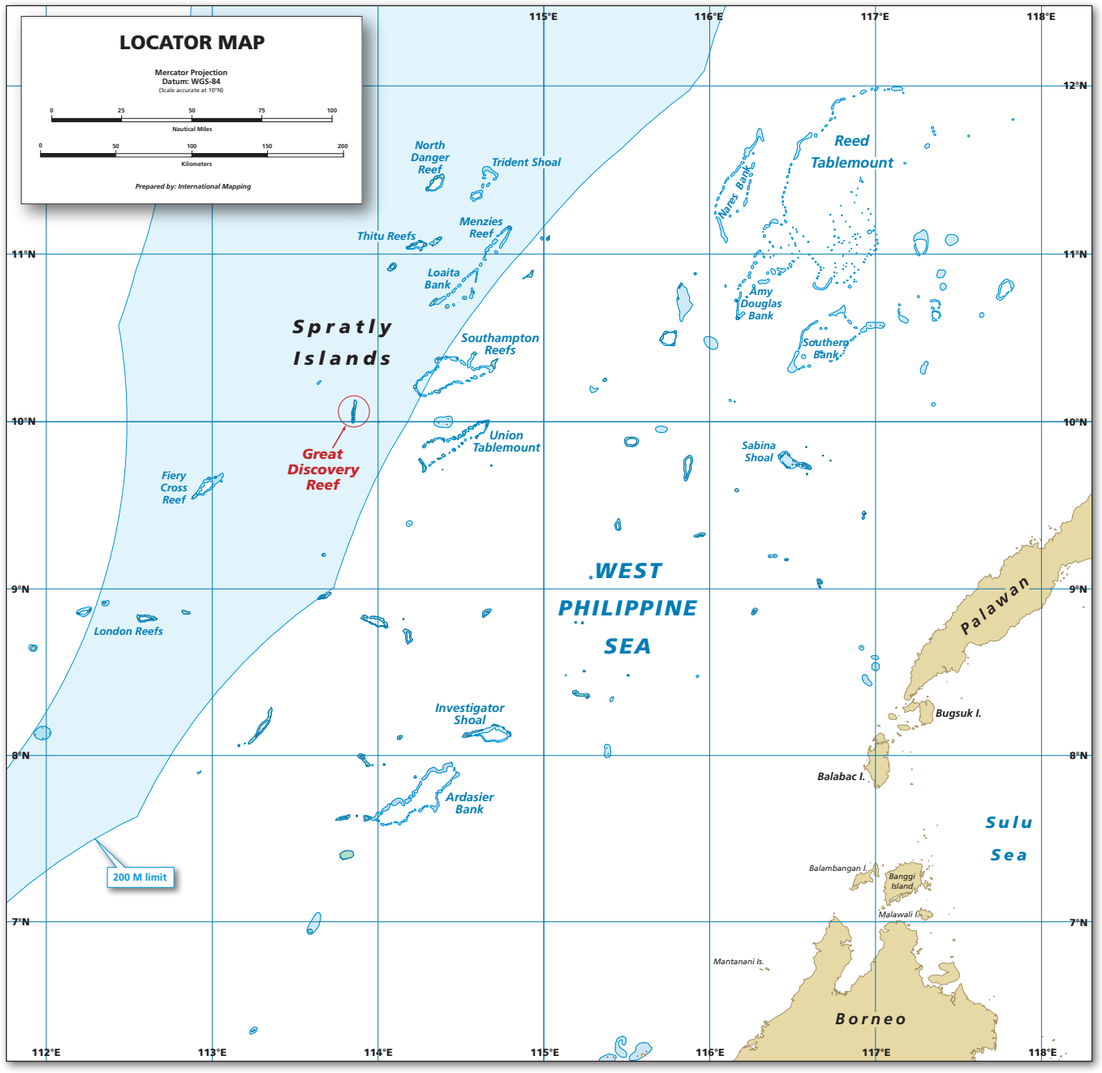
Gaven Reef is a low-tide elevation under Article 13, because it dries at low tide and is submerged at high tide. This is detailed in paragraphs 5.70-5.72 of the Memorial, and shown in the following charts: Philippine Chart 4723A, Chinese Chart 18400, U.S. Charts 93043 and 93044, British Chart 3483, Vietnamese Chart I-1000-04, Russian Chart 61138, and Japanese Chart W1801. Gaven Reef is within 200.1 M of Palawan, and is 6.3 M from the nearest high-tide feature (Namyit).

GREAT DISCOVERY REEF

Also known as:

Chinese: Daxian Jiao (大现礁)
Philippine: Paredes Reef

Coordinate Location: 10°04'00"N - 113°51'00"E
Nearest High Tide Feature: Sin Cowe Island, 28.7 M
Distance to Palawan: 217.7 M
Distance to Hainan: 539.0 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Structure on Great Discovery Reef

Structures on Great Discovery Reef

Structure on Great Discovery Reef

As seen from the sea

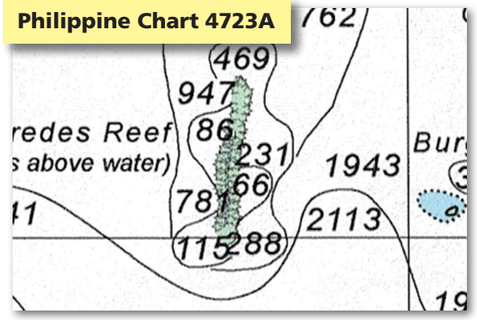
GREAT DISCOVERY REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

PAREDES REEF lies with its S end (10° 01' N, 113° 52' E) 9 miles W of Discovery Small Reef. Most of the reef dries and there are several above-water rocks. There is a lagoon in the center, which appears to have no entrance. The reef is steep-to.

Philippine Chart 4723A

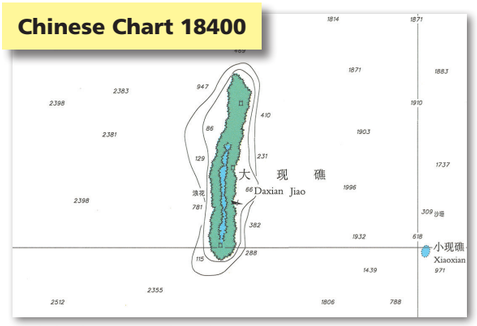


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Daxian Reef - Located approximately 45 nautical miles east-northeast of the Yongshu Reef, most of this reef is exposed on the surface of the sea. In the center there is a lagoon, but there is no waterway or entry point. All the reef rocks are very steep.

Chinese Chart 18400

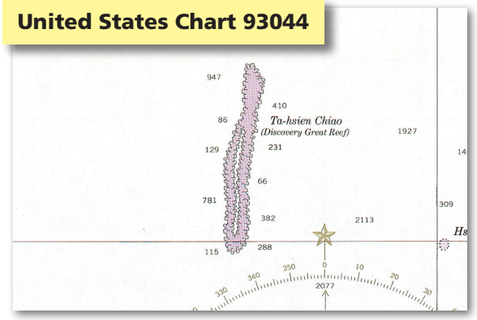


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Discovery Great Reef (10°01'N., 113°52'E.) is a long, narrow atoll that lies with its N end about 18 miles SE of Western Reef. The reef rim has several drying rocks on it of which one, called Beacon Rock, stands on its S end. There is no apparent entrance into the lagoon. This atoll is reported to be visible at a distance of 9.5 miles from a height of 21m.

United States Chart 93044

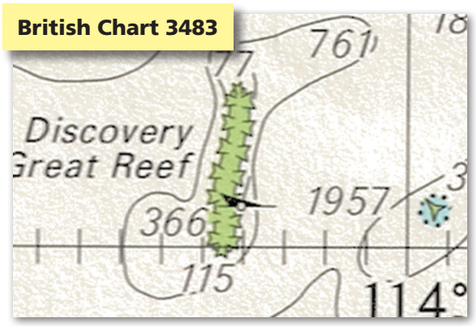


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Discovery Great Reef (10°03'·44N 113°51'·15E) is steep-to. Most of the reef dries, and there are several above-water rocks on it. A stranded wreck lies in the E side of the reef. There is a lagoon in the centre, with no apparent entrance.

British Chart 3483

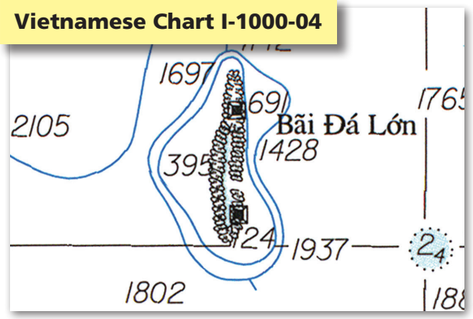


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

GREAT DISCOVERY REEF

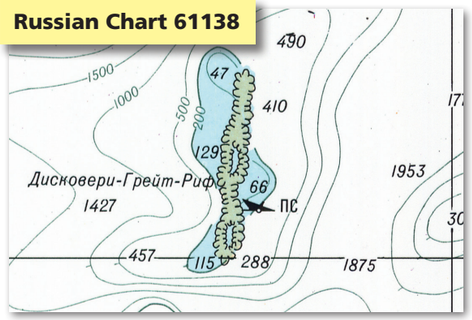
Additional Charts

Vietnamese Chart I-1000-04



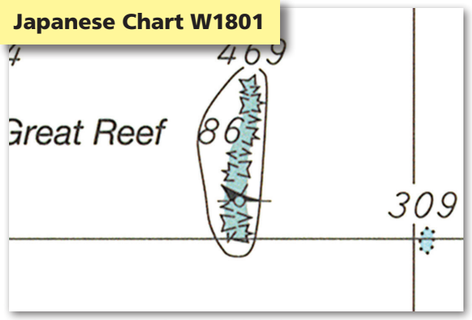
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Great Discovery Reef is a long narrow atoll which has a number of rocks that dry at low tide. There is no entrance leading to the lagoon. The Vietnamese nautical charts depict two undefined black squares along the northeast and southeast fringe of the reef; these likely indicate the location of man-made structures. The U.S., British, Philippine, Chinese, and Japanese charts show only a drying reef. Two of the sailing directions (Philippine and British) mention "several above water rocks", which could suggest that these rocks are above water at all times, but their charts do not reflect this assertion. The U.S. sailing directions note the existence of "several drying rocks." As seen on satellite imagery and photographs, the man-made structures and a concrete bridge that connects two of the installations were built either on top of low-tide features or in shallow water.

Historical and Anthropological Information

Great Discovery Reef[1] was reported by the British ship Hardwicke in 1744, and again by the Dolphin in 1767. It was surveyed by the British in 1814, and re-surveyed by the H.M.S. Rifleman in 1867.[2] Sailing Directions published in 1816 note that fishing boats from Hainan could be seen at Great Discovery Reef from January through May.[3]

According to an internal British report, Great Discovery Reef and several other features were claimed by France in the early 1930s.[4] The British Admiralty rejected the claim in February 1933, concluding it had "no basis in international law and calls for a strong protest without any further delay".[5] In opposing France's claim, the Admiralty observed that "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[6]

The Official Journal of the French Republic claiming certain islands in July 1933 does not mention the feature by name.[7]

The Philippines has been unable to find any other historical or anthropological references to Great Discovery Reef before 1988, when it was occupied by Vietnam.[8] In March 1995, "Vietnam reported that Taiwanese forces on Itu Aba… [had] shelled one of its cargo ships, which [had been] sailing from [Great Discovery Reef] to Sand Cay".[9]

According to Philippine media reports, facilities at Great Discovery Reef "seem to follow a standard pattern of construction" among Vietnamese-occupied reefs. This reportedly includes such structures as "a golden-painted three-storey concrete building with built-in light house on top, gun emplacements on both sides, [a] T-type pier, solar panels, parabolic disc antennas, and garden plots".[10]

The Status of the Feature under UNCLOS

Great Discovery Reef is a low-tide elevation under Article 13. It is submerged at high tide, with a number of rocks that dry at low tide. The feature is depicted as a drying reef on the U.S., British, Philippines, Chinese, and Japanese charts. It is 217.7 M from Palawan, and 28.7 M from the nearest high-tide feature, Sin Cowe Island.

GREAT DISCOVERY REEF

References

[1] This feature is sometimes referred to as Discovery Great Reef.

[2] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom (23 Feb. 1933), p. 5. SWSP, Vol. III, Annex 364.

[3] John Purdy, *The Oriental Navigator: Directions for Sailing to, from, and upon the coasts of, the East-Indies, China, Australia, &c.* (3rd ed., 1816), p. 145. SWSP, Vol. IV, Annex 386.

[4] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), para. 11. SWSP, Vol. III, Annex 363.

[5] *Id*.

[6] *Id*., para. 12.

[7] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[8] Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

[9] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 3. SWSP, Vol. V, Annex 445.

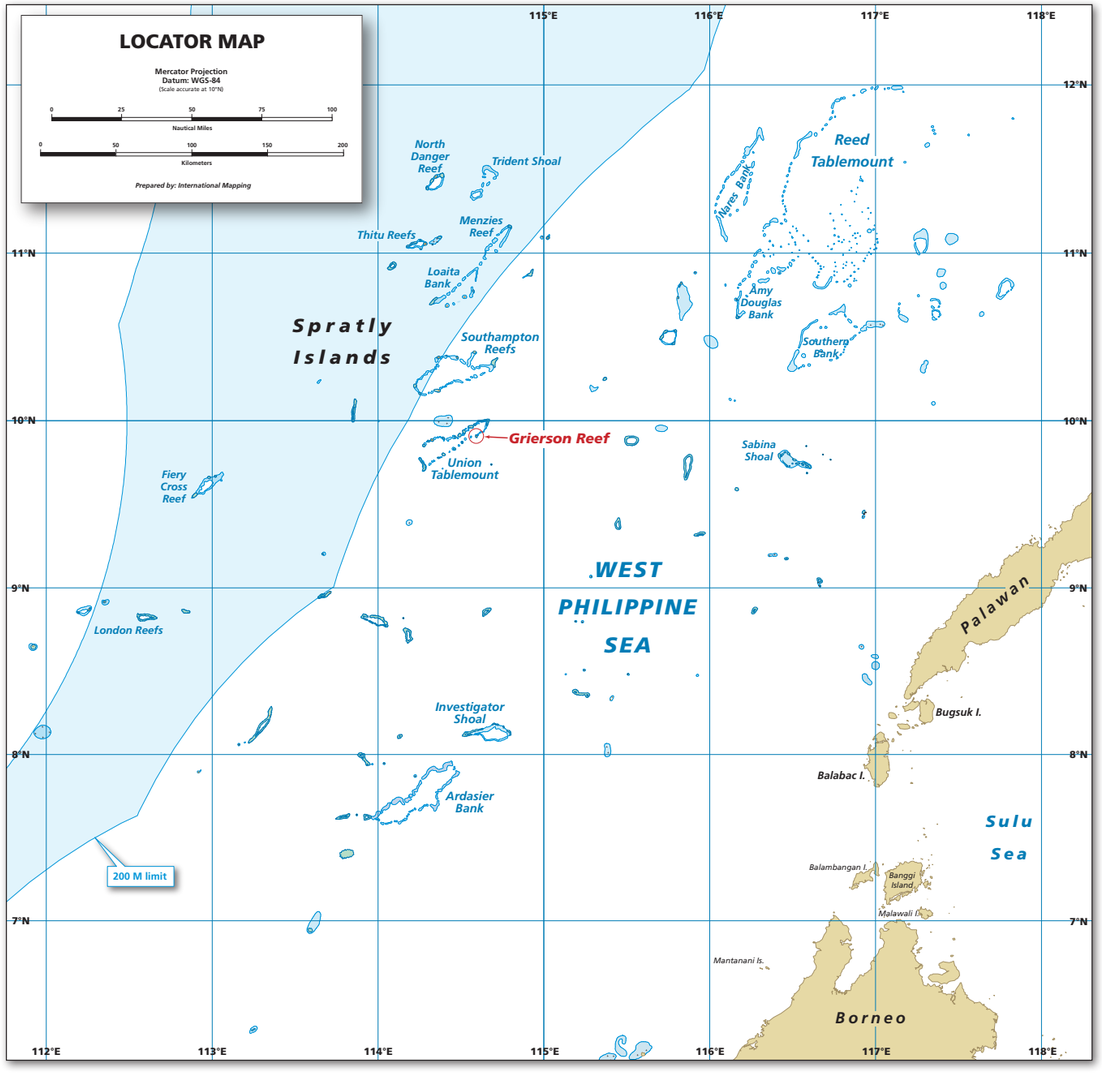
[10] Rommel C. Banlaoi, "Clash of sovereignties in the Spratlys", *The Philippine Star* (30 June 2011). SWSP, Vol. IV, Annex 420.

GRIERSON REEF (SIN COWE EAST ISLAND)

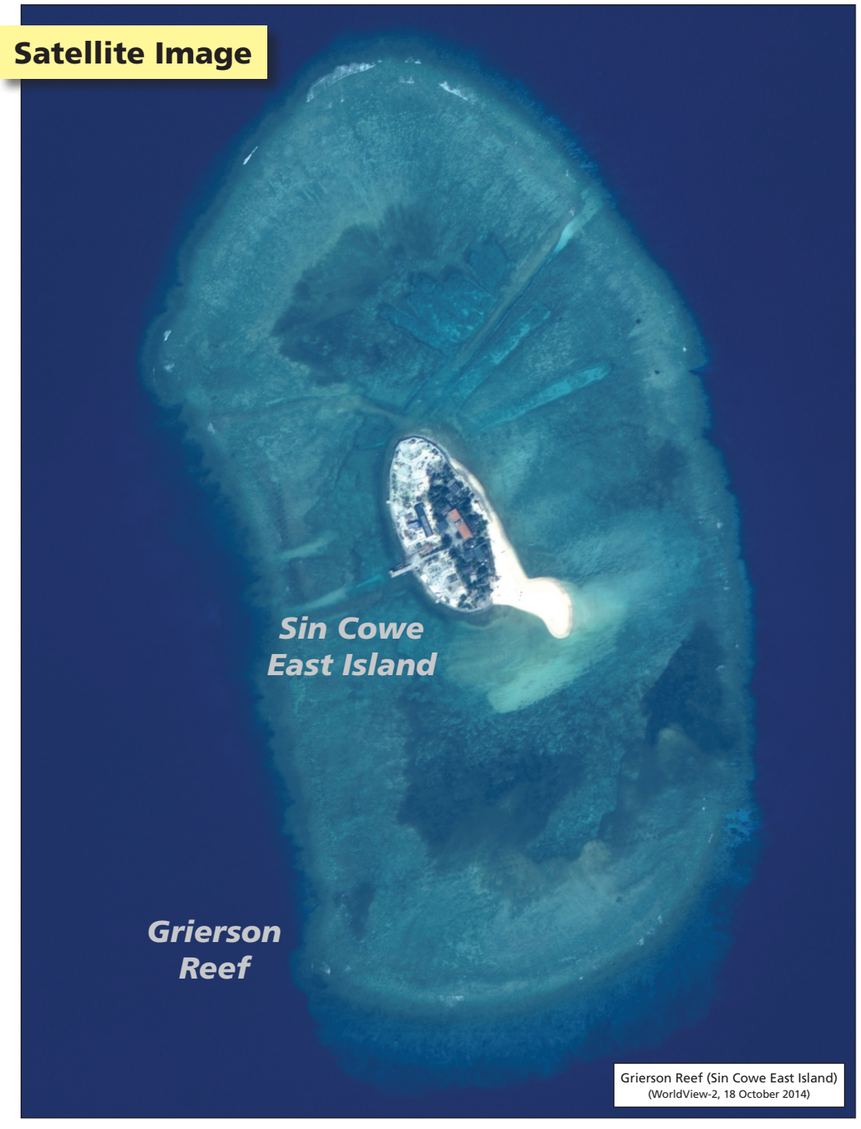
Also known as:

Chinese: Ranqing Shazhou (染青沙洲)
Philippine: Julian Felipe

Coordinate Location: 09°53'00"N - 114°35'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 176.9 5M
Distance to Hainan: 70.1 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Satellite Image



Grierson Reef (Sin Cowe East Island)
(WorldView-2, 18 October 2014)

Grierson Reef (Sin Cowe East Island)

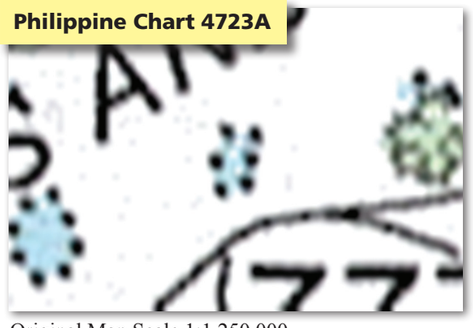
GRIERSON REEF (SIN COWE EAST ISLAND)

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

Philippine Chart 4723A

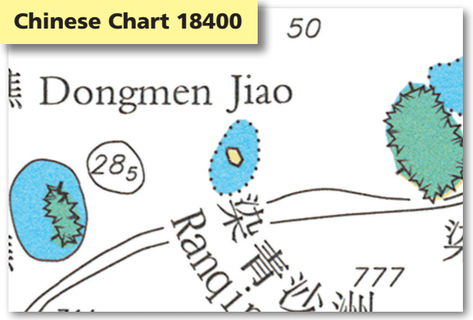


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

[In relation to] Jiuzhang reef group includes in total 20 individual reef flats. Among these, there are 2 islands (Jinghong Island, Ranqing Sandbank), and 18 reefs. In clockwise order starting from the western end of the reefs, they are Chigua Reef, Guihan Reef, Hua Reef, Jiyang Reef, Jinghong Reef, Nanmen Reef, Ximen Reef, Dongmen Reef, Anle Reef, Changxian Reef, Zhuquan Reef, Niu'e Reef, Ranqingdong Reef, Ranqing Sandbank, Longxia Reef, Bianshen Reef, Jiuzhang Unnamed Reef (to be named), Zhangxi Reef, Quyuan Reef, and Qiong Reef.

Chinese Chart 18400



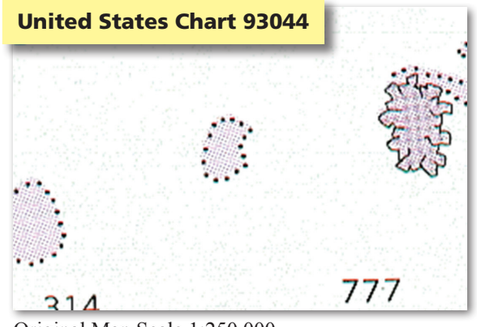
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Grierson Reef, a small cay lying 5 miles SW of Whitsun Reef, is formed by sandy beaches with two black above-water rocks to the S.

The W lagoon is accessible only to small boats and has depths of 5.5 to 14.6m interspersed with coral shoal heads.

United States Chart 93044

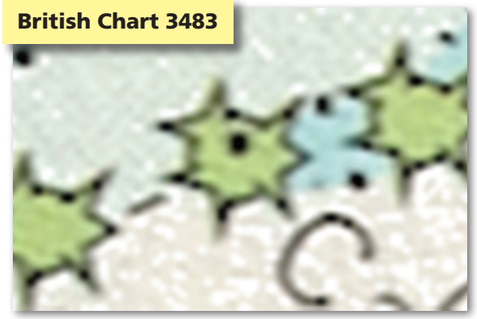


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Not included.

British Chart 3483

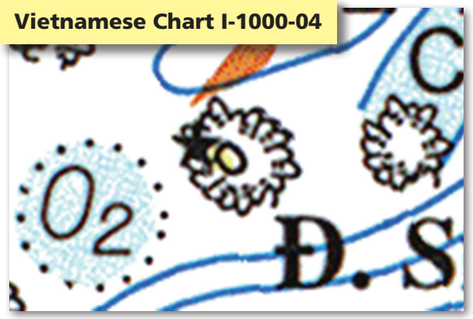


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

GRIERSON REEF (SIN COWE EAST ISLAND)

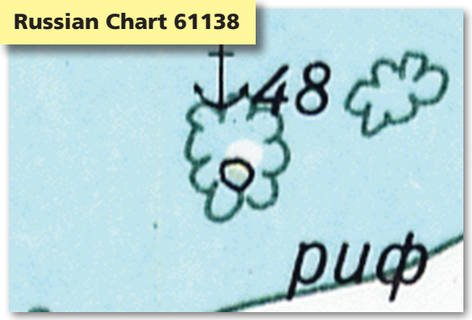
Additional Charts

Vietnamese Chart I-1000-04



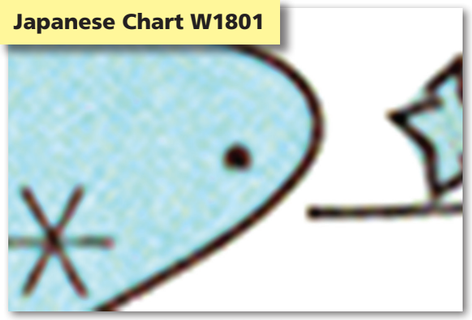
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



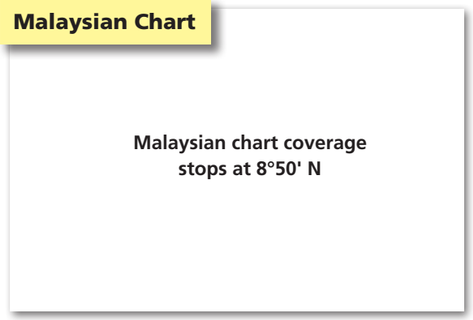
Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart



Geographic/Hydrographic Observations by Dr. Robert Smith

Grierson Reef is 5 M southwest of Whitsun Reef. The Chinese sailing directions appear to refer to Grierson reef as an "island". The U.S. sailing directions state that the cay "is formed by sandy beaches with two black above water rocks to the S". The Japanese, Russian, Vietnamese, and UK nautical charts show a feature above water at high tide. The satellite imagery and the photographs show the man-made structures that have been built on the reef.

Historical and Anthropological Information

Union Bank and Reefs, of which Grierson Reef[1] forms a part:

> were surveyed by HM surveying ship *Herald* in April and May 1931 and all names of features are derived from names of surveying officers aboard *Herald* … or the church calendar. The *Herald* survey of Union Bank and Reefs has never been published by the Hydrographer of the Navy.[2]

The *Herald*'s survey was conducted "to investigate probable areas for seaplane operations in time of war".[3] Japanese hydrographers also subsequently made "sketch" surveys of several features, including Union Bank, during 1936 and 1937.[4]

Grierson Reef, which reportedly "supports a small sandy cay and some large black boulders",[5] was occupied by Vietnam in 1978.[6] Its climate has been described as "harsh", and structures have been built to help the island withstand strong winds and waves".[7] As "a coral island", it is "difficult to grow vegetables due to lack of soil and fresh water".[8]

The Status of the Feature under UNCLOS

Grierson Reef is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. This tiny feature is formed by sandy beaches with two rocks above water at high water. There is no record of any human habitation at Grierson Reef prior to its occupation by the Vietnamese military in 1978.[9] They are there only to preserve Vietnam's sovereignty claim, not to generate an indigenous population. Its climate has been described as "harsh", and structures have been built "to help the island withstand strong winds and waves".[10] They are dependent on supplies from outside.

GRIERSON REEF (SIN COWE EAST ISLAND)

References

[1] Grierson Reef is also known as Sin Cowe East Island.

[2] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 10 n.1. MP, Vol. VIII, Annex 256.

[3] *Id*., p. 37.

[4] *Id*., pp. 37-38.

[5] *Id*., p. 11.

[6] Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 46. SWSP, Vol. V, Annex 450.

[7] "Sinh Ton dong Island - Vietnam's watchtower", *Voice of Vietnam* (11 July 2013). SWSP, Vol. IV, Annex 429.

[8] *Id*.

[9] Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 46. SWSP, Vol. V, Annex 450.

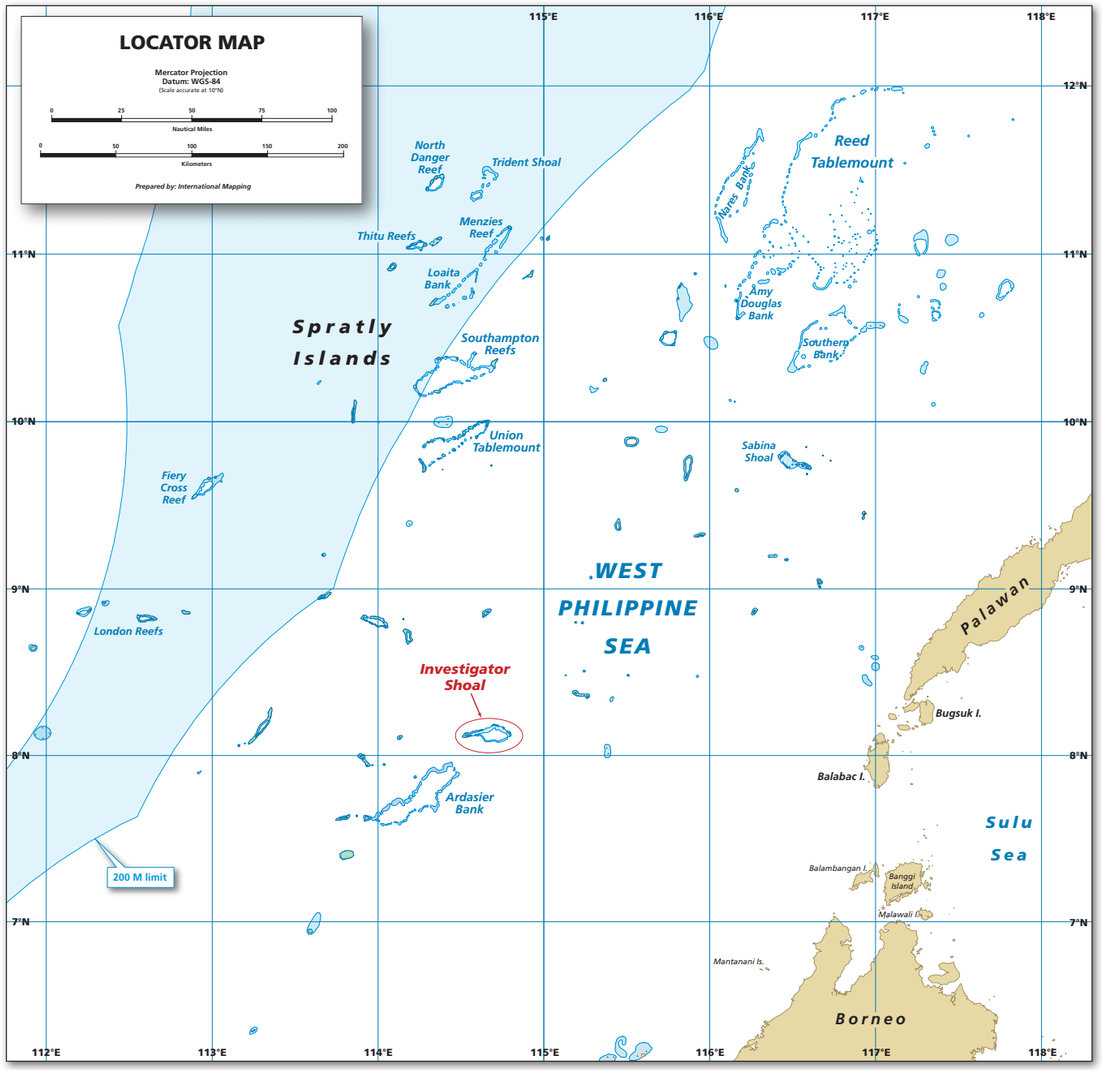
[10] "Sinh Ton dong Island - Vietnam's watchtower", *Voice of Vietnam* (11 July 2013), pp. 1-2. SWSP, Vol. IV, Annex 429.

INVESTIGATOR SHOAL

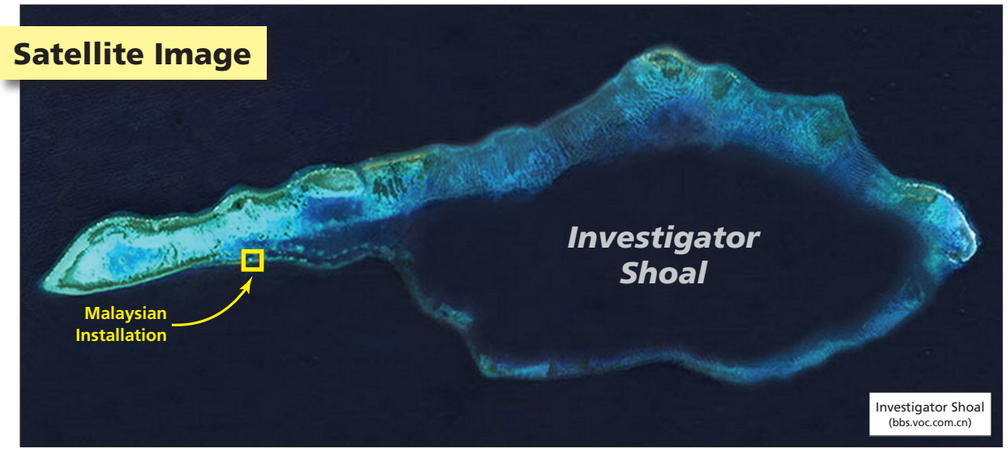
Also known as:

Chinese: Yuya Ansha (榆亚暗沙)
Philippine: Pawikan

Coordinate Location: 08°08'00"N - 114°42'00"E
Nearest High Tide Feature: Commodore Reef, 29.3 M
Distance to Palawan: 126.7 M
Distance to Hainan: 663.7 M
Claimed by: China, Malaysia, Philippines
Occupied by: Malaysia



Satellite Image



Enlargement of occupied area of Investigator Shoal

Malaysian installation seen from the sea

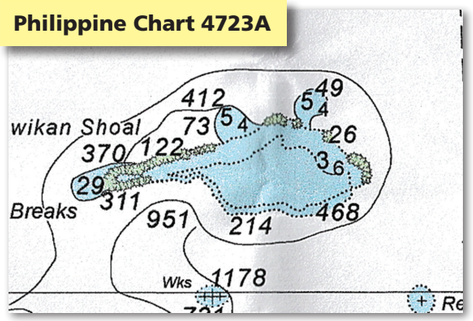
INVESTIGATOR SHOAL

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

INVESTIGATOR SHOAL lies with its W extremity (8°07' N, 114° 29' E) 21 miles E of Erica Reef. The irregular atoll formation surrounded entirely by coral reef, it extends 18 miles E and dries in places but mainly has depths of between 5.5 meters and 18.3 meters (18 to 60 ft). Some rocks are visible at high water at the W end. There appears to have good entrance at the SE end with a depth of 37 meters (20 fms). The lagoon formation has depths of probably more than 46 meters (25 fms) and may offer good anchorage in fine weather.

Philippine Chart 4723A

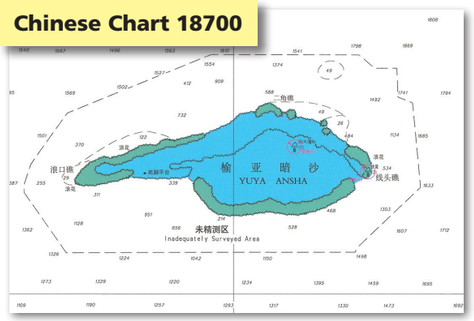


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Yuya Submerged Shoal - Located approximately 48 nautical miles east by north of Nanhai Reef, it is a continuous coral atoll. The length from east to west is approximately 20 nautical miles. The widest part from north to south is approximately 10 nautical miles. There are many coral reef rocks on the atoll, a small portion of them are exposed, and the majority are 5.5 meters ~ 18.3 meters below water. There is a lagoon in the center part with a water depth of approximately 45 meters. When the weather is good, large fishing vessels can enter the middle part of the lagoon from the north side and moor; there is no place to take shelter from wind. On the east side of the atoll is Xiantou Reef, and there are breaking waves. On the north side is Erjiao Reef. On the west side is Langkou Reef. This reef is a coral reef that is trending toward east and west and is long and narrow. There are many solitary reef rocks on top of it. 370 nautical miles from the west side of Langkou Reef, there is an anchoring ground with a 45-meter water depth.

Chinese Chart 18700



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

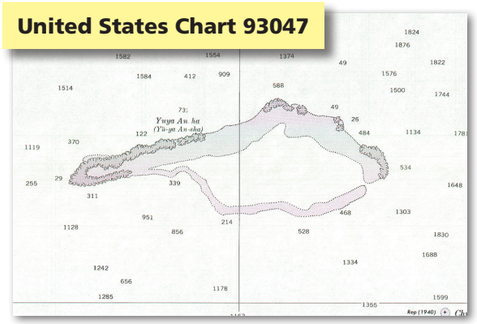
3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Investigator Shoal (8°10'N., 114°40'E.), an irregular atoll formation, lies with its E extremity about 25 miles SW of the W end of Commodore Reef. The shoal, which extends in an E-W direction for 18 miles with a width of 8 miles, is surrounded by a coral reef on which there are a few drying sections, but over the larger part of which there are depths of 5.5 to 18.3m.

Large fishing vessels enter the lagoon in fine weather through a channel near the middle of the N side of the reef to anchor in depths probably over 46m, although little or no shelter is provided by the atoll.

The S side of the reef is steep-to with an apparent entrance at its SE end that is 0.2 mile wide and 37m deep, except for two patches with a depth of 11m. The W end of the reef breaks and has a few isolated rocks which may be visible at HW. There are two drying rocks on the S side of the shoal.

United States Chart 93047



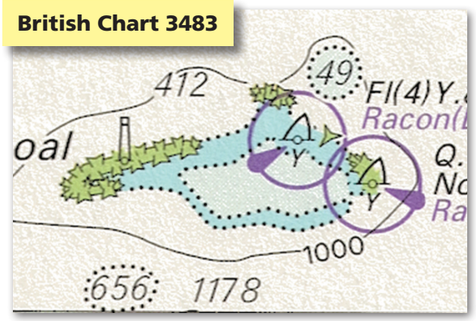
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Investigator Shoal (8°08'·00N 114°42'·00E) extends 18 miles from W to E, and is an irregular atoll formation entirely surrounded by a coral reef. The surrounding reef dries in places, but for the main part has depths of 5 to 15 m. A few rocks may be visible at the W end at HW. The lagoon probably has depths of more than 50 m.

A tower (8°07'·88N 114°34'·01E) is located 4 miles from the W end of the reef. Light buoys (special), fitted with racons, are moored 10 miles ENE and 14 miles E of the tower (see 2.86).

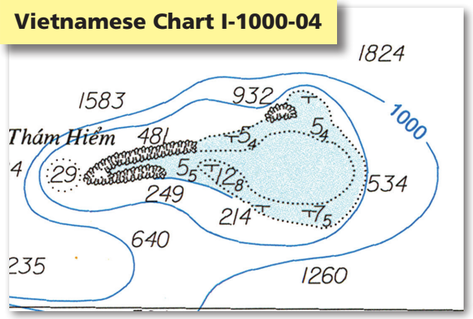
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

INVESTIGATOR SHOAL
Additional Charts

Vietnamese Chart I-1000-04



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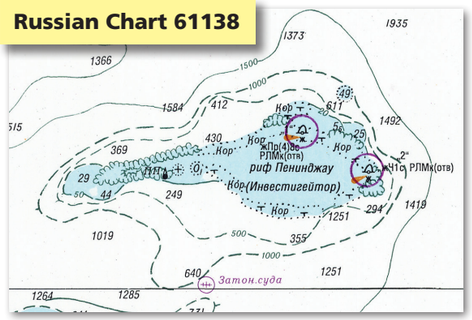
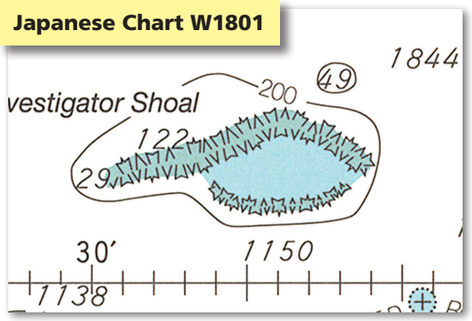
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



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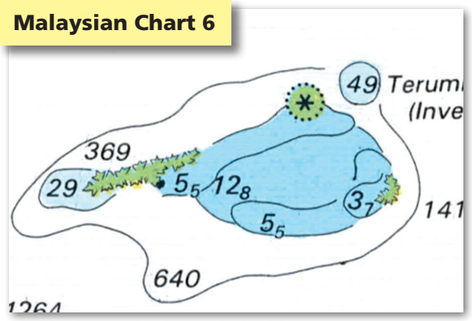
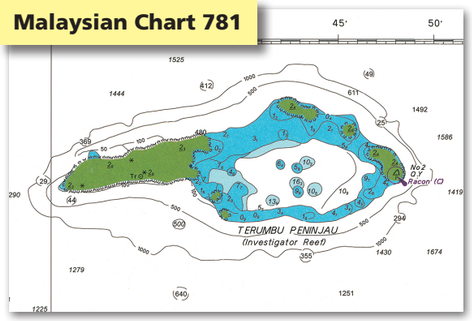
Complete chart reproduced as Annex NC11

Malaysian Chart 6



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Malaysian Chart 781



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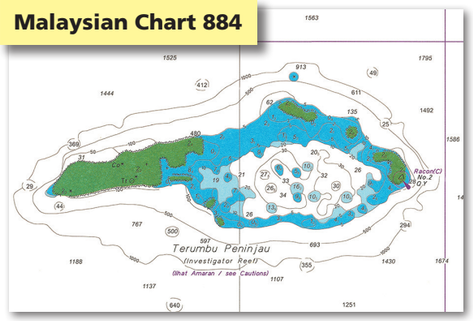
Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Investigator Shoal extends in an east-west direction for approximately 18 M, and has a width of approximately 8 M. The formation is surrounded by a coral reef that dries in places. The Philippine, British, and US sailing directions state that some rocks may be visible at high water at the west end of the reef. The satellite imagery shows a white edge along the west end of the reef which represents waves crashing against the reef. It is likely that these rocks, which are just at tidal datum, are seen through these waves at high water. No nautical charts show any feature that is above water at high tide. The Russian and Malaysian nautical charts show a dot in the southwestern part of the reef. This likely represents a man-made structure that is barely visible in the satellite imagery, but which can be seen more clearly in the photograph.

Historical and Anthropological Information

In 1836, British hydrographer James Horsburgh reported that "Investigator's Shoal, examined by the Company's surveying ship of this name, in 1813, appears to be one of the N. Easternmost, and most extensive of the last-mentioned dangers".[1] The feature was described in *The China Sea Directory* as follows:

> Investigator Shoal, examined by Captain Crawford of the Indian Navy surveying ship *Investigator*, in 1813, is about 20 miles in length, east and west, by four miles in breadth; its western extreme is lat. 8º 5' N., long. 114º 50' E.[2]

At least 19 ships were stranded on reefs in the area between 1974 and 1996.[3]

Investigator Shoal was occupied by Malaysian armed forces in 1999.[4] A few small structures may be seen in the photo.[5] The Prime Minister of Malaysia stated: "We have built on our own zone and not outside the zone for climate research and marine life studies and also to prevent ship collisions".[6] The Philippines protested these actions.

The Status of the Feature under UNCLOS

Investigator Shoal is a low-tide elevation under Article 13. It dries at low water but is submerged at high tide. It is located within 126.7 M of Palawan, and at least 29.3 M from the nearest high-tide feature, Commodore Reef.

INVESTIGATOR SHOAL

References

[1] James Horsburgh, *India Directory, or Directions for Sailing to and From the East Indies*, Vol. 2 (1827), p.432. SWSP, Vol. IV, Annex 387.

[2] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (4th ed., 1901), p. 238. SWSP, Vol. IV, Annex 392.

[3] Hal Olson, "Marine Traffic in the South China Sea", *Ocean Yearbook*, Vol. 12 (1996), p. 149-50. SWSP, Vol. V, Annex 447.

[4] Johan Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 76. SWSP, Vol. V, Annex 460.

[5] D.G. Wiencek & J.C. Baker, "Security Risks of a South China Sea Conflict", in *Cooperative Monitoring in the South China Sea: Satellite Imagery, Confidence-building Measures, and the Spratly Island Disputes* (J. C. Baker & D. G. Wiencek, eds., 2002), p. 53. SWSP, Vol. V, Annex 451; Vivian L. Forbes,"Geographical Change: Direction and Continuing Issues", in *Southeast Asia Transformed: A Geography of Change* (Chia Lin Sien, ed. 2003), p. 79-80. SWSP, Vol. V, Annex 452; Isagani de Castro, Jr., "Bilateralism and Multilateralism in Malaysia-Philippines Relations", in *International Relations in Southeast Asia: Between Bilateralism and Multilateralism* (N. Ganesan & R. Amer, eds., 2010), p. 243. SWSP, Vol. V, Annex 454.

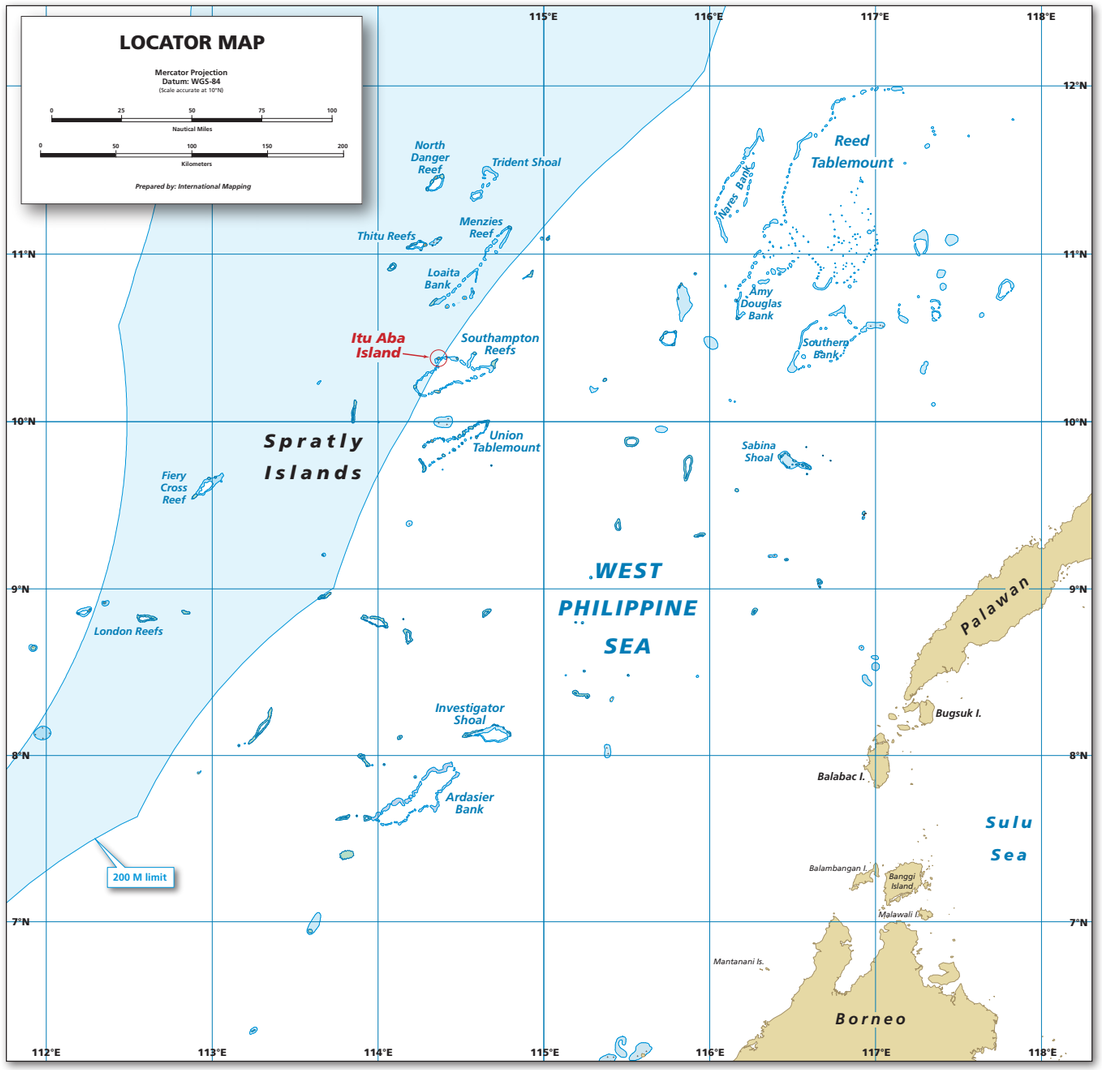
[6] D.G. Wiencek & J.C. Baker, "Security Risks of a South China Sea Conflict", in *Cooperative Monitoring in the South China Sea: Satellite Imagery, Confidence-building Measures, and the Spratly Island Disputes* (J. C. Baker & D. G. Wiencek, eds., 2002), p. 53. SWSP, Vol. V, Annex 451.

ITU ABA ISLAND

Also known as:

Chinese: Taiping Dao (太平岛)
Philippine: Ligaw Island

Coordinate Location: 10°23'00"N - 114°21'30"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 200.6 M
Distance to Hainan: 539.7 M
Claimed by: China, Philippines, Vietnam
Occupied by: China



Satellite Image

Itu Aba Island
(QuickBird-2, 12 April 2014)

Aerial view of Itu Aba Island

ITU ABA ISLAND

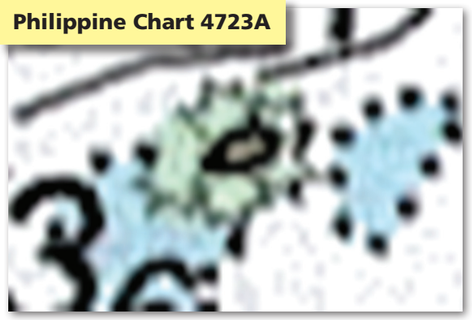
Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

LIGAW ISLAND (10° 23' N, 114° 22' E) lies near the NW end of Tizard Bank. A reef, defined by breakers surround the island and extends up to 0.5 mile offshore. Ligaw Island is covered with scrub and trees, 8 meters (25 ft) high. A concrete landing jetty stands near the SW end of the island, with a depth of 0.6 meters (2 ft) at its head. There are several partially demolished buildings and two shallow wells; a lookout mast 15 meters in height, stands near the E end of the island. Three stranded wrecks lie 0.1 mile SSW of the E extremity of the island. A 5.5 meters (18 ft) shoal, with a 3.7 meters (12ft) patch close S of it lies 0.6 mile WSW of the W extremity; a 6.4 meters (21ft) shoal lie 6.3 mile S of the patch.

…The best approach from seaward to this anchorage is through the deep-water channel close to the E end of the island. A reef covered at HW, lies 2 miles E. A 6.4 meters (21 ft) shoal lies near the middle of the channel between them. In 1954 less water was reported in this vicinity. In 1951, a sand cay, with bushes 5 meter high on it, lay 3.5 miles E of the last mentioned reef to which it is connected

Philippine Chart 4723A



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

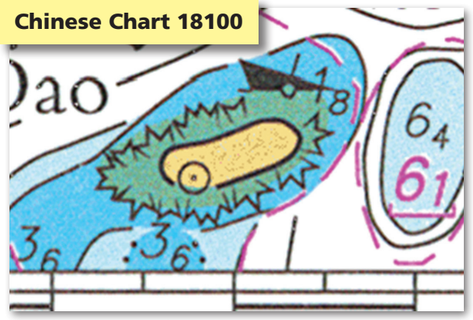
Taiping Island - Located at the northwest end of Zhenghe reef group, it is the largest island in the Nansha Islands. It is also the main island of the Zhenghe reef group. The island is named after the "Taiping Ship" of the Chinese Nationalist Party army that assumed control of the island in 1946. The length of the island from east to west is approximately 1.3 km, the width from north to south is approximately 0.41 km, the surface area is approximately 0.43 sq. km, and the altitude is 4.1 meters high.

This island is surrounded by coral reef, the eastern end extends 2.5 chains, and the western end extends 3.4 chains. The north and south sides of the island are fairly narrow. The narrowest section of the western part of the south side extends approximately 150 meters. A waterway approximately 200 meters in length and approximately five meters wide has been blasted through the southern reef basin. …(the water depth is around 30 meters, and it is a gravel bottom). Approximately two chains from the east side and northeast side of the island's eastern end and approximately 1.1 nautical miles west by south, there are shipwrecks exposed above the water.

Within approximately 1.6 nautical miles south of the Taiping Island reef's western end, the water depth is less than 10 meters. Approximately seven chains southwest of this island, there is a shoal patch with a water depth of 3.6 meters.

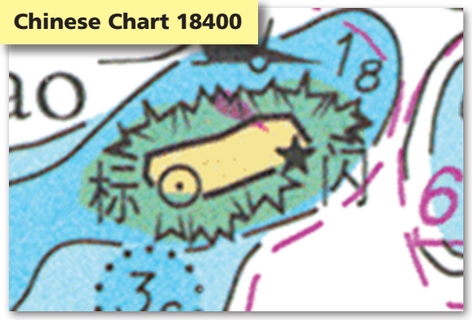
Approximately two nautical miles east of Taiping Island, there is a reef rock that is submerged during high tide. There is a submerged shoal with a water depth of 6.4 meters between this reef rock and the island. According to 1954 reports, the nearby water depth becomes shallower.

Chinese Chart 18100



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC25

Chinese Chart 18400

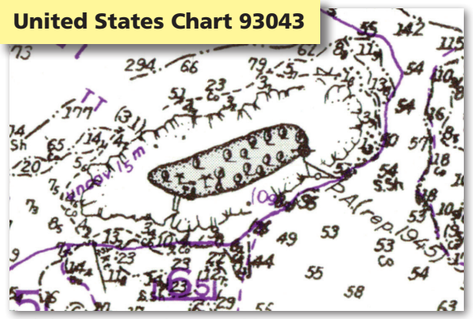


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

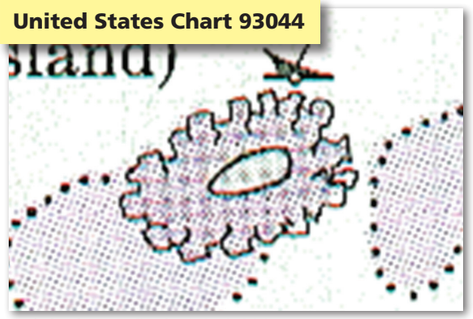
Itu Aba Island (10°23'N., 114°22'E.), 2m high, lies on the NW corner of Tizard Bank. It is surrounded by a reef that usually breaks and on which a wreck lies stranded. The island is covered with scrub brush and trees whose tops are about 30m high. There are a few buildings, some in ruins, and a tower-like structure on the island. A lookout mast stands near the E end, and a concrete landing jetty, with a depth of 0.6m at its head, near the SW end of Itu Aba Island.

United States Chart 93043



Original Map Scale 1:75,000
Complete chart reproduced as Annex NC51

United States Chart 93044

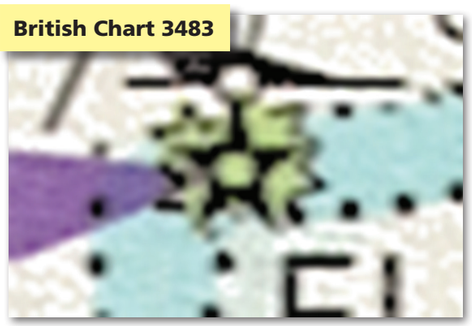


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Itu Aba Island (10°23'·08N 114°21'·83E), which is covered with scrub and trees. There are several partially demolished buildings and two shallow wells on the island, and a look-out mast with a light stands near its E end. A concrete landing jetty extends SSW near the SW end of the island, with a depth of 0.6 m at its head. A reef, defined by breakers, surrounds the island and extends up to 5 cables offshore. A stranded wreck lies on the edge of the reef 6 cables NW of the NW tip of the island.

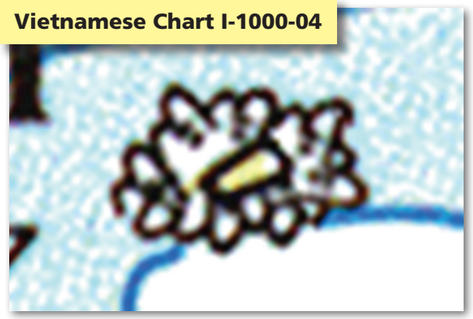
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

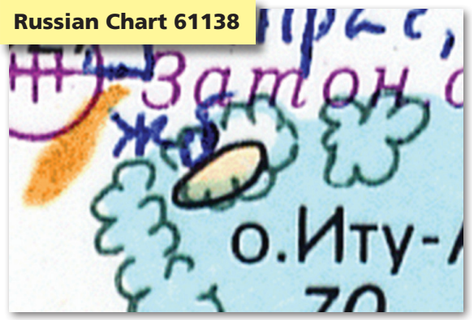
ITU ABA ISLAND
Additional Charts

Vietnamese Chart I-1000-04



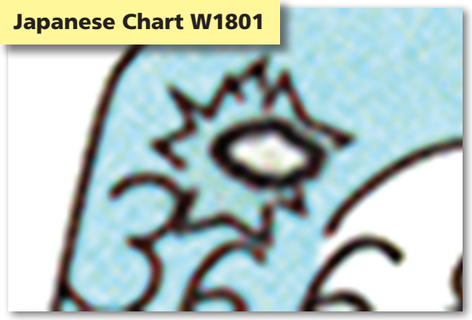
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Itu Aba Island lies at the northwest end of Tizard Bank and has an area of 0.43 km^2. Two miles east of Itu Aba lies another reef that covers at high water. Itu Aba is covered with scrub brush and trees and has two shallow wells. There are both demolished buildings and intact structures on the feature. As seen in the satellite imagery and aerial photograph, a runway has been built that runs through the centre of the feature.

Historical and Anthropological Information

Itu Aba was reported by the British ship *Dolphin* in 1767 and subsequently surveyed in 1867 by the *H.M.S Rifleman*.[1] In 1890, *The Annals and Magazine of Natural History: Zoology, Botany, and Geology* described Itu Aba as follows:

> *Itu-Aba*, the largest islet, is three quarters of a mile in length and covered with large trees of considerable age; it is similarly surrounded by a shallow-water platform. Outside this, in 6 fathoms water, the number of living corals was found by the diver to be much fewer than elsewhere; but from the reef, in 21 fathoms water, several massive specimens were obtained, and a rich variety of species was found on the lagoon side of the reef.[2]

There was no report of any indigenous human habitation or settlement on Itu Aba. There appears to have been none. The only occupants reported during this period were fishermen whose presence was temporary. In 1899, the U.K. Hydrographic Department described Itu Aba in the following terms:

> Itu Aba, the larger of the two islands, lies at the north-west corner of the bank, and is three-quarters of a mile in length. The reef surrounding it extends in some places nearly half a mile, its limits being generally defined by a line of breakers. The island is covered with small trees and bushes, and there are a few cocoanut and plantain trees near a well, the tops of which are about 25 feet above the sea.
>
> The fishermen upon Itu Aba island were more comfortably established than the others, and the water found in the well on that island was better than elsewhere.[3]

France began surveying the area around the Spratlys in 1927.[4] A notice was published by the Ministry of Foreign Relations in the Official Journal of the French Republic on 26 July 1933 that France had taken possession of Itu Aba "as well as its dependent islets" on 10 April 1933.[5] France is reported to have planted a French flag on Itu Aba that year,[6] and to have built a meteorological station there in 1938.[7]

Contemporaneous reports describe Itu Aba as being among those features that were characterized as "deserted coral reefs which rise scarcely more than nine feet above sea level",[8] and as "dots of coral".[9] There were also reports of a "few Chinese fishermen" and the "remains of a Japanese enterprise prospecting for phosphates".[10] A placard found on Itu Aba, roughly translated, reads: '"I, Ti Mung, captain of a junk, came here in the full moon of March to bring you nourishment. I found no one. I leave rice in the stone cellar and I go away".[11]

France's claim to Itu Aba was protested by Japan, which claimed to have exploited phosphate deposits near the island.[12] Japan informed the French government that it considered France's occupation to be an infringement on its rights.[13] According to an internal British memorandum from 1938, Japan "apparently acquiesc[ed] in the French annexation in 1933", but later disputed the claim.[14] In the latter half of the 1930s, Japanese fisherman visited the island, and Japan threatened to "take measures for the protection of their rights" should France interfere with them.[15]

The British Government held an interdepartmental meeting in 1938 to consider Japanese actions on Itu Aba and other features in the Spratlys. It concluded:

> (a) that it was essential to prevent the establishment of Japanese air or submarine bases in the islands; (b) that it was extremely desirable to exclude Japanese nationals from the islands altogether (their presence as observers being both dangerous and likely to lead up to an eventual Japanese claim to sovereignty over the islands); and (c) that in case the French Government were not ready to take action to exclude the Japanese without a promise of support from His Majesty's Government, it would be necessary to discover from the Committee of Imperial Defence exactly how much support it would be possible to promise them.[16]

The British Government considered, in light of its geographic location and potential for use as a refuelling base for air and naval vessels, whether Itu Aba could be used for a landing site; however, the U.K. concluded the feature was unsuitable for a landing strip[17] because it was "barely sufficient in extent for aircraft to take off".[18] The British authorities observed:

> Surface loose fine sand broken Coral and thin crust of conglomerate coral sand too rough as it stands even when whole of the islands cleared of trees.
>
> Surface even if levelled incapable of bearing weight required without

ITU ABA ISLAND

Historical and Anthropological Information, cont'd

> foundation being laid over whole island for which no material or labour available locally.
>
> R.A.F. Officers considered cost and time prohibitive for doubtful result. Danger of subsidence of foundation if laid due to seepage owing to porous constitution of island and of sea encroachment when binding property of present vegetation lost be [*sic*] clearing it.[19]

The British government was not successful in excluding the Japanese military from Itu Aba. Japan declared an occupation of the Spratlys on 9 April 1939, drawing a strong protest from France.[20] According to a telegram from the United States Department of State dated 5 April 1939, the Japanese Government did not recognize the French claims to the Spratly Islands, including Itu Aba.[21] The position of Japan was that:

> The Japanese Government, basing their action on the close connection that has existed between the islands and the Japanese Empire and on the right deriving therefrom under International Law, and motivated by their desire to avoid the possibility of further complications with the French Government, incidental to the hitherto vague administrative status of the islands, have incorporated the Sinnan Islands in the territory under the jurisdiction of the Government-General of Formosa as of the thirtieth of March, 1939.[22]

During World War II, Itu Aba was used by the Japanese military.[23] It was considered a strategic location from which to interdict shipping in the South China Sea.[24] It was bombed by Allied forces toward the end of the war.[25] *The New York Times* reported on 1 May 1945 that: "Over the China Sea naval planes of the Seventh Fleet struck their first blow in a new area of the Japanese Empire, staging reconnaissance in force at Itu Aba island in the Spratly group".[26]

Following the end of World War II, the United States carried out a reconnaissance mission on Itu Aba on 18 November 1945.[27] The French ship *Chevreud* landed there on 5 October 1946, and France placed a stone marker to claim sovereignty over the feature, which was uninhabited at the time.[28]

The Republic of China sent two ships, the *T'ai p'ing* and *Chung-yeh*, to take possession of Itu Aba later in 1946.[29] It placed a stone marker on Itu Aba on 12 December 1946,[30] and the following year a naval administrator from the Republic of China took up a post there.[31] On 25 March 1949, *The New York Times* reported that a "200-man Chinese Nationalist garrison" was observed on Itu Aba by Americans and reported in *The China Mail of Hong Kong*.[32] However, Itu Aba was abandoned by Chinese nationalist forces in 1950,[33] who did not return until 1956.[34] Japan renounced its claims to the Spratly Islands, including Itu Aba, in the 1951 Treaty of San Francisco.[35]

In May 1956, Tomas Cloma, who claimed to have "discovered" the Spratlys in 1947, raised the Philippine flag on Itu Aba and several other features, naming it the "Archipelago of Freedomland (Kalayaan)".[36] Numerous States disputed Cloma's claims, including the Philippines, France, Great Britain, the Netherlands, the Republic of Vietnam, the Republic of China, and the People's Republic of China.[37]

Little information is available about the activities of Chinese Nationalist forces during this period, although it is clear they maintained a military presence on Itu Aba in the summer of 1971, which was objected to by the Philippines at that time.[38] *The New York Times* reported on 11 July 1971 that Chinese Nationalist artillery stationed at Itu Aba fired on a boat carrying a Philippine Congressman.[39] The President of the Philippines, Ferdinand E. Marcos, reportedly sent diplomatic communications to the Taiwanese authorities requesting that the troops be withdrawn from Itu Aba.[40]

Taiwanese military forces remained on Itu Aba. In 1974, there were reportedly several hundred Taiwanese military personnel stationed there.[41] Itu Aba could not sustain them without external support. On 25 January 1976, it was reported that Taiwan had to send a destroyer "to resupply its garrison of 200 to 300 men on … Itu Aba".[42]

As of August 2010, there were reportedly 34 structures of varying shapes and sizes. The feature has an 1,150 metre-long runway[43] that covers a significant portion of its territory, as evidenced by the satellite image reproduced in this entry. Although it is reported to have "two shallow wells" for water,[44] some accounts report that the "underground water is salty and unusable for drinking".[45]

Taiwan maintains approximately 100 military and Coast Guard personnel on Itu Aba,[46] who are served by regular transports from the military.[47] It is building a wharf that will serve as a base for "large and medium-sized coast guard patrol boats and … some navy combat ships".[48] The upgraded military facilities are projected to be completed at some point in 2015, although Vietnam and the Philippines have protested the planned improvements.[49]

According to one observer: "there is little pretence about civilian life on Itu Aba: there are no children's schools or tourist hotels".[50]

The Status of the Feature under UNCLOS

Itu Aba is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. As detailed in paragraphs 5.96-5.97 and 5.102-5.114 of the Memorial, this very small feature, although the largest in the Spratlys, covers only 0.43 km^2. The feature has never had a permanent human settlement. In 1933, Itu Aba was described as a "deserted coral reef[]".[51] A survey by the Royal Air Force in 1938 revealed Itu Aba's poor geological characteristics, noting its "porous constitution".[52] Other than occasional visits by sojourning fishermen of different nationalities,[53] Itu Aba's occupants have been military and coast guard personnel. The Japanese armed forces were present on the feature, which they used for military purposes during World War II, from at least 1938[54] to 1945.[55] As noted by the British government in 1938, Japan's interest in Itu Aba "is not commercial but is directed towards strategic ends".[56] The Republic of China's armed forces occupied Itu Aba from 1946 to 1950,[57] and from 1956 to the present,[58] to secure Taiwan's claim to the feature. The military personnel stationed there are dependent upon outside support,[59] and the "underground water is salty and unusable for drinking".[60] There have been no attempts to colonize Itu Aba or to maintain a freestanding civilian settlement, nor is such settlement feasible.

[1] United Kingdom, Foreign Office, *List of Islands and Reefs in the Area Claimed by France* (undated), p. 1. SWSP, Vol. III, Annex 354.

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References

[2] A. Günther et al., *The Annals and Magazine of Natural History*, Vol. VI, 6th Series (1890), p. 355. SWSP, Vol. IV, Annex 391.

[3] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (4th ed., 1901), p. 110. SWSP, Vol. IV, Annex 392.

[4] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 62. SWSP, Vol. V, Annex 246(bis).

[5] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933). MP, Vol. VI, Annex 159; *see also* French Republic, Indochina Hydrographic Mission, *Procès-Verbal* (10 Apr. 1933). SWSP, Vol. III, Annex 366.

[6] P.J. Philip, "Barren Coral Isles in Pacific Cause International Dispute", *New York Times* (27 Aug. 1933). SWSP, Vol. IV, Annex 401.

[7] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 94. SWSP, Vol. V, Annex 459.

[8] P.J. Philip, "Barren Coral Isles in Pacific Cause International Dispute", *New York Times* (27 Aug. 1933). SWSP, Vol. IV, Annex 401.

[9] "France's Tiny New Island Empire", *New York Times* (13 Aug. 1933). SWSP, Vol. IV, Annex 402.

[10] *Id*.

[11] *Id*.

[12] "Pacific Isles Under Dispute: Groups in the Far East have Often been Cause of Controversies", *New York Times* (3 Sept. 1933). SWSP, Vol. IV, Annex 403.

[13] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 64. SWSP, Vol. V, Annex 246(bis).

[14] United Kingdom, Foreign Office, "Islands in the South China Sea" (27 April 1938), p. 2. SWSP, Vol. III, Annex 378.

[15] *Draft Letter* from Under-Secretary of State for Foreign Affairs, United Kingdom, to Secretary of the Committee for Imperial Defence, United Kingdom, No. 3319/956/61 (Apr. 1938). SWSP, Vol. III, Annex 373; United Kingdom, Foreign Office, "Islands in the South China Sea" (27 April 1938), p. 2. SWSP, Vol. III, Annex 378.

[16] United Kingdom, Foreign Office, "Islands in the South China Sea" (27 April 1938), p. 3. SWSP, Vol. III, Annex 378.

[17] *Message* from British Admiralty, to H.M.S. "Herald", United Kingdom, and Commander-in-Chief, China Station, British Royal Navy (26 April 1938). SWSP, Vol. III, Annex 376.

[18] *Message* from H.M.S. "Herald", United Kingdom, to British Admiralty (27 Apr. 1938). SWSP, Vol. III, Annex 377.

[19] *Id*.

[20] Marwyn S. Samuels, *Contest for the South China Sea* (1982), pp. 64-65. SWSP, Vol. V, Annex 246(bis).

[21] *Telegram* from Embassy of the United States in Paris to the Department of State of the United States (5 Apr. 1939), p. 2. SWSP, Vol. III, Annex 382.

[22] *Id*.

[23] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 57. SWSP, Vol. V, Annex 459.

[24] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 65. SWSP, Vol. V, Annex 246(bis)].

[25] "The Texts of the Day's Communiques on the Fighting in Various War Zones", *New York Times* (4 May 1945). SWSP, Vol. IV, Annex 404.

[26] Lindesay Parrott, "Australians Widen Borneo Grip; Americans Crash Way into Davao", *New York Times* (4 May 1945), p. 2. SWSP, Vol. IV, Annex 405. *See also* Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 94. SWSP, Vol. V, Annex 459.

[27] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 57. SWSP, Vol. V, Annex 459.

[28] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 58. SWSP, Vol. V, Annex 459; Marwyn S. Samuels, *Contest for the South China Sea* (1982), pp. 75-76. SWSP, Vol. V, Annex 246(bis).

[29] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 76. SWSP, Vol. V, Annex 246(bis).

[30] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 58. SWSP, Vol. V, Annex 459.

[31] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 76. SWSP, Vol. V, Annex 246(bis).

[32] [Untitled Article], *New York Times* (24 Mar. 1949). SWSP, Vol. IV, Annex 406; *see also* "Chinese Reds Said to Join Viet-Minh", *New York Times* (25 Mar. 1949). SWSP, Vol. IV, Annex 407.

[33] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 64. SWSP, Vol. V, Annex 459; Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 77. SWSP, Vol. V, Annex 246(bis).

[34] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 70. SWSP, Vol. V, Annex 459; Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 77. SWSP, Vol. V, Annex 246(bis).

[35] Treaty of Peace with Japan ("Treaty of San Francisco"), 136 U.N.T.S. 45 (8 Sept. 1951), entered into force 28 Apr. 1952, Art. 2(f). MP, Vol. XI, Annex LA-72.

[36] Marwyn S. Samuels, *Contest for the South China Sea* (1982), pp. 81-82. SWSP, Vol. V, Annex 246(bis). *See also* "South Vietnam Warned by Red China on Islands", *New York Times* (31 Aug. 1956). SWSP, Vol. IV, Annex 408; "Manila Asks Taiwan's Troops to Quit South China Sea Island", *New York Times* (11 July 1971). SWSP, Vol. IV, Annex 409.

[37] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 84. SWSP, Vol. V, Annex 246(bis).

[38] "Manila Asks Taiwan's Troops to Quit South China Sea Island", *New York Times* (11 July 1971). SWSP, Vol. IV, Annex 409.

[39] "Manila Asks Taiwan's Troops to Quit South China Sea Island", *New York Times* (11 July 1971). SWSP, Vol. IV, Annex 409; *see also* "Tiny Isles in Pacific Make Big Waves", *New York Times* (12 July 1971). SWSP, Vol. IV, Annex 410.

[40] *Id*.

[41] "Saigon Rejects Peking's Claim to the Spratly Islands", *New York Times* (6 Feb. 1974). SWSP, Vol. IV, Annex 411.

[42] Fox Butterfield, "Spratly Islands Causing Concern: Analysts Believe Actions by 4 Asian Countries Could Lead to Confusion", *New York Times* (25 Jan. 1976). SWSP, Vol. IV, Annex 412.

[43] "Itu Aba Island wharf to bolster nation's defense", *Taipei Times* (31 Aug. 2013). MP, Vol. X, Annex 327.

[44] United Kingdom Hydrographic Office, Admiralty Sailing Directions: China Sea Pilot (NP31), Vol. 2 (10th ed., 2012), p. 65. MP, Vol. VII, Annex 235.

[45] T-C Huang et. al., "The Flora of Taipingtao (Aba Itu Island)", *Taiwania*, Vol. 39, No. 1-2 (1994), p. 1. MP, Vol. VII, Annex 254; Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 111. SWSP, Vol. V, Annex 459.

[46] Shelley Shan, "Itu Aba Reconstruction to Start Next Year: Official", *Taipei Times* (6 Nov. 2013). MP, Vol. X, Annex 328.

[47] "As Taiwan Beefs up Prized South China Sea outpost, Barely a Peep from China", *New York Times* (25 May 2014). SWSP, Vol. IV, Annex 433.

[48] "Itu Aba Island wharf to bolster nation's defense", *Taipei Times* (31 Aug. 2013), p. 2. MP, Vol. X, Annex 327. *See also* "As Taiwan Beefs up Prized South China Sea outpost, Barely a Peep from China", *New York Times* (25 May 2014), p. 1. SWSP, Vol. IV, Annex 433.

[49] "As Taiwan Beefs up Prized South China Sea outpost, Barely a Peep from China", *New York Times* (25 May 2014), p. 4. SWSP, Vol. IV, Annex 433.

[50] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 110. SWSP, Vol. V,

Annex 459.

[51] P.J. Philip, "Barren Coral Isles in Pacific Cause International Dispute", *New York Times* (27 Aug. 1933). SWSP, Vol. IV, Annex 401.

[52] *Message* from H.M.S. "Herald", United Kingdom, to British Admiralty (27 Apr. 1938). SWSP, Vol. III, Annex 377.

[53] "France's Tiny New Island Empire", *New York Times* (13 Aug. 1933). SWSP, Vol. IV, Annex 402.

[54] United Kingdom, *Aide-Mémoire*, No. 172/15G/38 (6 Sept. 1938). SWSP, Vol. III, Annex 380.

[55] Lindesay Parrott, "Australians Widen Borneo Grip; Americans Crash Way into Davao", *New York Times* (4 May 1945). SWSP, Vol. IV, Annex 405. *See also* Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 94. SWSP, Vol. V, Annex 459.

[56] United Kingdom, *Aide-Mémoire*, No. 172/15G/38 (6 Sept. 1938), p.1. SWSP, Vol. III, Annex 380.

[57] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 76. SWSP, Vol. V, Annex 246(bis). [Untitled Article], *New York Times* (24 Mar. 1949). SWSP, Vol. IV, Annex 406; "Chinese Reds Said to Join Viet-Minh", *New York Times* (25 Mar. 1949). SWSP, Vol. IV, Annex 407; Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 64. SWSP, Vol. V, Annex 459;

[58] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 70. SWSP, Vol. V, Annex 459; "Manila Asks Taiwan's Troops to Quit South China Sea Island", *New York Times* (11 July 1971). SWSP, Vol. IV, Annex 409; "Saigon Rejects Peking's Claim to the Spratly Islands", *New York Times* (6 Feb. 1974). SWSP, Vol. IV, Annex 411; Fox Butterfield, "Spratly Islands Causing Concern: Analysts Believe Actions by 4 Asian Countries Could Lead to Confusion", *New York Times* (25 Jan. 1976). SWSP, Vol. IV, Annex 412; Fox Butterfield, "Philippines is Bolstering its Position in Islands that are also Claimed by Peking, Taipei and Hanoi", *The New York Times* (16 March 1978). SWSP, Vol. IV, Annex 413.

[59] Fox Butterfield, "Spratly Islands Causing Concern: Analysts Believe Actions by 4 Asian Countries Could Lead to Confusion", *New York Times* (25 Jan. 1976). SWSP, Vol. IV, Annex 412.

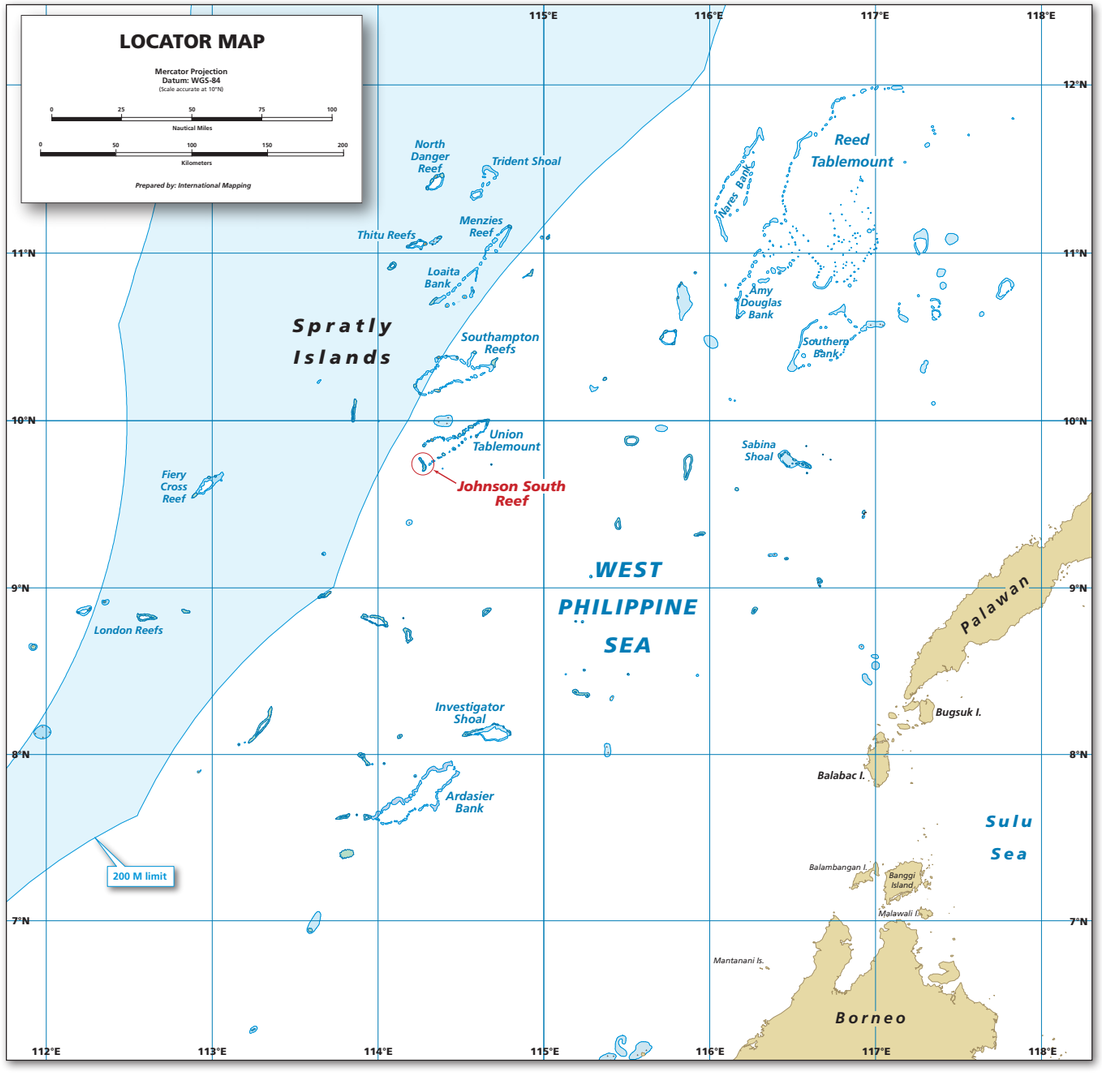
[60] T-C Huang et. al., "The Flora of Taipingtao (Aba Itu Island)", *Taiwania*, Vol. 39, No. 1-2 (1994). MP, Vol. VII, Annex 254.

JOHNSON SOUTH REEF

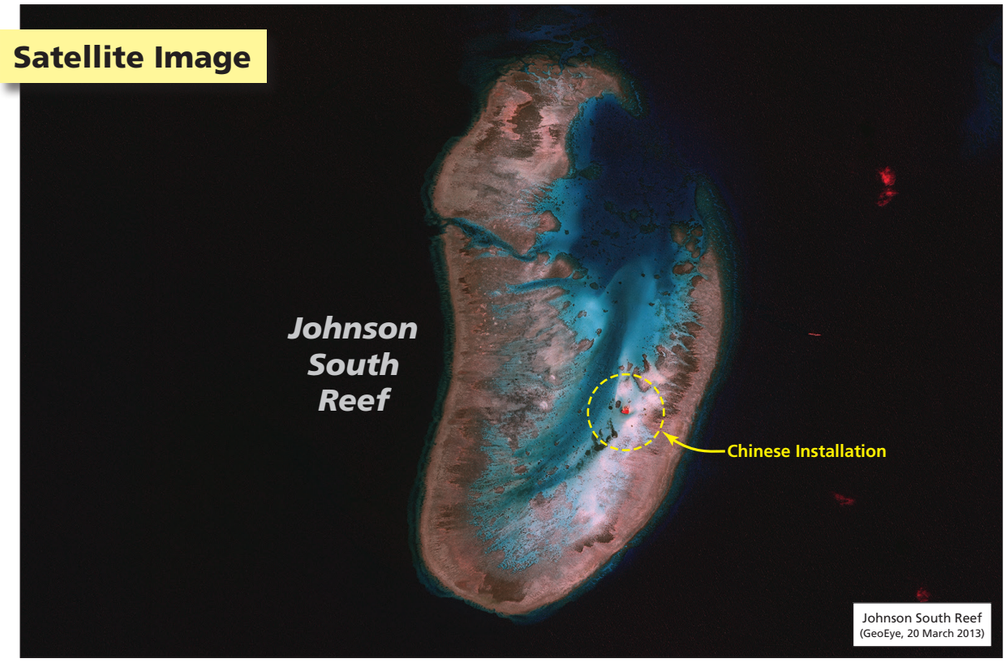
Also known as:

Chinese: Chigua Jiao (赤瓜礁)
Philippine: Mabini Reef

Coordinate Location: 09°42'40"N - 114°16'45"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 186.6 M
Distance to Hainan: 570.8 M
Claimed by: China, Philippines, Vietnam
Occupied by: China



Satellite Image



Johnson South Reef
(GeoEye, 20 March 2013)

Aerial view of Chinese installation

Chinese installation on Johnson South Reef

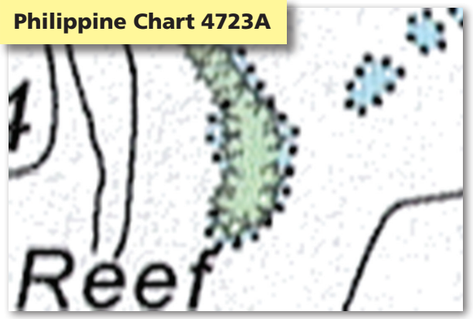
JOHNSON SOUTH REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

Philippine Chart 4723A

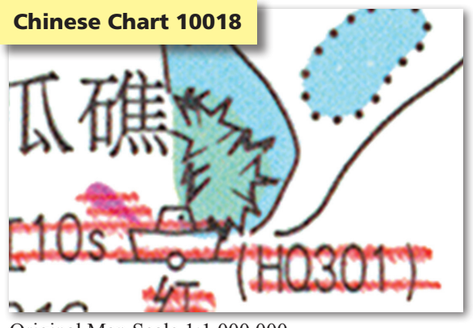


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Chigua Reef - Located at the edge of the southwest end of the Jiuzhang reef group's large atoll, the reef flat is low-lying, it has no particularly obvious natural markers. During high tide, it is submerged. During low tide, it is exposed and has a shape resembling a horseshoe.

Chinese Chart 10018

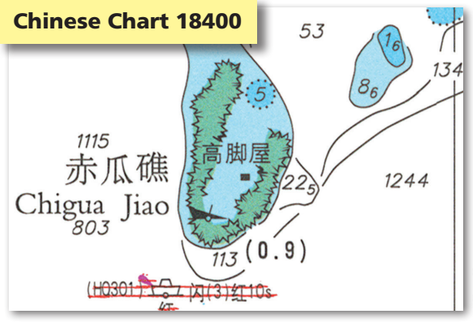


Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC20

Chinese Chart 10019

Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC3

Chinese Chart 18400



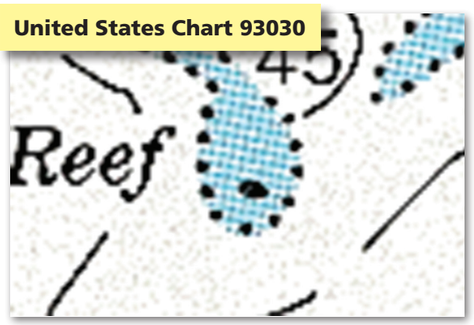
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Johnson Reef (9°42'N., 114°17'E.), of brown volcanic rock with white coral around the inner rim, is located at the SW end of Union Atoll. Johnson Reef partly encloses a shallow lagoon entered from the NE. The largest rock on the reef is about 1.2m high. Several other rocks show above the water on the SE part of the reef; the remainder of the reef is reported to be covered.

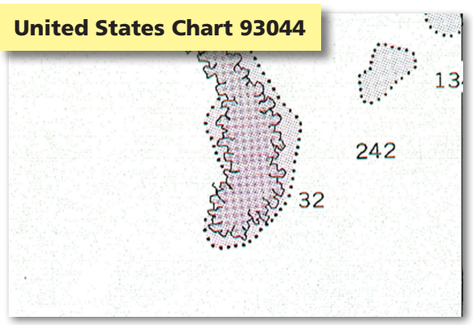
Discolored water was reported (1992) to lie SW of Johnson Reef in position 9°32.5'N, 114°02.0'E.

United States Chart 93030



Original Map Scale 1:1,071,000
Complete chart reproduced as Annex NC60

United States Chart 93044

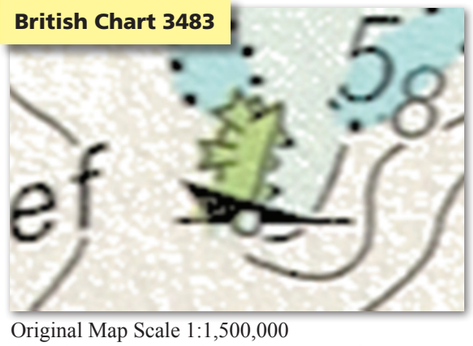


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Johnson Reef South (9°42'·63N 114°16'·44E), which lies near the SW extremity of the banks and reefs; a stranded wreck lies on the S edge. It has a narrow inlet which is suitable for boats.

British Chart 3483

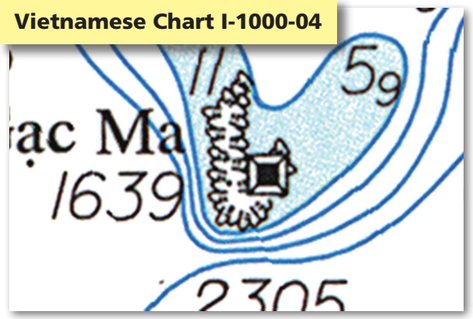


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

JOHNSON SOUTH REEF

Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
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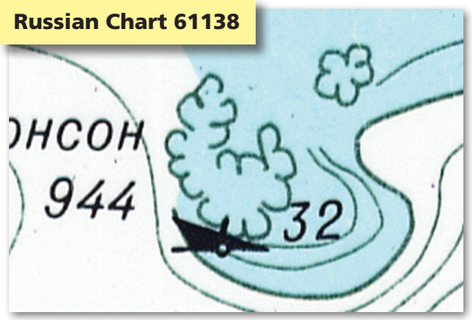
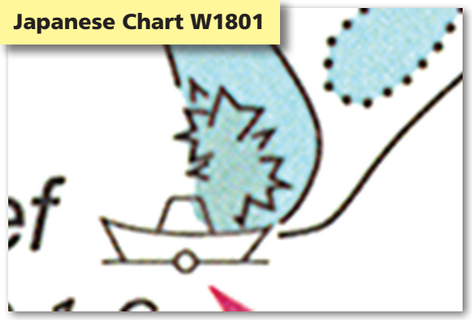
Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage
stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Johnson South Reef is situated at the southwest end of Union Atoll. The U.S. Sailing Directions report that several rocks are shown above water, with the largest being 1.2 metres high. The rest of Johnson South Reef is submerged at high tide. The British, Chinese, Japanese, and Russian nautical charts show a ship-wreck at the southern rim of the reef. On Chinese nautical chart 18400, there is a black rectangle symbol in the central part of the lagoon; the Vietnamese nautical chart depicts a square in the same general location of the lagoon. These squares represent the man-made installation that has been built in the shallow water of the reef. The structure can be seen on both the satellite image and aerial photograph.

The Status of the Feature under UNCLOS

Johnson Reef is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. As detailed in paragraphs 5.89-5.90 of the Memorial, the Chinese sailing directions and all nautical charts describe the reef as being submerged at high tide and therefore as only a low-tide elevation.[1] The U.S. sailing directions, however, describe some rocks as protruding as high as 1.2 metres from the surface.[2] There is no vegetation on the exposed part of the reef. China, which occupied the feature in 1988 in order to bolster its sovereignty claim,[3] maintains its presence there with supplies from the outside. There is no record of any human activity on Johnson Reef prior to China's occupation. No economic activity takes place there.

JOHNSON SOUTH REEF

References

[1] Navigation Guarantee Department of the Chinese Navy Headquarters, China Sailing Directions: South China Sea (A103) (2011), p. 178. MP, Vol. VII, Annex 232. *See also* Philippine National Mapping and Resource Information Authority, *Chart No. 4723(A) (Kalayaan Island Group and Recto Bank including Bajo De Masinloc)* (2011). SWSP, Annex NC5; Navigation Guarantee Department of the Chinese Navy Headquarters, *Chart No. 10018 (Xisha Qundao to Nansha Qundao)* (2006). SWSP, Annex NC20; Navigation Guarantee Department of the Chinese Navy Headquarters, *Chart No. 10019 (Huangyan Dao (Minzhu Jiao) to Balabac Strait)* (2006). SWSP, Annex NC3; Navigation Guarantee Department of the Chinese Navy Headquarters, *Chart No. 18400 (Zhenghe Qunjiao to Yongshu Jiao)* (2005). SWSP, Annex NC17; United States Defense Mapping Agency, *Chart No. 93030 (Mui Da Nang to Mui Bai Bung)* (1996). SWSP, Annex NC60; United States Defense Mapping Agency, *Chart No. 93044 (Indonesia South China Sea: Yongshu Jiao to Yongdeng Ansha)* (1983). SWSP, Annex NC6; United Kingdom Hydrographic Office, *Chart No. 3483 (South China, Sulu and Celebes Seas; Mindoro Strait to Luconia Shoals and Selat Makasar)* (2002). SWSP, Annex NC1; Vietnamese People's Navy, *Chart No. I-1000-04 (Cam Ranh - Quần Đảo Trường Sa)* (2008). SWSP, Annex NC64; Russian Main Department of Navigation and Oceanography, *Chart No. 61138 (South China Sea: 7°01'N to 11°30'N, 112°12'E to 115°35'E)* (2007). SWSP, Annex NC40; and Japan Coast Guard, *Chart No. W1801 (South China Sea: Southern Portion, Eastern Sheet)* (2008). SWSP, Annex NC11.

[2] United States National Geospatial-Intelligence Agency, *Pub. 161 Sailing Directions (Enroute), South China Sea and the Gulf of Thailand* (13th ed., 2011), p. 11. MP, Vol. VII, Annex 233.

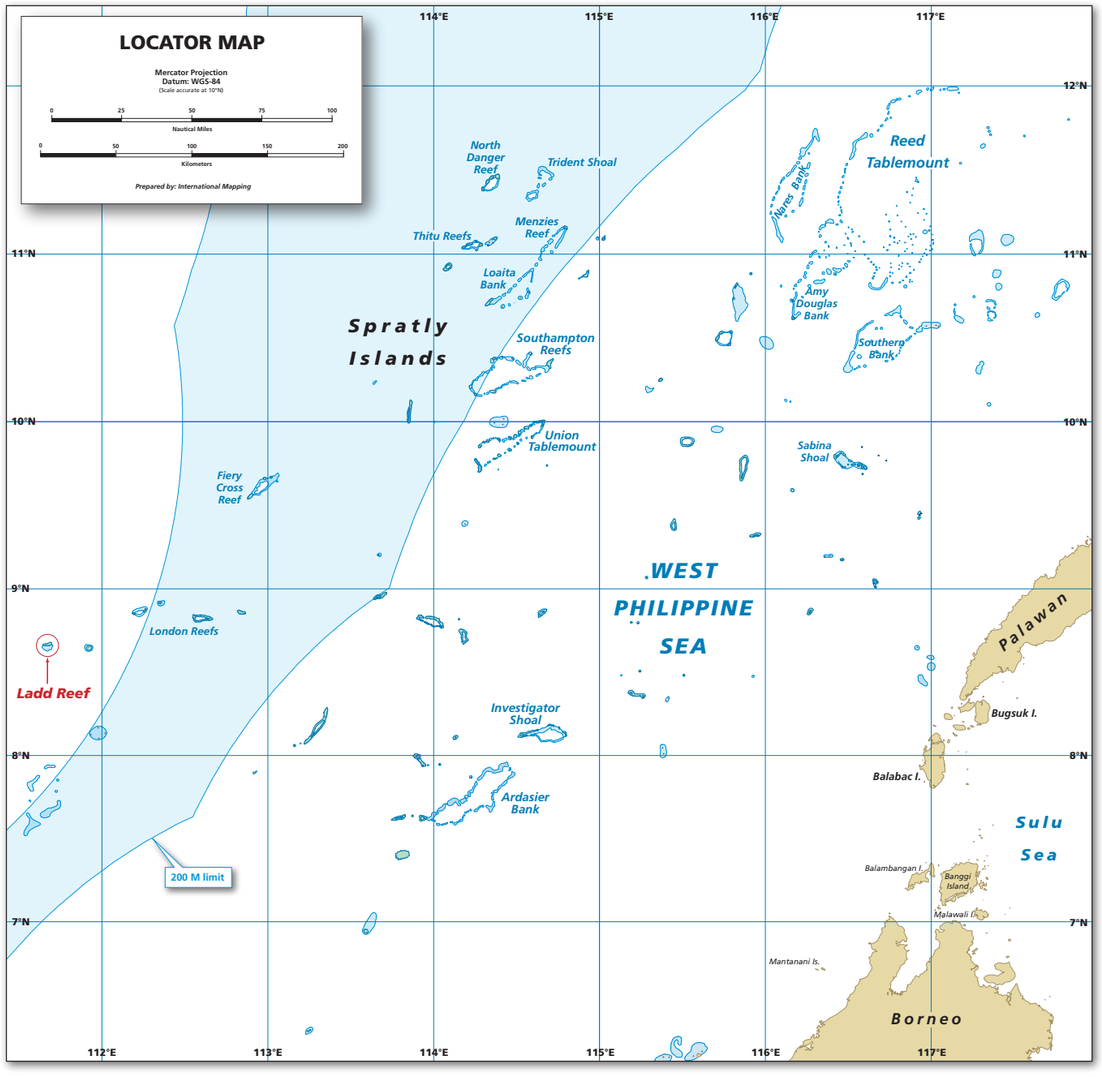
[3] Armed Forces of the Philippines, *Matrix of Events: Johnson (Mabini) Reef* (2013). MP, Vol. IV, Annex 90.

LADD REEF

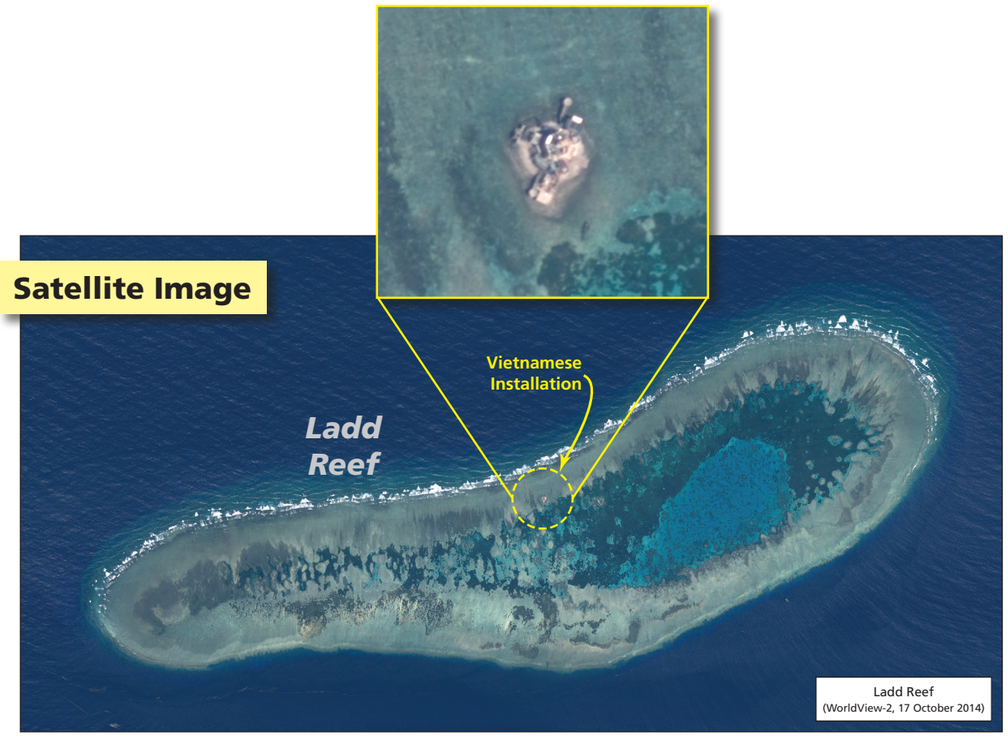
Also known as:

Chinese: Riji Jiao (日积礁)
Philippine: Lagos

Coordinate Location: 08°37'00"N - 111°40'00"E
Nearest High Tide Feature: Spratly Island, 13.1 M
Distance to Palawan: 313.8 M
Distance to Hainan: 579.3 M
Claimed by: China, Vietnam
Occupied by: Vietnam



Satellite Image



Light beacon

Vietnamese structure on Ladd Reef

Ladd Reef

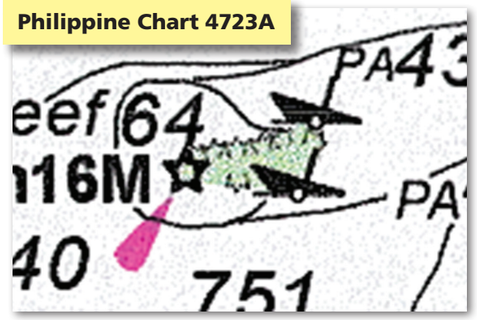
LADD REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

LADD REEF (8° 38' N, 111° 40' E) lies 15 miles W of Lagos I. The reef consist of coral, encloses a lagoon, white sand bottom which dries in parts. It is not possible for boats to cross over into the lagoon. In 1976, 3 conspicuous stranded wrecks lay on the reef; on the NW extremity is the wreck of a 7200 ton steamship which gives a good radar response, and the other wrecks lies about 2 miles ENE and 1.5 miles ESE from it.

Philippine Chart 4723A

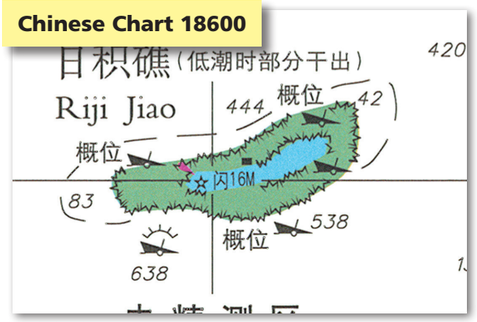


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Riji Reef - Located approximately 15 nautical miles west of Nanwei Island, it is made up of a lagoon surrounded by an atoll with a white sand bottom. During low tide, the reef rock is partially exposed above the sea surface. There is almost no way for ships to cross the reef rock to enter the lagoon. After the tide recedes, the northeast, northwest, and southeast directions of the exposed long coral atoll respectively have shipwrecks.

Chinese Chart 18600

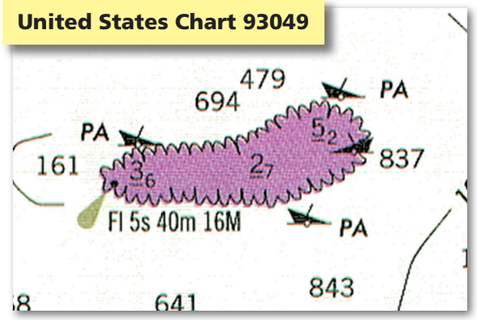


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC24

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Ladd Reef, 15 miles W of Spratly Island, is a drying reef 3 miles long and 1 mile wide. The reef encloses a lagoon which, for all practical purposes, has no entrance. The reef is marked by a light.

United States Chart 93049



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC61

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

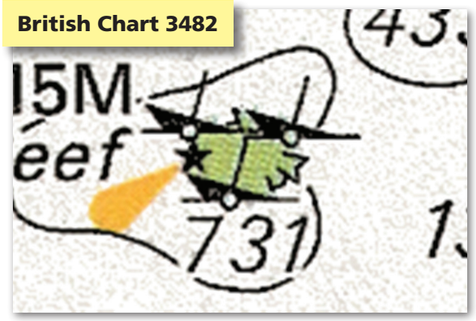
Ladd Reef (8°40'·02N 111°39'·39E), is a coral reef which encloses a lagoon which has a white sand bottom. The reef dries in parts. The lagoon is almost inaccessible to boats.

Three conspicuous stranded wrecks lie on the reef. On the NW extremity of the reef is the wreck of a 7200 tonnes steamship, which gives good radar responses; the other wrecks lie 2 miles ENE and 1 ½ miles ESE from it.

Major light:

Ladd Reef Light (8°40'·02N 111°39'·39E) (2.54), exhibited from the SW extremity of the reef.

British Chart 3482

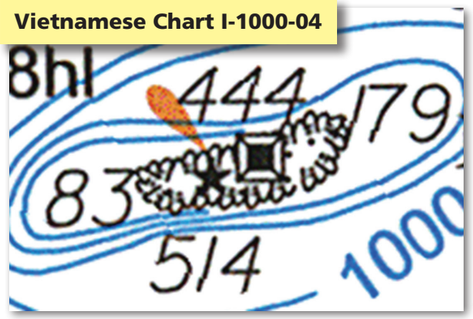


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC48

LADD REEF

Additional Charts

Vietnamese Chart I-1000-04



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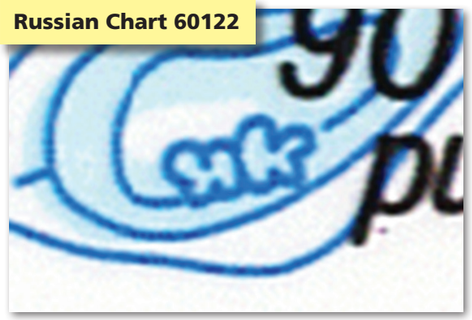
Complete chart reproduced as Annex NC64

Russian Chart 60122



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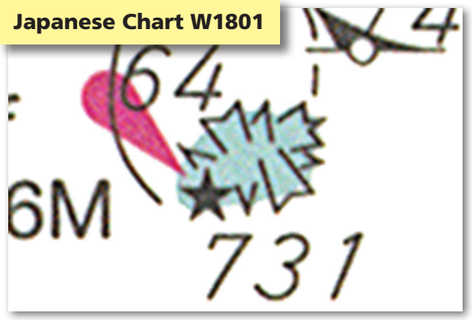
Complete chart reproduced as Annex NC35

Japanese Chart W1801



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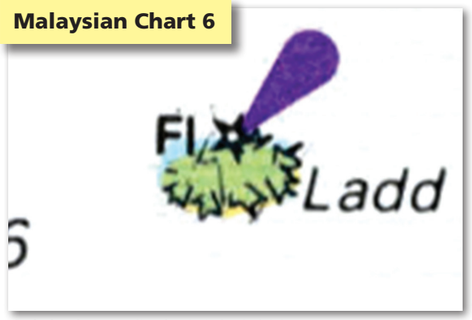
Complete chart reproduced as Annex NC11

Russian Chart 60123

Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC36

Malaysian Chart 6



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Geographic/Hydrographic Observations by Dr. Robert Smith

Ladd Reef is a drying reef which is 3 M long and approximately 1 M wide. It consists of coral that is partially exposed at low tide. None of the charts show anything that could be interpreted to be above water at high tide. Further, none of the sailing directions report anything that is above water at high tide. In light of these facts, it is concluded that only low-tide elevation features exist on Ladd Reef.

The various nautical charts show one to five shipwrecks on or near the reef. There is a light at the southwest extremity of the reef. The Chinese nautical chart shows a black rectangle in the middle of the reef; the Vietnamese nautical chart has a black square in the same area. These symbols might show the location of the man-made structure on the reef. The satellite imagery, and particularly the photograph, show that this installation sits on concrete pillars that have been placed in shallow water. There is no natural vegetation in the area.

Historical and Anthropological Information

Ladd Reef was described in 1879 in *The South China Sea Directory* as follows:

> Ladd Reef (Rob Roy reef) … is a coral bank 3 miles long E.N.E. and W.S.W., and a mile across its broadest part, which is at its eastern end. In the center of the reef is a lagoon with a bottom of clear white sand, which shows with remarkable distinctness. The surrounding reef uncovers at half tide in many places, and at low water it is almost impossible for boats to cross over into the lagoon.[1]

At least 19 ships are reported to have been stranded on reefs in the area between 1974 and 1996, including on Ladd Reef.[2]

There is no record of human habitation prior to 1988 when Vietnamese armed forces occupied Ladd Reef.[3] Vietnam has since built a military structure on the feature including a beacon.[4]

The Status of the Feature under UNCLOS

Ladd Reef is a low-tide elevation under Article 13. It is a coral drying reef that is partially exposed at low tide and encloses a lagoon. It is 313.8 M from Palawan and 13.1 M from the nearest high-tide elevation, Spratly Island.

LADD REEF

References

[1] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 61. SWSP, Vol. IV, Annex 389.

[2] Hal Olson, "Marine Traffic in the South China Sea", *Ocean Yearbook*, Vol. 12 (1996), pp. 149-150. SWSP, Vol. V, Annex 446.

[3] Rommel C. Banlaoi, "Clash of sovereignties in the Spratlys", *The Philippine Star* (30 June 2011). SWSP, Vol. IV, Annex 420; M. Valencia, et al., *Sharing the Resources of the South China Sea* (1997), p. 230. SWSP, Vol. V, Annex 448.

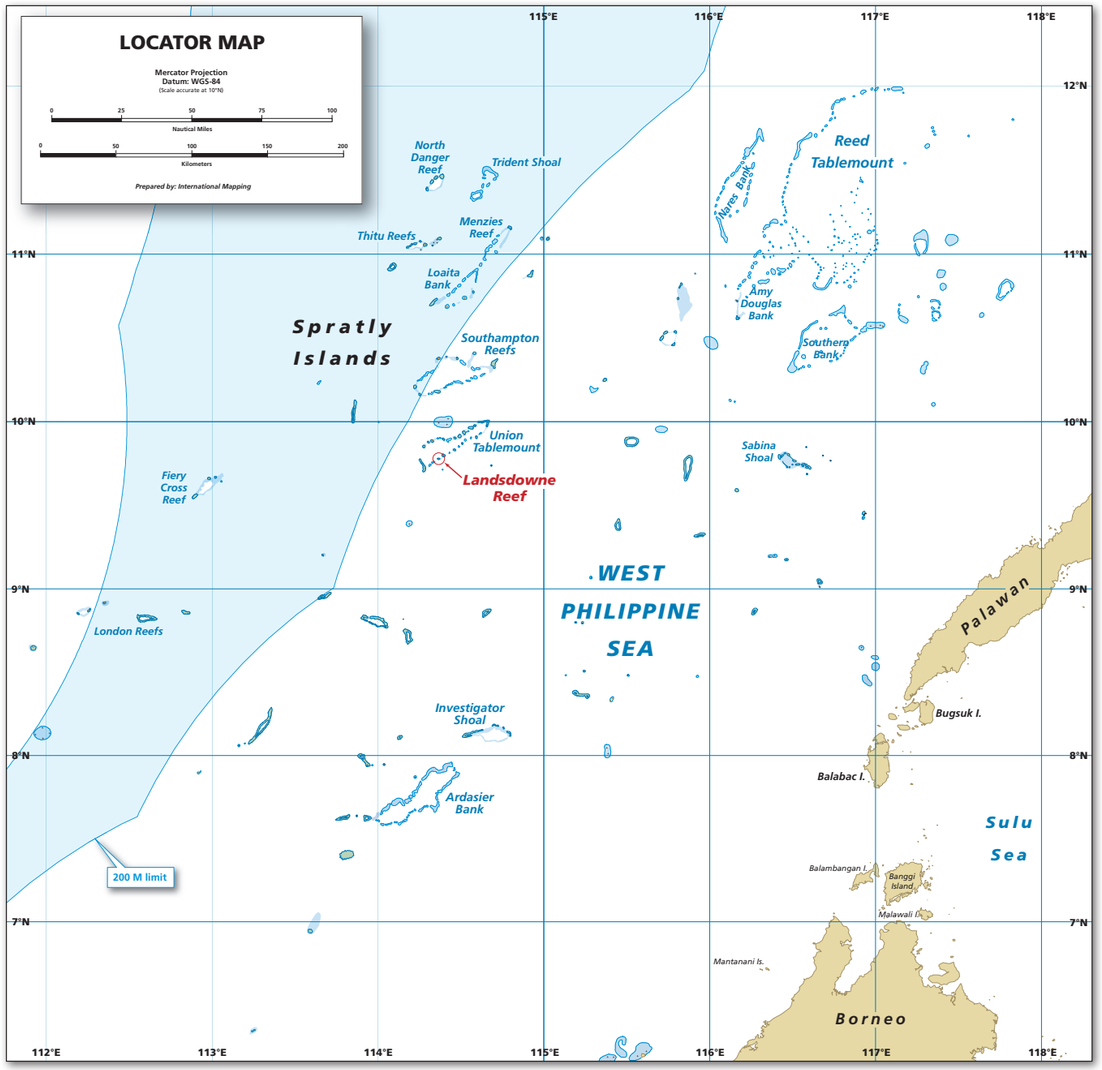
[4] Rommel C. Banlaoi, "Clash of sovereignties in the Spratlys", *The Philippine Star* (30 June 2011). SWSP, Vol. IV, Annex 420.

LANDSDOWNE REEF

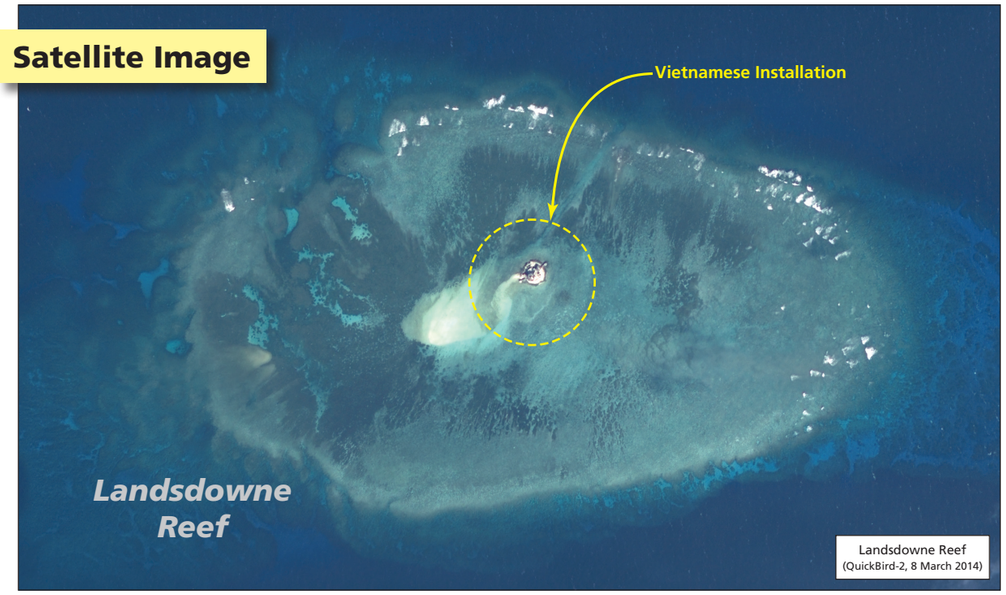
Also known as:

Chinese: Qiong Jiao (琼礁)
Philippine: Pagkakaisa

Coordinate Location: 09°48'00"N - 114°24'00"E
Nearest High Tide Feature: Johnson South Reef, 5.8 M
Distance to Palawan: 184.2 M
Distance to Hainan: 571.0 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam

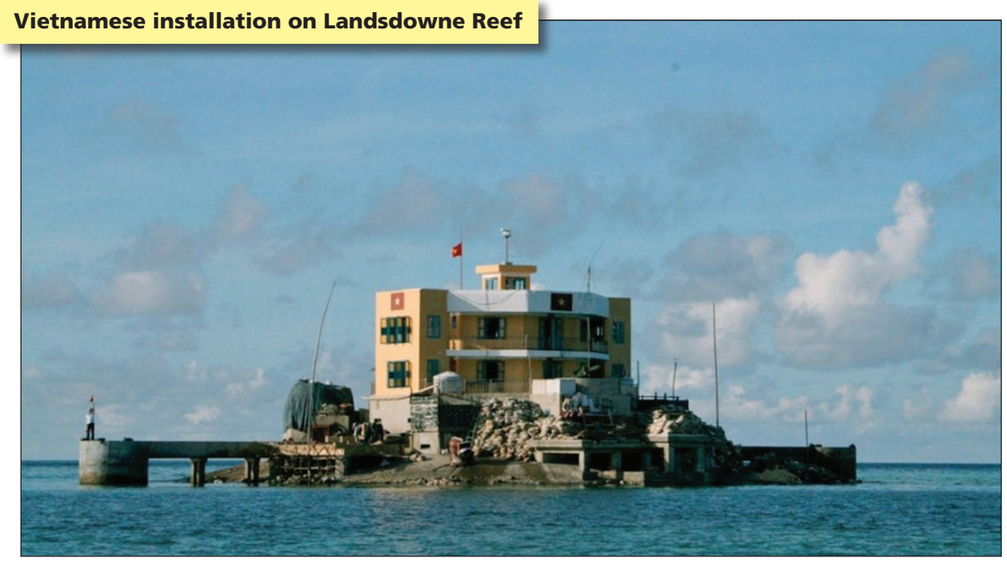


Satellite Image

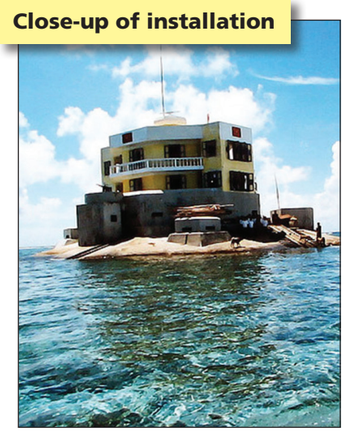


Landsdowne Reef
(QuickBird-2, 8 March 2014)

Vietnamese installation on Landsdowne Reef



Close-up of installation



Vietnamese installation

LANDSDOWNE REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

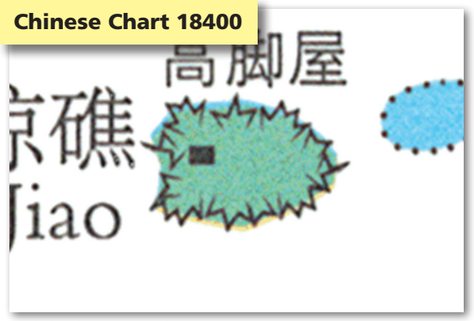
Philippine Chart 4723A

Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

[In relation to] Jiuzhang reef group includes in total 20 individual reef flats. Among these, there are 2 islands (Jinghong Island, Ranqing Sandbank), and 18 reefs. In clockwise order starting from the western end of the reefs, they are Chigua Reef, Guihan Reef, Hua Reef, Jiyang Reef, Jinghong Reef, Nanmen Reef, Ximen Reef, Dongmen Reef, Anle Reef, Changxian Reef, Zhuquan Reef, Niu'e Reef, Ranqingdong Reef, Ranqing Sandbank, Longxia Reef, Bianshen Reef, Jiuzhang Unnamed Reef (to be named), Zhangxi Reef, Quyuan Reef, and Qiong Reef.

Chinese Chart 18400

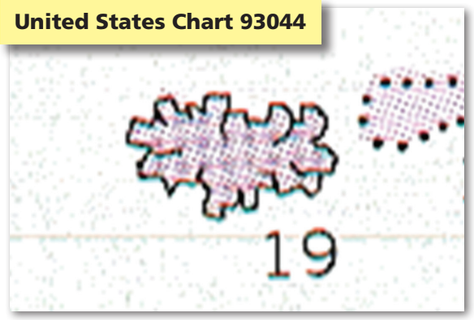


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Lansdowne Reef, a shoal with a white sand dune, lies 6 miles NE of Johnson Reef.

United States Chart 93044

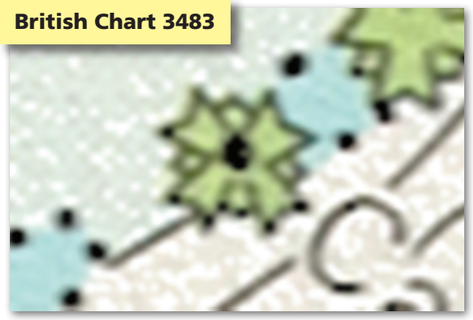


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Not included.

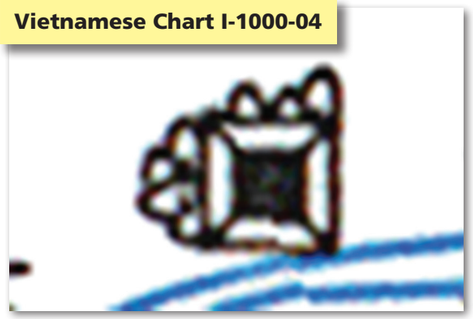
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

LANDSDOWNE REEF
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138

Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Landsdowne Reef is a shoal that, according to the U.S. sailing directions, includes a white sand dune. All the nautical charts depict Landsdowne as a drying reef with no specific feature on it, making it likely that the sand dune referred to in the U.S. sailing directions covers at high tide. The satellite imagery and photographs show that a man-made structure has been built on the central part of the reef, which has a concrete foundation that has been laid in the shallow water. Nothing natural surrounds this structure.

Historical and Anthropological Information

Union Bank and Reefs, of which Landsdowne (or Lansdowne) Reef forms a part:

> were surveyed by HM surveying ship *Herald* in April and May 1931 and all names of features are derived from names of surveying officers aboard *Herald* ... or the church calendar. The *Herald* survey of Union Bank and Reefs has never been published by the Hydrographer of the Navy.[1]

The *Herald*'s survey was conducted "to investigate probable areas for seaplane operations in time of war".[2] Japanese hydrographers also subsequently made "sketch" surveys of several features, including Union Bank, during 1936 and 1937.[3]

The feature was first occupied by Vietnam in 1988, during a military operation that led to the deaths at nearby Johnson South Reef of more than 60 Vietnamese soldiers in a confrontation with China.[4] Vietnamese media reports suggest that clashes also occurred at Landsdowne Reef.[5] Photographs of the Vietnamese installation at Landsdowne Reef show a single yellow building, and what appear to be two piers and at least one antenna.

The Status of the Feature under UNCLOS

Landsdowne Reef is a low-tide elevation under Article 13. It is a drying reef, submerged at high tide. It is 184.2 M from Palawan and 5.8 M from the nearest high-tide feature, Johnson South Reef.

References

[1] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 10 n.1. MP, Vol. VIII, Annex 256.

[2] *Id*., p. 37.

[3] *Id*., pp. 37-38.

[4] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 83. SWSP, Vol. V, Annex 459.

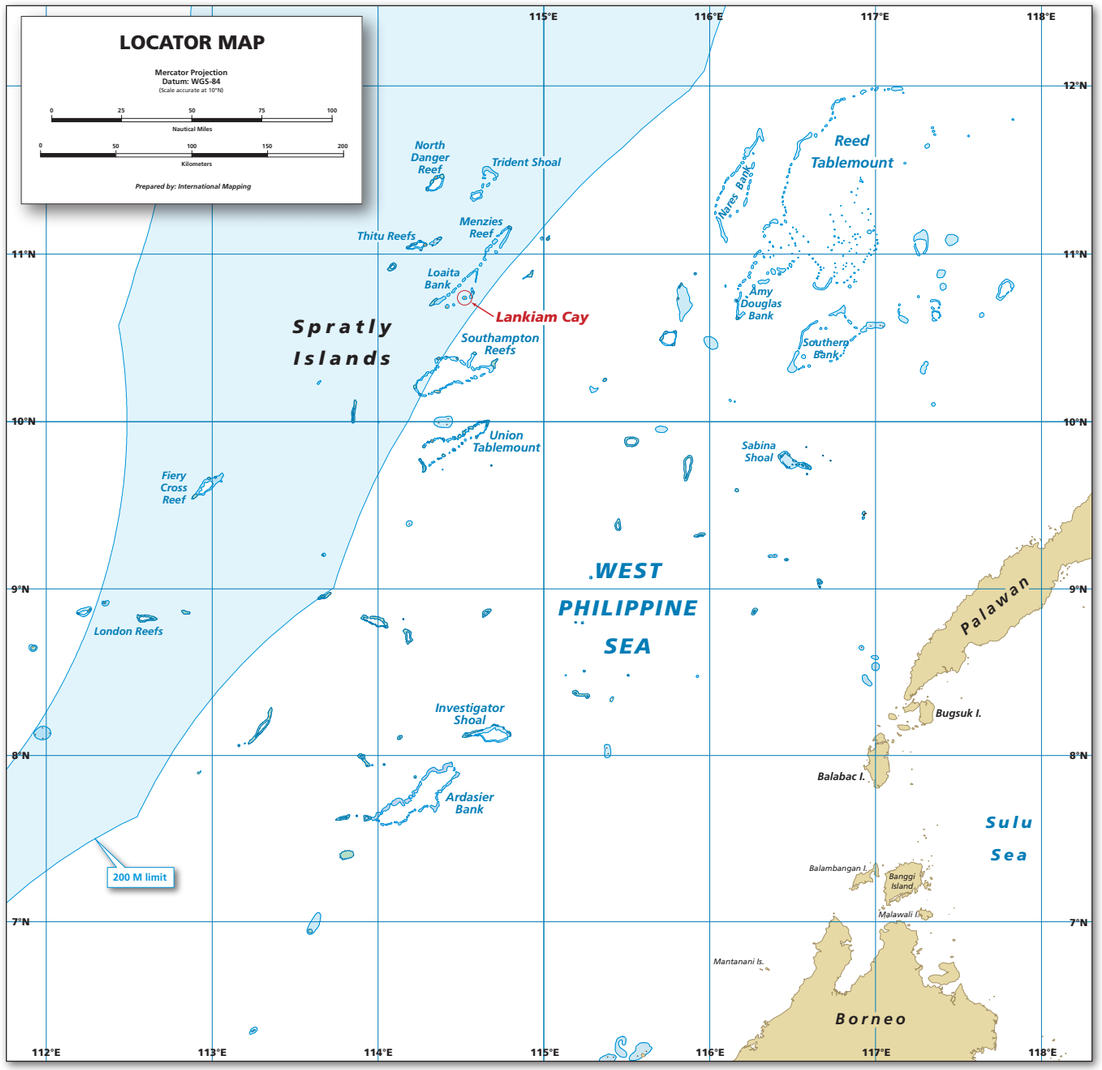
[5] *See, e.g.*, "Deadly fight against Chinese for Gac Ma Reef remembered", *Thanh Nien News* (17 Mar. 2013) ("[T]wo other Vietnamese ships protecting the Len Dao (Lansdowne) and Co Lin (Collins) reefs that were also attacked by Chinese ships managed to hold out".). SWSP, Vol. IV, Annex 425; *see also* "Families of Vietnamese martyrs to visit Truong Sa for memorial", *Thanh Nien News* (26 Jan. 2013) ("The three soldiers died with 61 others on March 14, 1988 when Chinese soldiers launched a military assault against Gac Ma (Johnson South Reef or Chigua Reef), Len Dao (Lansdowne Reef) and Co Lin (Johnson North/Collins Reef) in a flagrant effort to seize the Spratly Islands and gain control over the entire East Sea".). SWSP, Vol. IV, Annex 424.

LANKIAM CAY

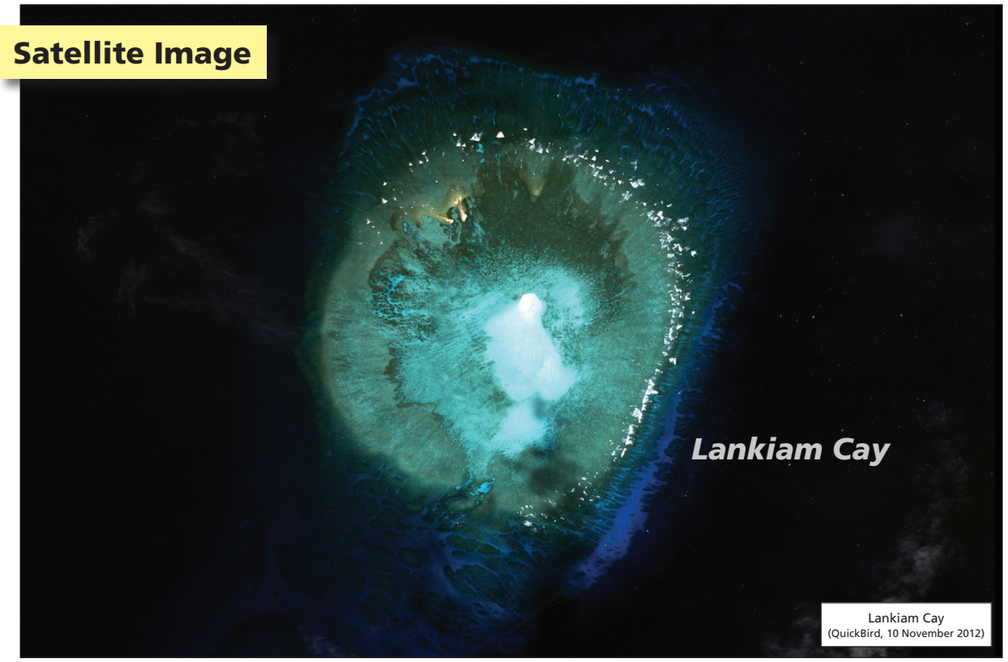
Also known as:

Chinese: Yangxin Shazhou (杨信沙洲)
Philippine: Panata

Coordinate Location: 10°43'00"N - 114°32'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 203.7 M
Distance to Hainan: 526.8 M
Claimed by: China, Philippines, Vietnam
Occupied by: Philippines



Satellite Image



Lankiam Cay
(QuickBird, 10 November 2012)

Aerial view of Lankiam Cay

Structures on Lankiam Cay

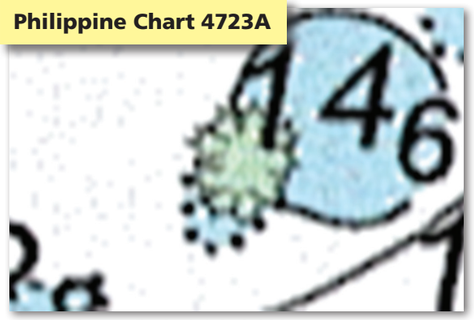
LANKIAM CAY

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

PANATA ISLAND (10° 43' N, 114° 31' E) lies 6.5 miles ENE of Kota Island. It is sandy and situated near the middle of a reef which extends up to 0.5 mile from it in places. Two drying coral reef lie respectively 3 to 4 miles NE of Panata Island. Depths of 11 meters (36ft) and less extends 1 mile N from the latter reef and an 11 meters (36 ft) patch lie 0.5 mile N from the reef situated 3 miles NE. The E edge of Kota Bank extends 8.5 miles N from the last mentioned reef.

Philippine Chart 4723A

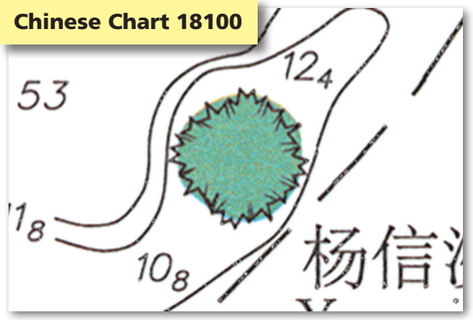


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Yangxin Sandbank - Located approximately 6.5 nautical miles east-northeast of the Nanyao Island, it is located on a reef flat with a diameter of 9 chains. Approximately three nautical miles and four nautical miles northeast of this area is an exposed coral atoll.

Chinese Chart 18100

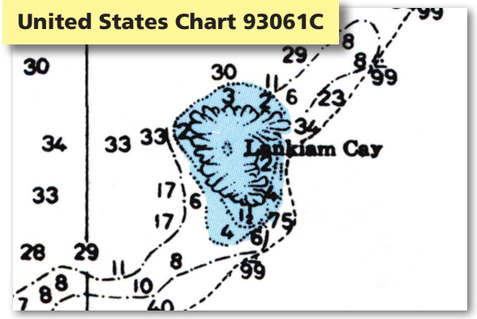


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC25

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

About 2.3 miles ENE of the island is a reef, which partially dries, and 4.5 miles farther to the ENE, lies Lankiam Cay, a sand cay in the middle of another drying coral patch. Two drying reefs lie 3.2 miles ENE and 4.5 miles NE, respectively, from Lankiam Cay.

United States Chart 93061C

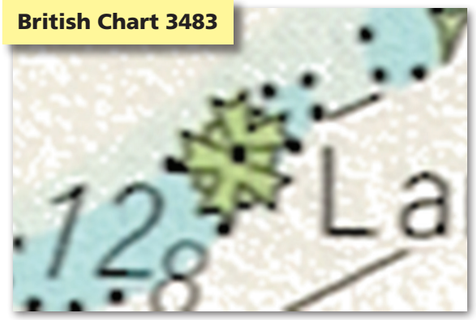


Original Map Scale 1:117,840
Complete chart reproduced as Annex NC50

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Lankiam Cay (10°42'·88N 114°31'·98E). Composed of sand, this cay lies near the middle of a reef which extends up to 5 cables from it in places.

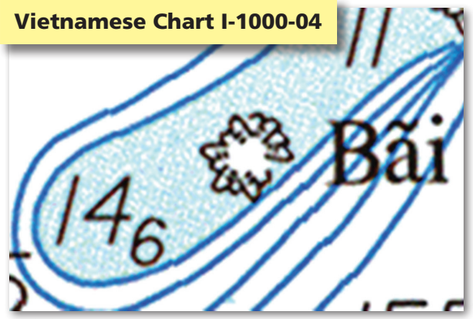
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

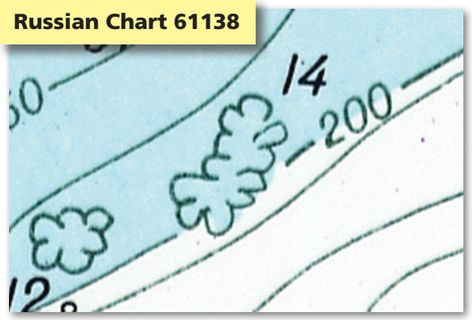
LANKIAM CAY
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Lankiam Cay has a sandy island in the middle of the reef. The Philippine, British, and U.S. sailing directions mention that this sand cay is located in the middle of the reef and the British and U.S. charts depict such a cay. Drying coral reefs are found 3 to 4 M from the cay. Two structures that have been constructed on cement pilings set on the sandy island are seen in satellite imagery and photographs.

Historical and Anthropological Information

In 1899, Lankiam Cay was referred to as a "sand cay ... known to the Hainan fishermen as Lankeeam".[1] Modern sailing directions variously describe Lankiam as being "a sand cay",[2] or "[c]omposed of sand".[3]

The Philippines has been unable to locate any other references to the feature prior to 1978, at which time it was occupied by Philippine armed forces. It has remained under Philippine occupation since then. A government publication indicates that the feature has shrunk since "strong waves brought by typhoons washed out a large portion of the sandy surface of the island leaving behind [a] calcarenite foundation which can be seen during low tides".[4]

The Status of the Feature under UNCLOS

Lankiam Cay is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. This miniscule feature has an area of only 0.0125 km^2. Until its occupation by the Philippines military in 1978, there is no record of any human presence on the feature. The seven Philippines military personnel who are stationed there[5] are dependent upon supplies from the outside. The exposed nature of the feature makes it vulnerable to erosion, and it has been reported that "strong waves brought by typhoons washed out a large portion of the sandy surface of the island leaving behind [a] calcarenite foundation which can be seen during low tides".[6] There is no economic activity on the feature.

LANKIAM CAY

References

[1] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), p. 591. SWSP, Vol. IV, Annex 390.

[2] United States National Geospatial-Intelligence Agency, *Pub. 161 Sailing Directions (Enroute), South China Sea and the Gulf of Thailand* (13th ed., 2011), p. 9. MP, Vol. VII, Annex 233.

[3] United Kingdom Hydrographic Office, Admiralty Sailing Directions: China Sea Pilot (NP31), Vol. 2 (10th ed., 2012), p. 64. MP, Vol. VII, Annex 235.

[4] Republic of the Philippines, Municipality of Kalayaan, *Brochure: Municipality of Kalayaan, Palawan, Philippines*, p. 2. SWSP, Vol. III, Annex 346.

[5] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

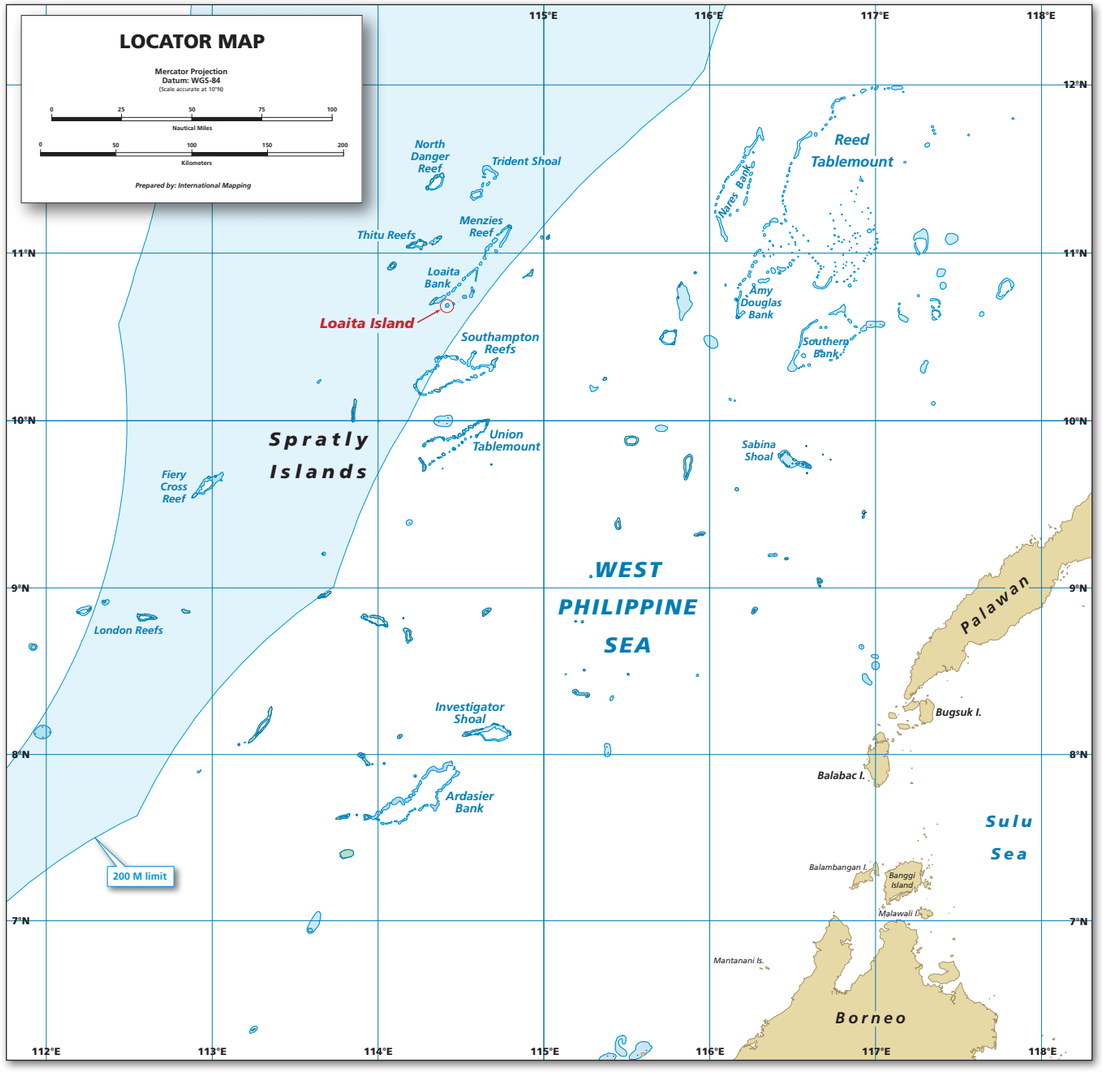
[6] Republic of the Philippines, Municipality of Kalayaan, *Brochure: Municipality of Kalayaan, Palawan, Philippines*, pp. 1-2. SWSP, Vol. III, Annex 346.

LOAITA ISLAND

Also known as:

Chinese: Nanyue Dao (南钥岛)
Philippine: Kota Island

Coordinate Location: 10°40'00"N - 114°25'30"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 207.5 M
Distance to Hainan: 526.1 M
Claimed by: China, Philippines, Vietnam
Occupied by: Philippines



Satellite Image

Loaita Island
(QuickBird, 10 November 2012)

Structures on Loaita Island

LOAITA ISLAND

Sailing Directions and Charts

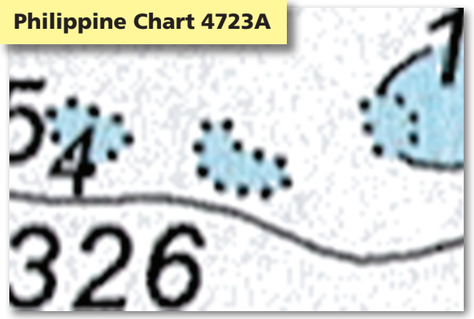
1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Kota Bank is steep-to and consists of a lagoon surrounded by shoals, over which the depths are irregular. On the S edge of the bank there are reefs, on two of which there are cays and on the S most, an island.

Kota Island (10° 41'N, 114° 25'E) 2 meter (6 ft) high, lies at the S end of Kota Bank, 18 miles N of Ligaw Island. The island is covered with mangroves bushes, trees and coconut palms. The island is surrounded by a drying reef.

…A 5.5 meters (18 ft) shoal lies 2 miles W of Kota I; 2 reefs, 1 mile apart in a NE direction, lie 5 miles NW. A 5.5 meters (18ft) shoal lies 0.7 mile E of the SW reef. A sand cay can be found in the middle of the NE reef. In 1868, no depth of less than 7.3 meters (24ft) was found anywhere on the NW edge, NE of the last mentioned reefs. A partly drying coral patch lies 2 miles ENE.

Philippine Chart 4723A

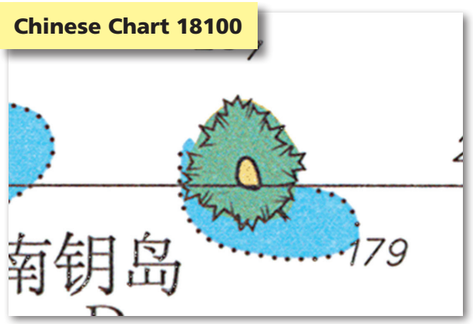


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Nanyue Submerged Shoal is located approximately 18 nautical miles northeast of the Siling Reef, and it is a submerged reef.

Chinese Chart 18100

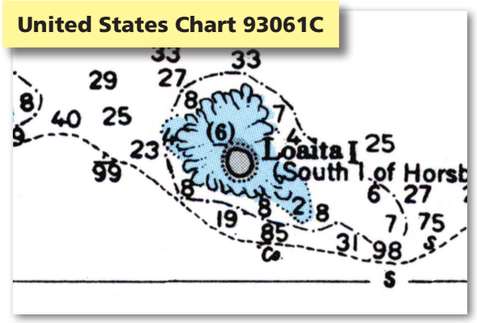


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC25

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Loaita Island (10°41'N., 114°25'E.), 2m high, is on a drying reef at the S edge of Loaita Bank. The island is covered with mangrove, bushes, trees, and coconut palms.

United States Chart 93061C

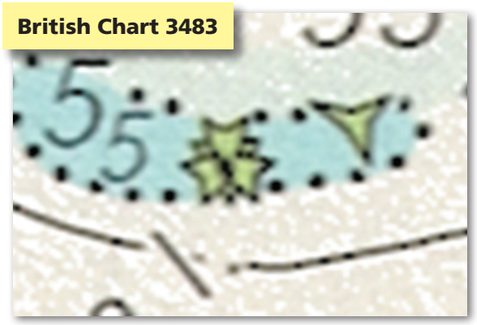


Original Map Scale 1:117,840
Complete chart reproduced as Annex NC50

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Loaita Island is low and covered with mangrove bushes, trees, and coconut palms. It is surrounded by a drying reef. The island is occasionally inhabited by fishermen.

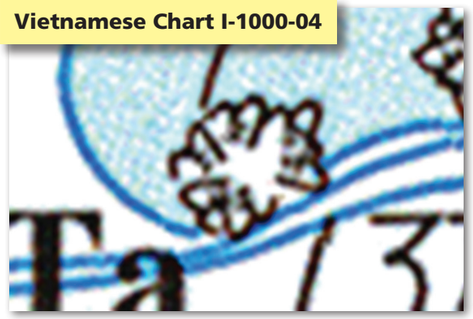
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

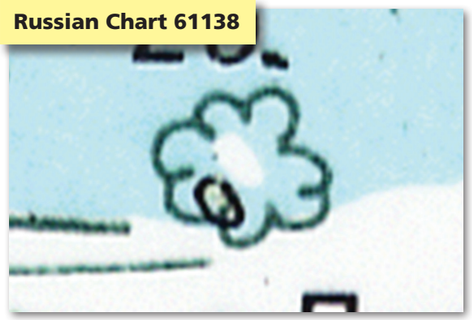
LOAITA ISLAND
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Loaita Island is almost circular with an elevation of approximately 2 metres. According to the Philippine, U.S. and British sailing directions, it is covered with mangrove bushes, trees, and coconut palms and is surrounded on all sides by a drying reef. The island is shown on U.S., British, Chinese, Russian, and Japanese charts. A photograph shows a couple of small buildings on the southeast part of the feature.

Historical and Anthropological Information

The Loaita Bank and Reefs were reported by the British ships *Essex* and *Falmouth* in 1762, and again by the *Dolphin* in 1767.[1] They were surveyed by the *H.M.S. Rifleman* in 1867.[2] Loaita was subsequently described in 1889 as a "low sand island, covered with bushes, and only 1[1/2] cable [228 metres] in diameter".[3] U.S. sailing directions from 1915 describe Loaita as "a sand cay, 300 yards in diameter, covered with bushes".[4]

France first claimed Loaita and several other features in the early 1930s. The British Admiralty rejected the claim in February 1933, concluding it had "no basis in international law and call[ing] for a strong protest without any further delay".[5] In opposing France's claim, the Admiralty observed that "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[6]

French records indicate that in April 1933 the captain of the frigate *Laperouse* "took possession of the small island named Loaita" on behalf of France.[7] The same year, France formally claimed Loaita and several other features,[8] attaching them to the Baria Province.[9] In July 1933, *The New York Times* reported that Loaita formed "part of a large group of dots on the ocean which are fragments of coral reefs and rise not more than eight feet above the sea".[10] It cited U.S. State Department officials as suggesting "that they had never even heard of the islands [claimed by France] until mention of them was made in press dispatches".[11]

Shortly thereafter, *The New York Times* reported that Loaita (as well as Thitu and Itu Aba), "belonged to no one until the captain of the *Astrolabe* formally claimed them for France on April 7 and buried below a carved stone on each of them a bottle containing an account of how they passed into French possession". The features were, according to the article:

> almost entirely uninhabited, except for a few Chinese engaged in turtle fishing, although the Japanese claim they have for some time been engaged in exploiting a superficial layer of phosphate on some of the islands.[12]

British Sailing Directions from 1937 state that "[t]he island was deserted in 1933, but [that] there were traces of recent habitation, and also a temporary beacon".[13]

A Japanese memorandum delivered to the United States suggests that France "again claimed [] sovereignty" over Loaita Island in 1937.[14] Loaita and several other features were annexed by Japan in 1939.[15]

Loaita Island was unoccupied after World War II, until Philippine armed forces arrived in July 1971.[16] It has been occupied by the Philippines continuously since then. The feature currently houses two structures, an antenna and a solar panel. The feature does not have a harbour or jetty for larger ships, "so supplies have to be loaded onto small boats and ferried to shore".[17]

The Status of the Feature under UNCLOS

Loaita Island is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. This 2 metres high feature, which is surrounded on all sides by a drying reef, has an area of only 0.1317 km^2. Although Loaita was occasionally visited by fishermen, it has never had an indigenous or permanent human settlement. It was occupied by the Philippines military in 1971. The seven military personnel stationed on the feature are dependent upon outside supply. There is no economic activity on the feature.

[1] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign

Affairs, United Kingdom (23 Feb. 1933), p. 4. SWSP, Vol. III, Annex 364.

[2] *Id*.

[3] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), p. 590. SWSP, Vol. IV, Annex 390.

[4] U.S. Hydrographic Office, *Asiatic Pilot: The Shores of the China Sea from Singapore Strait to and including Hongkong*, Vol. IV (1915), p. 111. SWSP, Vol. IV, Annex 394.

[5] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), para. 11. SWSP, Vol. III, Annex 363.

[6] *Id*., para. 12.

[7] French Republic, Indochina Hydrographic Mission, *Procès-Verbal* (11 Apr. 1933). SWSP, Vol. III, Annex 367.

[8] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[9] French Republic, Governor of Cochin China, *Decree* (21 Dec. 1933), *reprinted in* Monique Chemillier-Gendreau, *Sovereignty over the Paracel and Spratly Islands*. SWSP, Vol. III, Annex 352.

[10] [Untitled Article], *New York Times* (30 July 1933). SWSP, Vol. IV, Annex 400.

[11] [Untitled Article], *New York Times* (30 July 1933). SWSP, Vol. IV, Annex 400.

[12] P.J. Philip, "Barren Coral Isles in Pacific Cause International Dispute", *New York Times* (27 Aug. 1933). SWSP, Vol. IV, Annex 401.

[13] United Kingdom, Hydrographic Department, *China Sea Pilot*, Vol. I (1st ed., 1937), p. 117. SWSP, Vol. IV, Annex 397.

[14] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[15] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[16] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

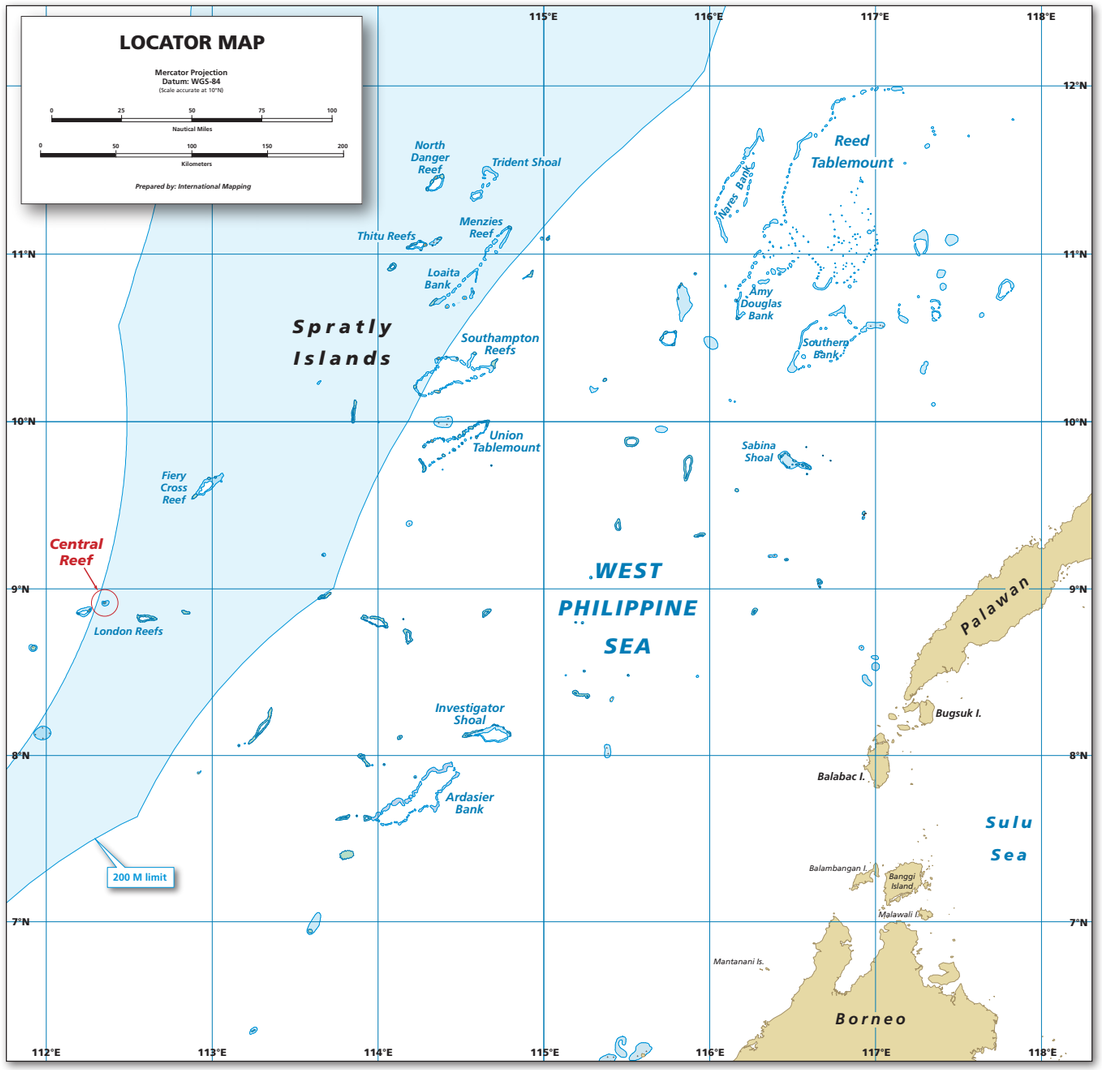
[17] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 104. SWSP, Vol. V, Annex 459.

LONDON REEFS: CENTRAL REEF

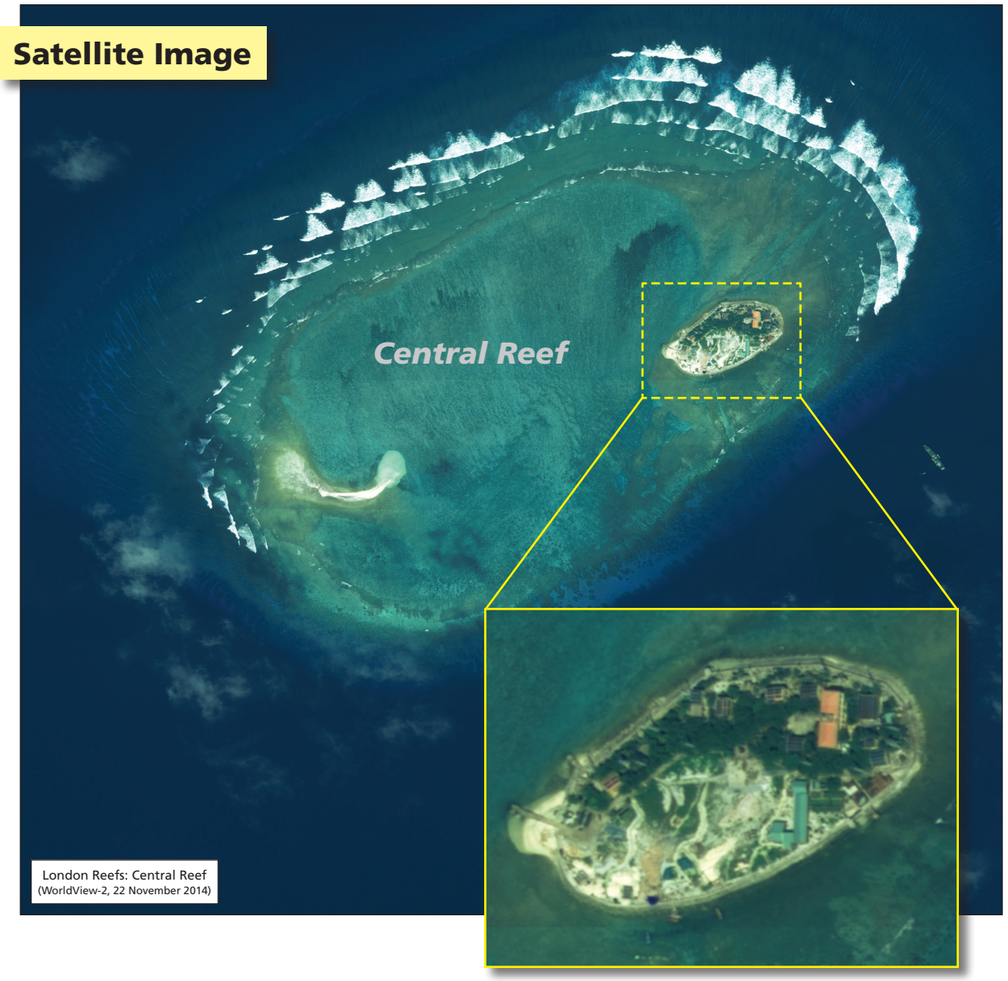
Also known as:

Chinese: Zhong Jiao (中礁)
Philippine: Gitnang Quezon

Coordinate Location: 08°55'00"N - 112°21'00"E
Nearest High Tide Feature: West Reef (London Reefs), 6.3 M
Distance to Palawan: 278.0 M
Distance to Hainan: 574.0 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Satellite Image



London Reefs: Central Reef
(WorldView-2, 22 November 2014)

Central Reef from the sea

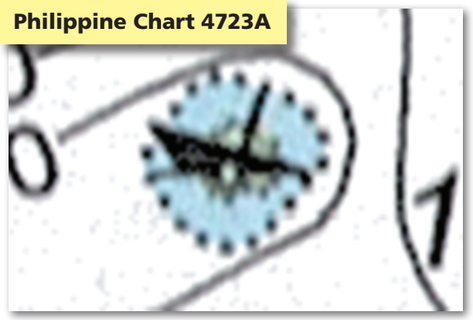
LONDON REEFS: CENTRAL REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

Philippine Chart 4723A

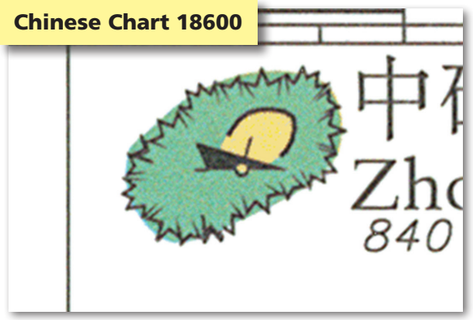


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Not included.

Chinese Chart 18600

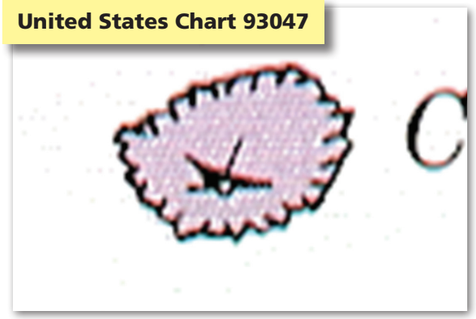


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC24

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Central Reef (8°55'N., 112°21'E.) lies 14 miles NW of East Reef. Although awash, it is not always marked by breakers. At the SE part of the reef there is an entrance to a shallow lagoon and at the E and SW ends of Central Reef lie two small, white sand cays.

United States Chart 93047

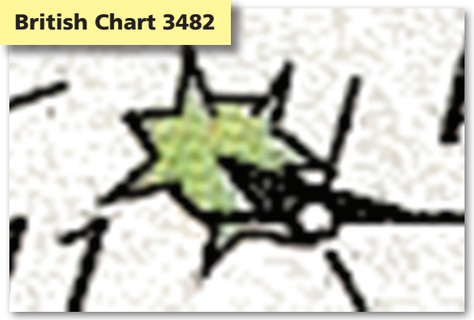


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

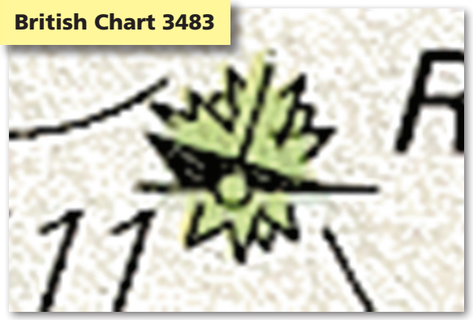
Central Reef (8°55'·92N 112°20'·97E), which consists of a belt of coral, awash, surrounding a lagoon in which there are depths of 7 to 15 m. A sandbank, reported to cover at HW springs, lies on the SW extremity of the reef. Central Reef is not always marked by breakers. A stranded wreck lies on the S side of the reef.

British Chart 3482



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC48

British Chart 3483



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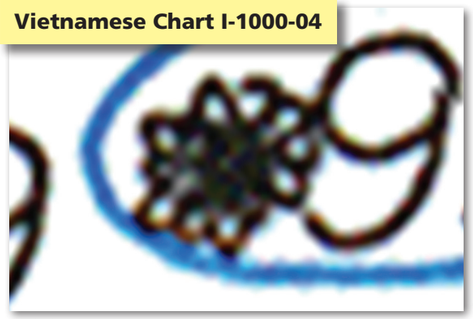
Complete chart reproduced as Annex NC1

LONDON REEFS: CENTRAL REEF

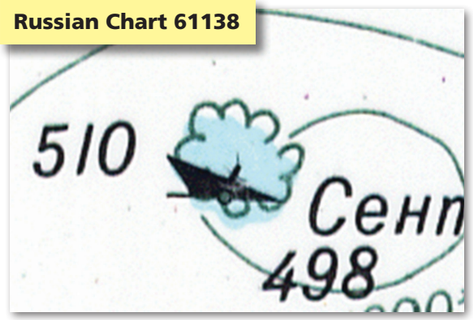
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



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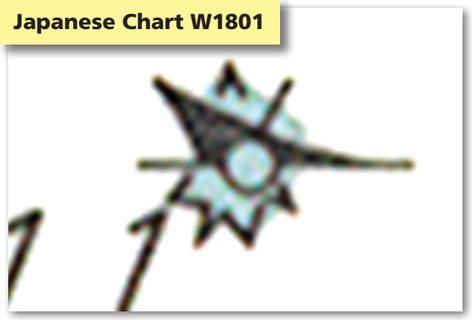
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

London Reef (Central London Reef) is the central reef of the London Reefs. It has a lagoon that is surrounded by coral and rocks that are awash, just at the surface of the water, at low water. There is a sandbank on the southwest extremity of the reef that the British sailing direction reports covers at high water. The nautical charts show a shipwreck located in the central part of the reef. Although the Chinese chart appears to depict a feature above water at high tide, it is most likely the man-made structure seen in the satellite imagery at approximately the same location. None of the seven other charts show this feature. In light of these charts and the British sailing directions, the feature likely covers at high tide. Several structures on the reef can be seen in satellite imagery and photographs. The foundation for these structures have been set on the shallow water sea floor.

Historical and Anthropological Information

Central London Reef was described in 1879 as follows:

> CENTRAL LONDON REEF… was discovered by the *Rifleman* whilst sounding between the East and West London reefs. It is a coral patch, awash, half a mile in extent, with a shallow lagoon inside the belt of coral. On the south-west extreme of the reef is a sandy cay, 60 or 70 yards in circumference, which is probably covered at high-water springs.
>
> This is a dangerous reef, and lies directly in the track of vessels working up or down the China sea. Being small, it is not marked by breakers, like those which so readily point out the positions of East and West London reefs.
> CAUTION. - Like most dangers in the China sea, the Central London reef is surrounded by deep water, thus rendering the lead useless; great caution is therefore necessary when navigating in their vicinity, and not to stand towards them with the sun shining ahead, as under these circumstances it becomes almost impossible to distinguish shoal water or breakers.[1]

As with the West and East London Reefs, when France claimed Central London Reef in the early 1930s, the British Admiralty rejected the claim.[2]

No record has been found of any human habitation prior to its occupation by Vietnamese armed forces in 1978.

The Status of the Feature under UNCLOS

Central London Reef is a low-tide elevation under Article 13. It is a lagoon that is surrounded by coral and rocks that are awash, barely at the surface of the water, at low water. According to the British sailing directions, there is a sandbank on the southwest extremity of the reef that covers at high water. None of the 8 charts indicate the existence of any naturally formed area of land above water at high tide. There is no record of human settlement. It is 278.0 M from Palawan and 6.3 M from the nearest high-tide elevation, West Reef (London Reefs).

LONDON REEFS: CENTRAL REEF

References

[1] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 62. SWSP, Vol. IV, Annex 389.

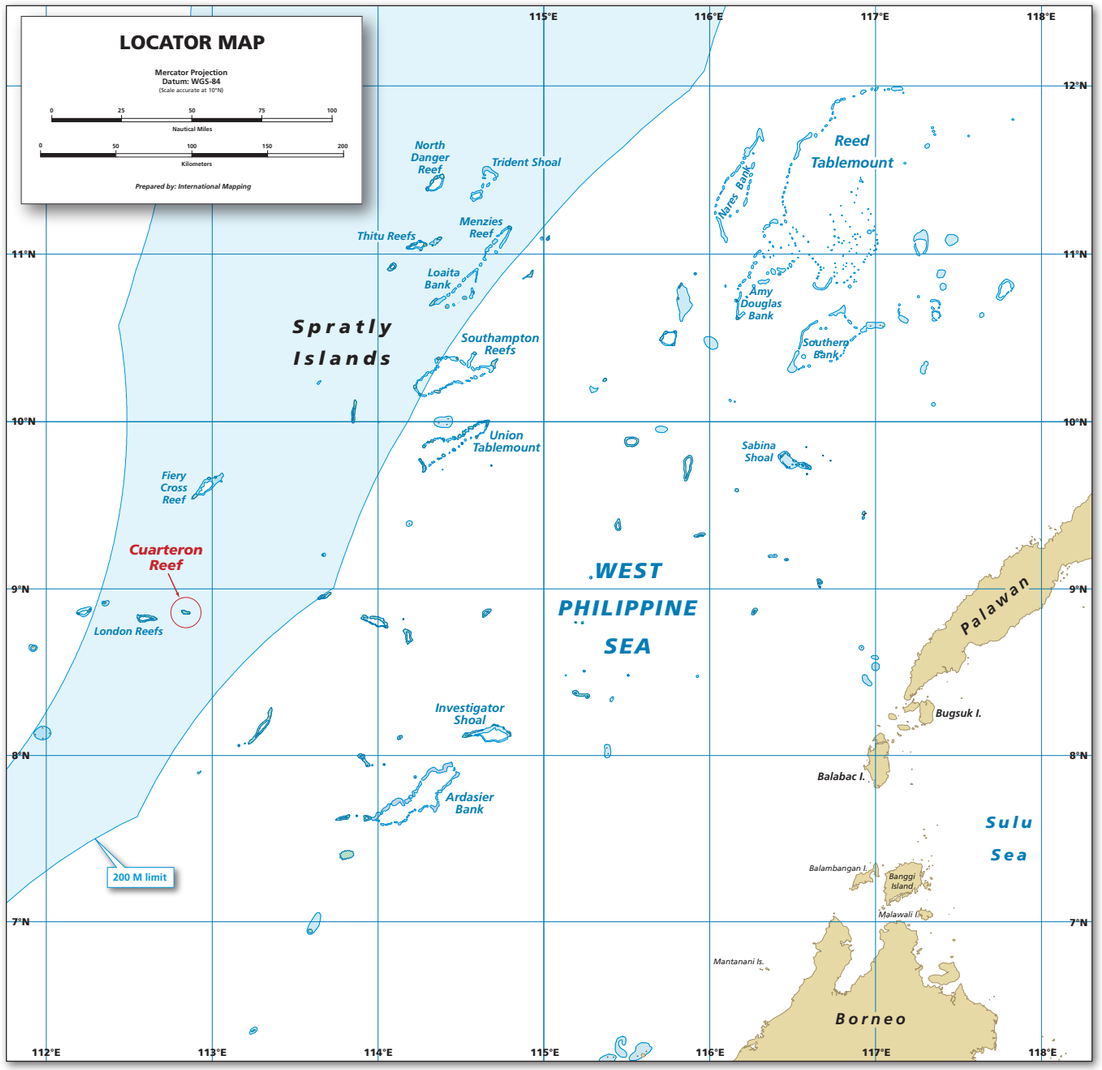
[2] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933). SWSP, Vol. III, Annex 363.

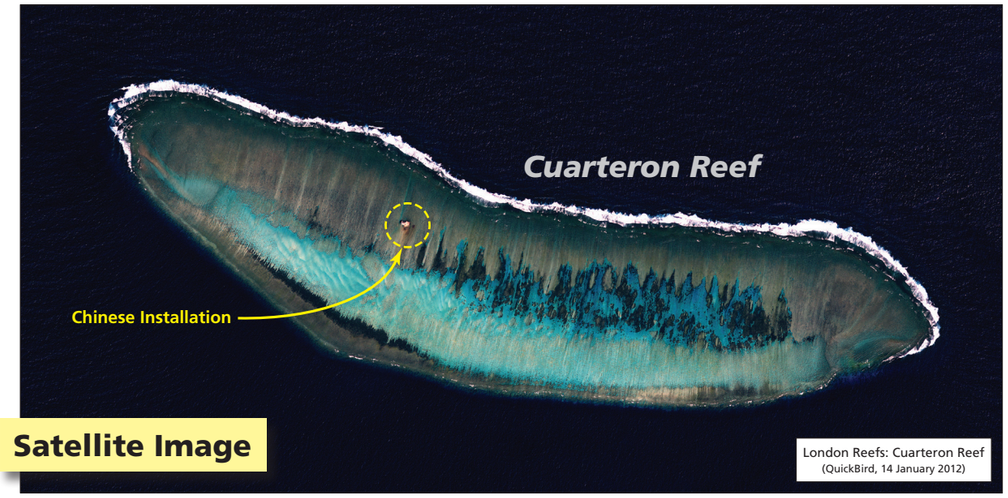
LONDON REEFS: CUARTERON REEF

Also known as:

Chinese: Huayang Jiao (华阳礁)
Philippine: Calderon Reef

Coordinate Location: 08°51'30"N - 112°50'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 247.8 M
Distance to Hainan: 585.5 M
Claimed by: China, Philippines, Vietnam
Occupied by: China

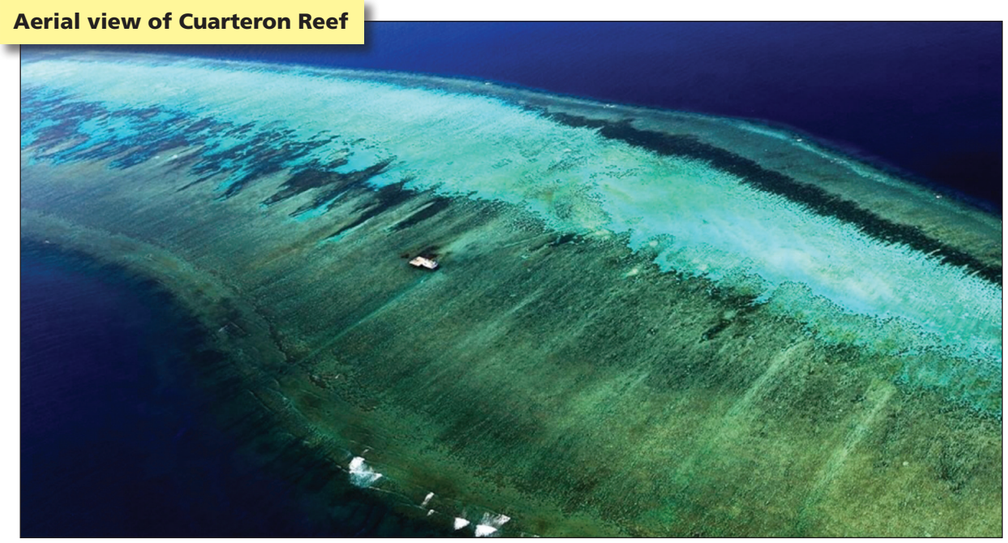




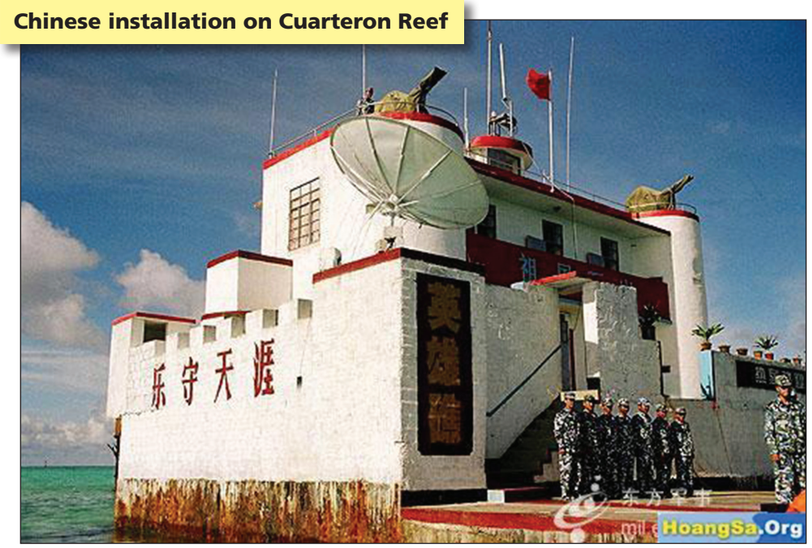
Satellite Image

London Reefs: Cuarteron Reef
(QuickBird, 14 January 2012)

Aerial view of Cuarteron Reef



Chinese installation on Cuarteron Reef



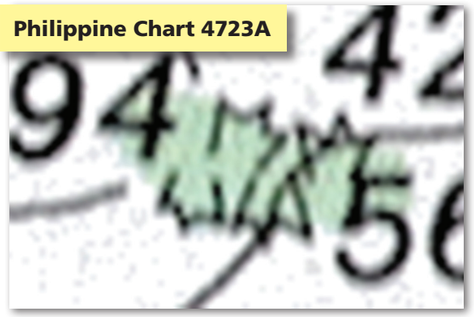
LONDON REEFS: CUARTERON REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

CALDERON REEF (8˚ 53' N, 112˚ 50' E) E of Silangan Reef and is encumbered by rocks especially on its N side, where some are from 1 meter to 2 meters (4 to 5 ft) high. Anchorage may be obtained in a depth of 27 meters (15 fms) on the N side; the S side is steep-to.

Philippine Chart 4723A

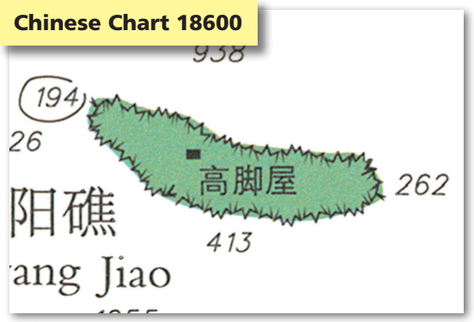


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Huayang Reef - Approximately 40 nautical miles slightly westerly of due north from the Yongshu Reef is the easternmost part of the Yinqing Reefs. It is an independent table-like reef with no lagoon in the center of the reef flat. It appears to be trending toward the east and west. During high tide it is submerged. During spring tide and low tide, it is exposed, and its middle part is low and flat.

Chinese Chart 18600



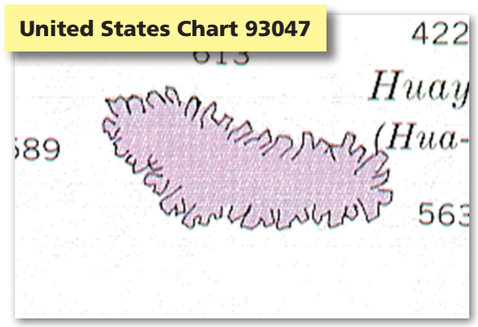
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC24

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Cuarteron Reef is the easternmost of the London Reefs. Several rocks, 1.2 to 1.5m high, lie on the N side of the reef.

The shallow lagoon within the reef has no entrance.

United States Chart 93047



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Cuarteron Reef (8°52'·19N 112°50'·61 E) is encumbered by rocks, especially on its N side where some are 1 to 2 m high. There is no lagoon.

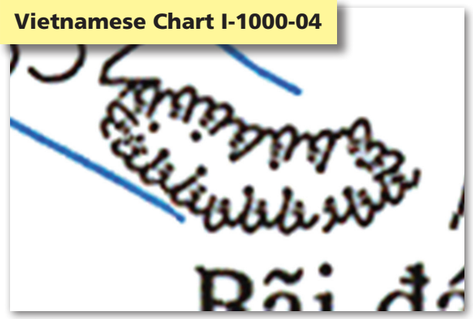
British Chart 3483

Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

LONDON REEFS: CUARTERON REEF

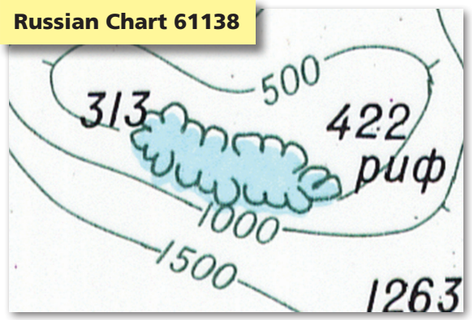
Additional Charts

Vietnamese Chart I-1000-04



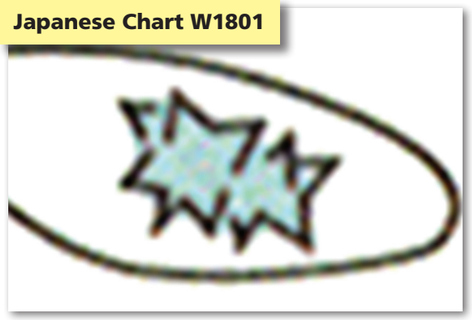
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage
stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

London Reef (Cuarteron Reef). Several sailing directions note there are many rocks on the north side of the reef, some 1 to 2 metres high, although the Chinese sailing directions report that at high tide the reef is submerged. The Chinese and Vietnamese nautical charts depict an undefined black feature (rectangular on the Chinese chart and round on the Vietnamese chart) in the middle of the reef. These likely represent the man-made structure that can be seen on the satellite imagery and photographs. This structure was built by establishing a foundation on the submerged seafloor; it is surrounded by water with no vegetation in the area.

The Status of the Feature under UNCLOS

Cuarteron Reef is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. As detailed in paragraphs 5.91-5.92 of the Memorial, the Chinese sailing directions and all nautical charts describe the reef as being submerged at high tide and therefore only a low-tide elevation.[1] Other sailing directions note that the northern edge of the reef has at least one rock protruding approximately 1-2 metres above water.[2] There is no vegetation, and no record of any human activity prior to its occupation by China in 1988.[3] The Chinese armed forces, who are present there to support China's sovereignty claim, are dependent upon supplies from the outside. No economic activity takes place on the reef.

LONDON REEFS: CUARTERON REEF

References

[1] Navigation Guarantee Department of the Chinese Navy Headquarters, China Sailing Directions: South China Sea (A103) (2011), p. 178. MP, Vol. VII, Annex 232. *See also* Philippine National Mapping and Resource Information Authority, *Chart No. 4723(A) (Kalayaan Island Group and Recto Bank including Bajo De Masinloc)* (2011). SWSP, Annex NC5; Navigation Guarantee Department of the Chinese Navy Headquarters, *Chart No. 18600 (Yinqing Qunjiao to Nanwei Tan)* (2012). SWSP, Annex NC24; United States Defense Mapping Agency, *Chart No. 93047 (South China Sea: Yongshu Jiao to P'o-Lang Chiao)* (1984). SWSP, Annex NC55; United Kingdom Hydrographic Office, *Chart No. 3483 (South China, Sulu and Celebes Seas; Mindoro Strait to Luconia Shoals and Selat Makasar)* (2002). SWSP, Annex NC1; Vietnamese People's Navy, *Chart No. I-1000-04 (Cam Ranh - Quần Đảo Trường Sa)* (2008). SWSP, Annex NC64; Russian Main Department of Navigation and Oceanography, *Chart No. 61138 (South China Sea: 7°01'N to 11°30'N, 112°12'E to 115°35'E)* (2007). SWSP, Annex NC40; and Japan Coast Guard, *Chart No. W1801 (South China Sea: Southern Portion, Eastern Sheet)* (2008). SWSP, Annex NC11.

[2] Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995), p. 16-72. MP, Vol. VII, Annex 230. *See also* United States National Geospatial-Intelligence Agency, *Pub. 161 Sailing Directions (Enroute), South China Sea and the Gulf of Thailand* (13th ed., 2011), p. 11. MP, Vol. VII, Annex 233; and United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (UKHO, *China Sea Pilot*), p. 65. MP, Vol. VII, Annex 235.

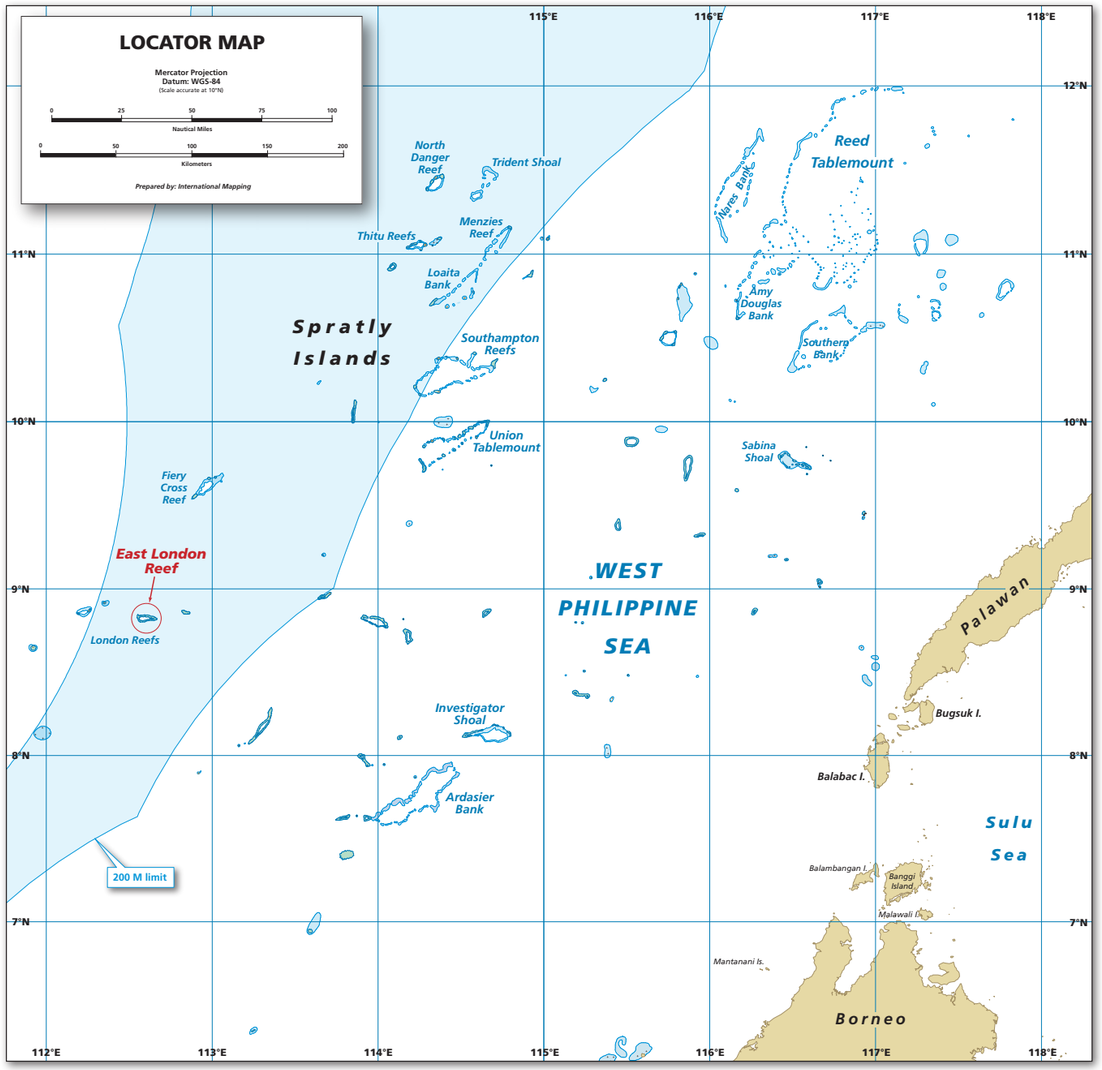
[3] Armed Forces of the Philippines, *Matrix of Events: Cuarteron (Calderon) Reef* (2013). MP, Vol. IV, Annex 87.

LONDON REEFS: EAST REEF

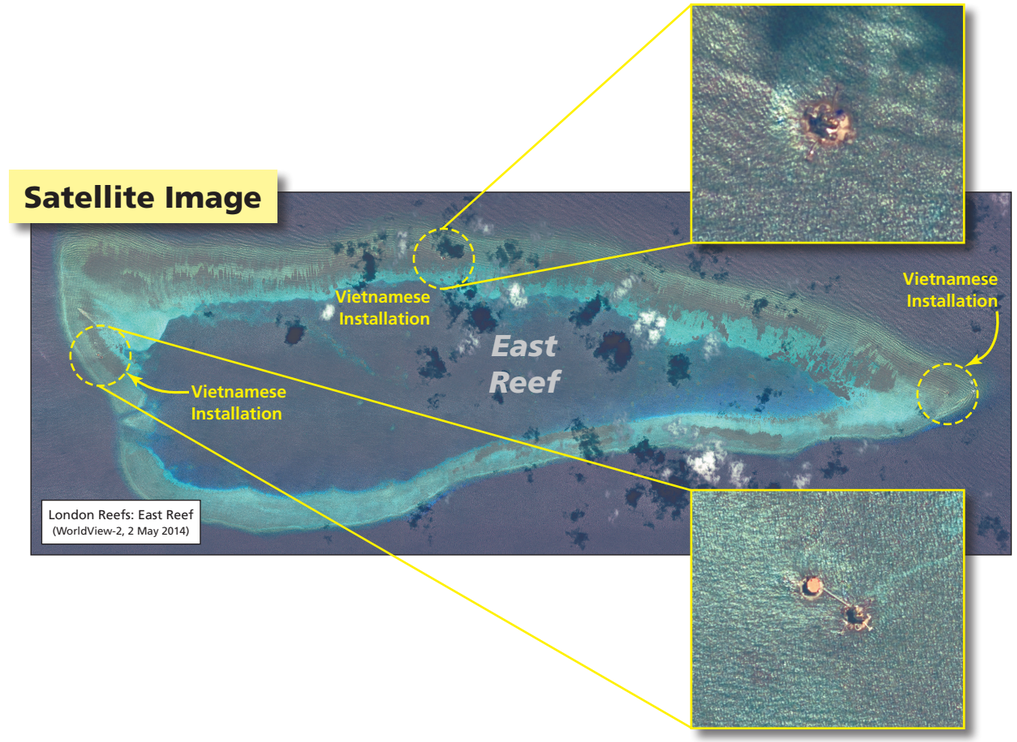
Also known as:

Chinese: Dong Jiao (东礁)
Philippine: Silangan

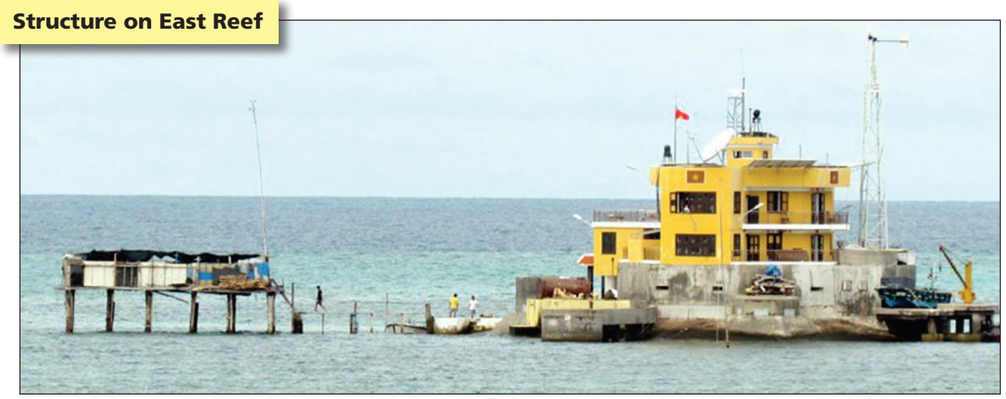
Coordinate Location: 08°49'00"N - 112°36'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 258.8 M
Distance to Hainan: 582.5 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Satellite Image



Structure on East Reef



Vietnamese installation on East Reef

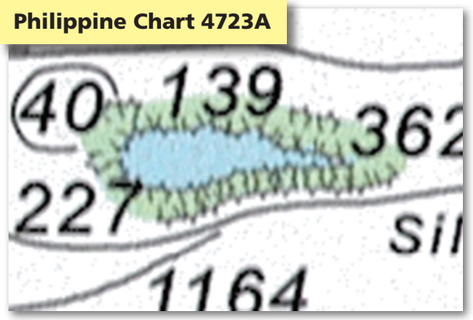
LONDON REEFS: EAST REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

Philippine Chart 4723A

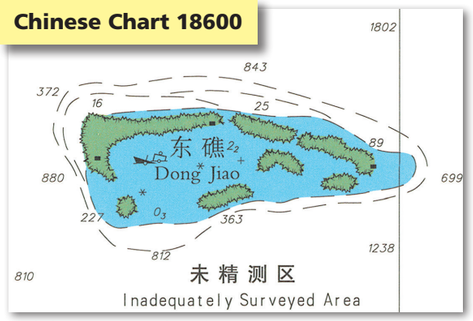


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Not included.

Chinese Chart 18600



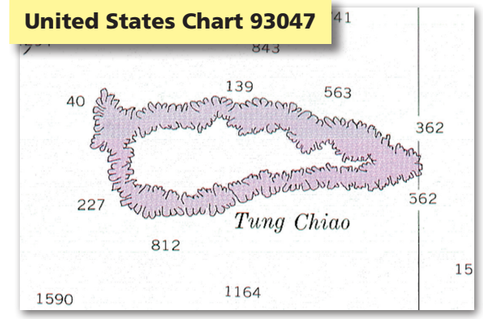
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC24

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

East Reef (8°50'N., 112°35'E.) encloses a lagoon with depths of 7.3 to 14.6m and lies about 16 miles WSW of Cuarteron Reef. Numerous coral heads encumber the lagoon.

A sharp rock, 0.9m high, lies near the W end of the reef; more rocks are visible at the E and S parts of the reef. East Reef is marked by heavy breakers.

United States Chart 93047

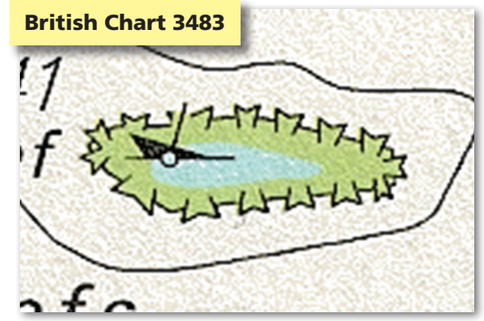


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

East Reef (8°50'·33N 112°31'·39E), which consists of a reef-enclosed lagoon to which there is no known entrance. There are depths of 7 to 15m in the lagoon. There are one or two rocks on the W extremity of East Reef, which seldom cover, even though the sea breaks heavily on the reef.

British Chart 3483

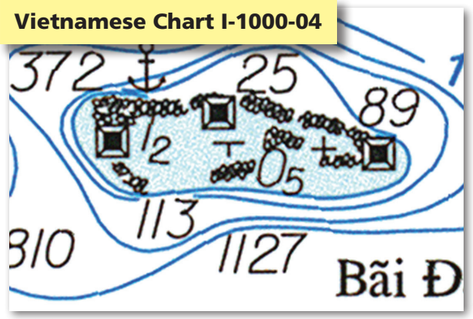


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

LONDON REEFS: EAST REEF

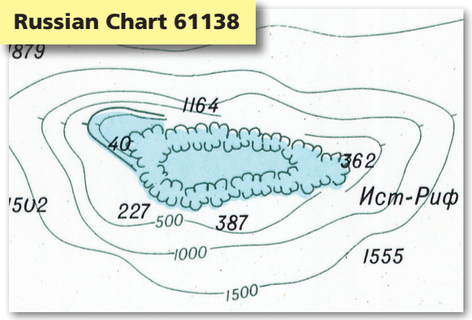
Additional Charts

Vietnamese Chart I-1000-04



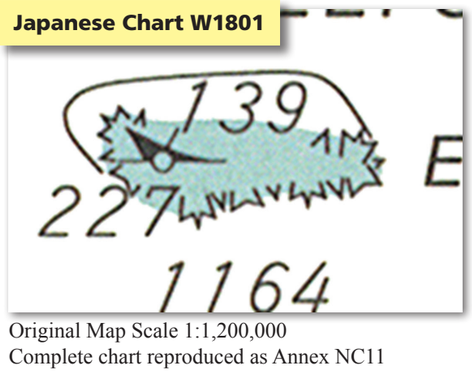
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



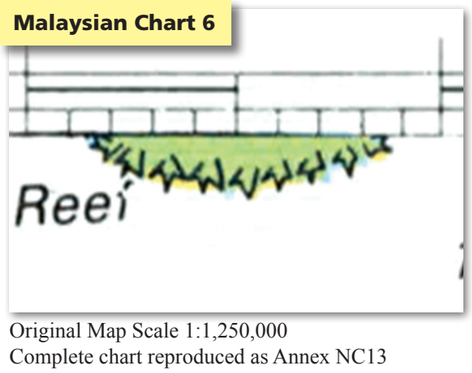
Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 6



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Geographic/Hydrographic Observations by Dr. Robert Smith

London Reef (East London Reef) encloses a lagoon to which there is no entrance. There are one or two rocks on the western side of the reef that, according to the British sailing directions, seldom cover, even though the sea breaks heavily on the reef. The U.S. sailing directions mention a "sharp rock, 0.9 m high" that is visible. On the Chinese nautical chart, the reef is shown as broken into 7 reefs with two undefined black squares shown on the northwest reef and one on the easternmost reef. The Vietnamese nautical chart also depicts the reef as multiple reefs and shows 3 black squares. These symbols likely represent several man-made structures that are on the reef. The satellite imagery and photographs show three installations on the eastern, northern, and western fringe of the reef. They have been built in the reef's shallow waters.

Historical and Anthropological Information

East London Reef was seen by the *London* in 1786, and described in 1879 as follows:

> EAST LONDON REEF is 7 miles long, east and west, form one to 2 miles broad… The coral round it edges encloses a lagoon, having 4 to 8 fathoms water. No entrance into the lagoon could be discovered, but there are apparently numerous shoal patches inside. The sea breaks heaving on the reef, and on its western extreme are one or two rocks which seldom cover. No soundings could be obtained with 100 fathoms of line at one mile from where the coral dries, nor with 500 fathoms at 2 miles north of it.[1]

Like West London Reef, when France claimed the feature in the early 1930s,[2] the claim was rejected by the British Admiralty.[3]

No record of human habitation has been found prior to 1988, when Vietnamese armed forces occupied East London Reef.[4]

The Status of the Feature under UNCLOS

East London Reef is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. This feature has only a small number of rocky protrusions. There is no record of any human settlement on East London Reef prior to its occupation by the Vietnamese military in 1988.[5] Those stationed there are dependent upon outside support. There is no economic activity reported on East London Reef.

LONDON REEFS: EAST REEF

References

[1] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), pp. 62-63. SWSP, Vol. IV, Annex 389.

[2] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933). SWSP, Vol. III, Annex 363; United Kingdom, *Draft Memorandum* (undated). SWSP, Vol. III, Annex 355.

[3] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933). SWSP, Vol. III, Annex 363.

[4] Jianming Shen, "International Law Rules and Historical Evidences Supporting China's Title to the South China Sea Islands", *Hastings International & Comparative Law Review*, Vol. 21, No. 1 (1997-1998), p. 56. MP, Vol. VII, Annex 260. Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

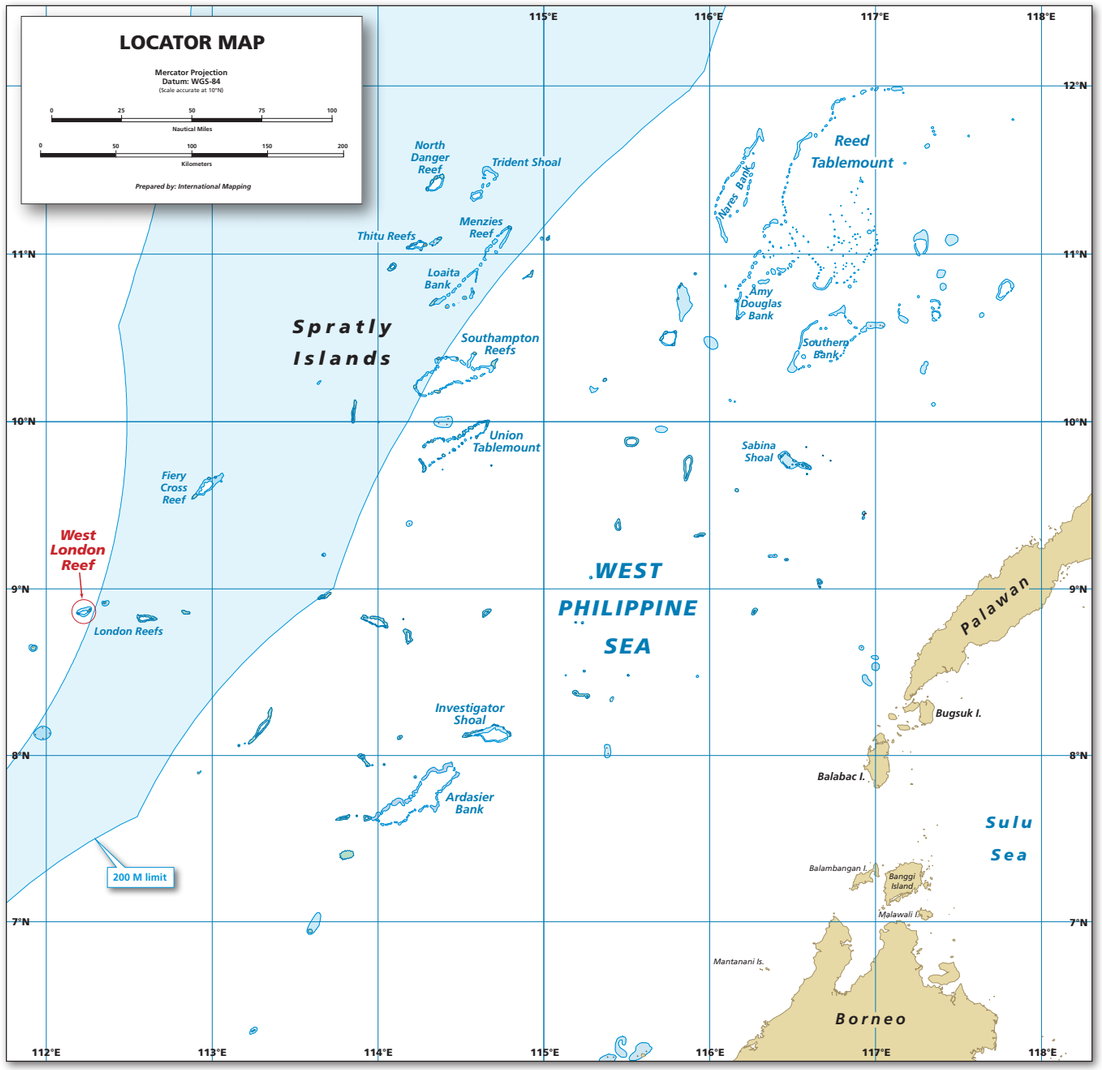
[5] Jianming Shen, "International Law Rules and Historical Evidences Supporting China's Title to the South China Sea Islands", *Hastings International & Comparative Law Review*, Vol. 21, No. 1 (1997-1998), p. 56. MP, Vol. VII, Annex 260. See also Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

LONDON REEFS: WEST REEF

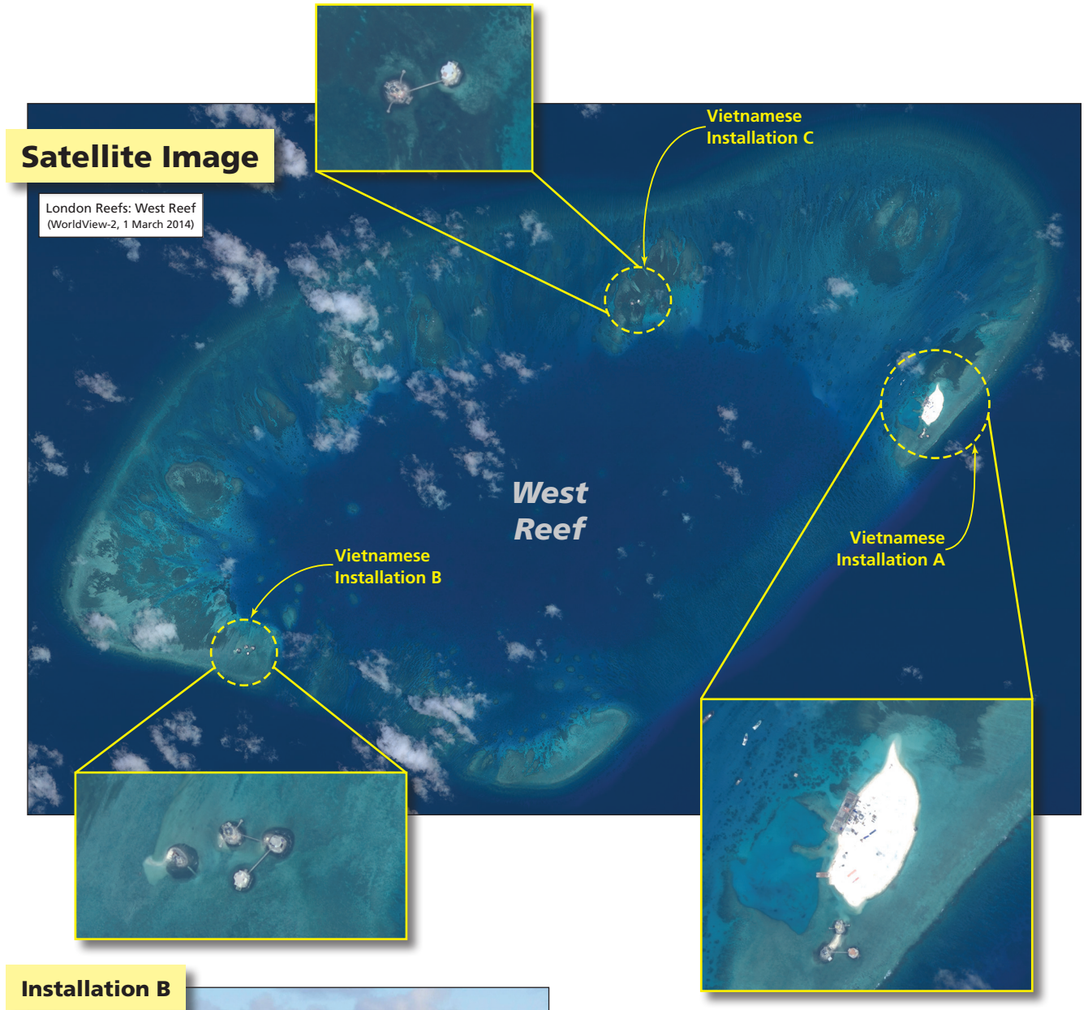
Also known as:

Chinese: Xi Jiao (西礁)
Philippine: Kanlurang Quezon

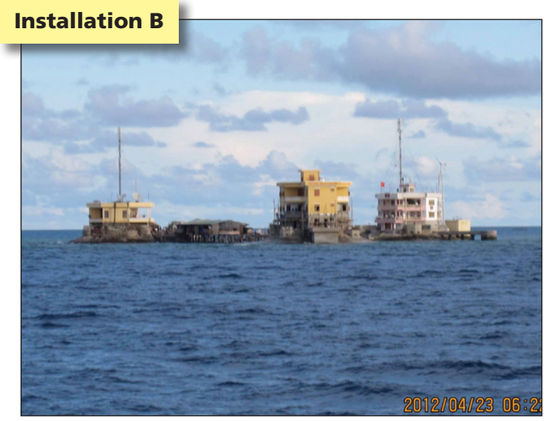
Coordinate Location: 08°51'00"N - 112°12'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 282.5 M
Distance to Hainan: 574.9 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



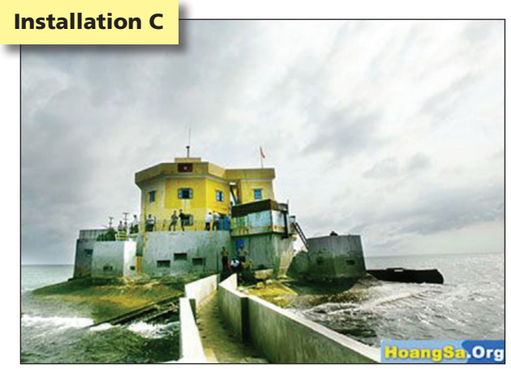
Satellite Image



Installation B



Installation C



Vietnamese Installation A on West Reef

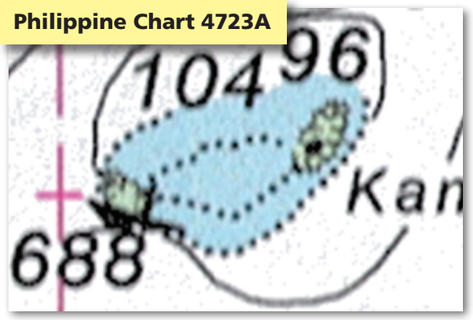
LONDON REEFS: WEST REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

Philippine Chart 4723A

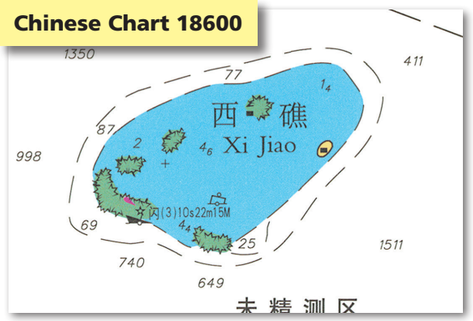


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Not included.

Chinese Chart 18600



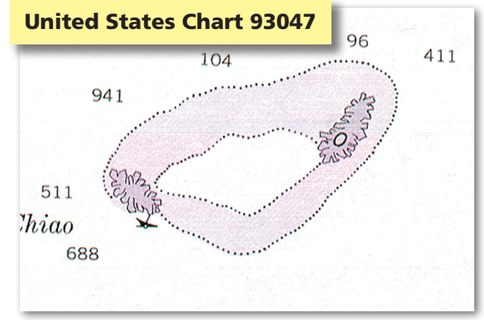
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC24

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

West London Reef (Hsi Chiao), the westernmost danger of London Reefs, is marked by a light and has several detached coral patches around its edges. The N side of the reef is marked by breakers making it visible on the approach from the N, but the S side is difficult to make out, especially in calm weather.

There is a sand cay, 0.6m high, on the E side of the reef. A lagoon, with depths of 11 to 14.6m but having many coral heads, is enclosed by West Reef.

United States Chart 93047

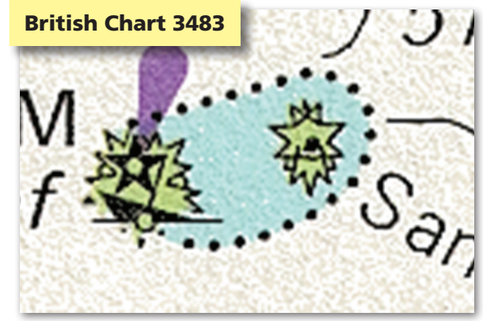


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

West Reef (8°50'·68N 112°11'·70E), from where a light (2.54) is exhibited, which consists of several detached drying coral heads on a reef encircling a lagoon with depths of 11 to 18 m, but encumbered by several underwater coral heads. A low sand cay lies on the E side of the reef. The lagoon may be approached from the SE side, but this is hazardous due to the coral heads. The reef is usually marked by breakers. West Reef Light (2.54) is exhibited from the W side of the reef, and a stranded wreck lies on the S side.

British Chart 3483

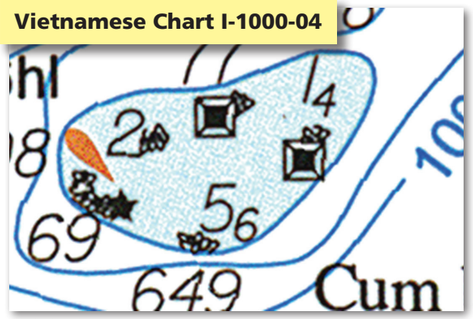


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

LONDON REEFS: WEST REEF

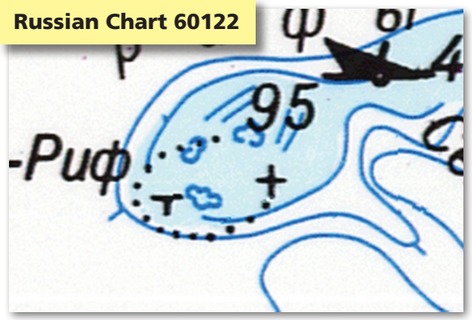
Additional Charts

Vietnamese Chart I-1000-04



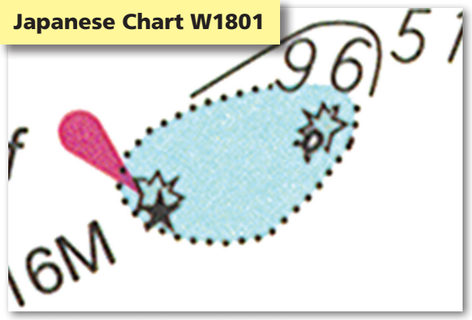
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 60122



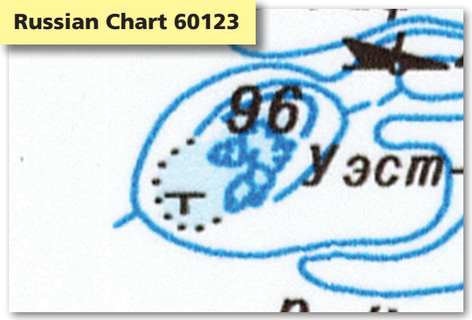
Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC35

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Russian Chart 60123

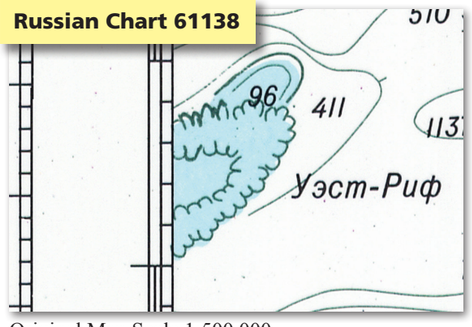


Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC36

Malaysian Chart

Malaysian chart coverage
stops at 8°50' N

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Geographic/Hydrographic Observations by Dr. Robert Smith

London Reef (West London Reef) has a lagoon and is comprised of a number of separate coral heads that are submerged at high water. There is a sand cay, 0.6 metres high, on the east side of the reef. With the exception of the Russian nautical chart, all the charts show the sand cay. Several man-made structures have been built on this cay, as shown in the satellite imagery and photographs. The eastern-most installation has been built on the sand cay; the others were built in shallow water.

Historical and Anthropological Information

West London Reef was seen by the *London* in 1786.[1] It was described in 1879 as follows:

> WEST LONDON REEF, bearing E. by N. 3/4 N. distant 31 miles from Ladd reef, is 4 1/2 miles long, N.E. by E. and S.W. by W., 2 1/4 miles broad; several of the coral heads surrounding this reef dry at low water. On the centre of the reef there are 6 to 10 fathoms water, with several shoal spots. The only approach to the centre is form the south-east side, but so many coral patches exist that the navigation is extremely hazardous. On the east side of the bank, in lat. 8º 52' 51" N., long. 112º 15' 28" E., is a sandy cay, a quarter of a mile in extent N.E. and S.W., 26 yard broad, and 2 feet above high water.[2]

France claimed the London Reefs, including West London Reef, in the early 1930s.[3] The United Kingdom rejected the claim, concluding it had "no basis in international law and calls for a strong protest without any further delay".[4] The Admiralty observed: "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[5]

No record of human habitation has been found prior to 1988, when Vietnamese armed forces occupied West London Reef.[6]

The Status of the Feature under UNCLOS

West London Reef is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. This feature, which has a sand cay that is only 0.6 metres high and coral heads that are submerged at high tide, has an area of only 0.0327 km^2. The Philippines is not aware of any human presence on East London Reef prior to its occupation by the Vietnamese military in 1988.[7]

References

[1] James Horsburgh, *India Directory, or Directions for Sailing to and From the East Indies*, Vol. 2 (1827), p. 367-68. SWSP, Vol. IV, Annex 387.

[2] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 62. SWSP, Vol. IV, Annex 389.

[3] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933). SWSP, Vol. III, Annex 363; United Kingdom, *Draft Memorandum* (undated). SWSP, Vol. III, Annex 355.

[4] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933). SWSP, Vol. III, Annex 363.

[5] *Id*.

[6] Jianming Shen, "International Law Rules and Historical Evidences Supporting China's Title to the South China Sea Islands", *Hastings International & Comparative Law Review*, Vol. 21, No. 1 (1997-1998), p. 56. MP, Vol. VII, Annex 260. Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

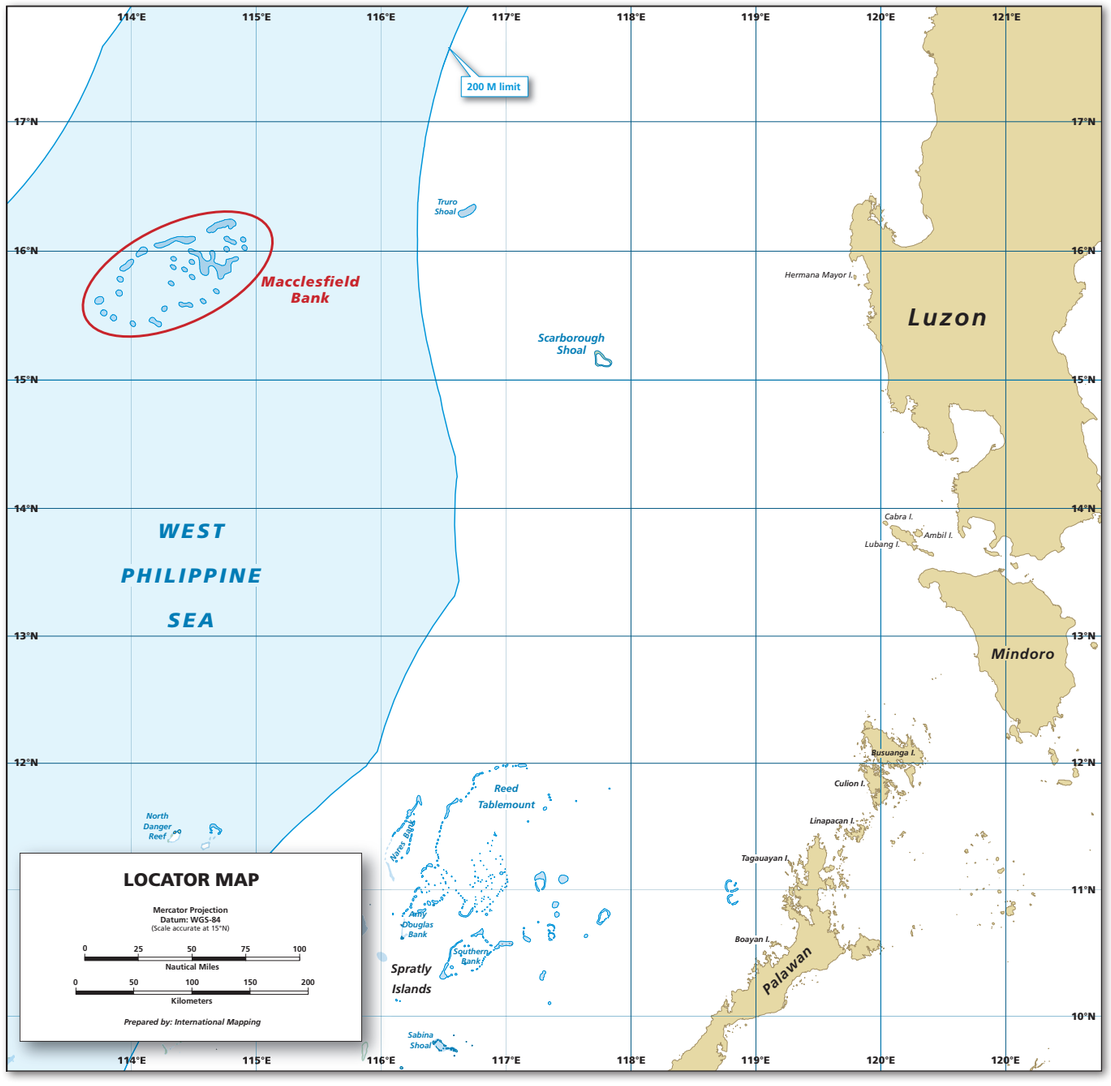
[7] Jianming Shen, "International Law Rules and Historical Evidences Supporting China's Title to the South China Sea Islands", *Hastings International & Comparative Law Review*, Vol. 21, No. 1 (1997-1998), p. 56. MP, Vol. VII, Annex 260. *See also* Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450.

MACCLESFIELD BANK

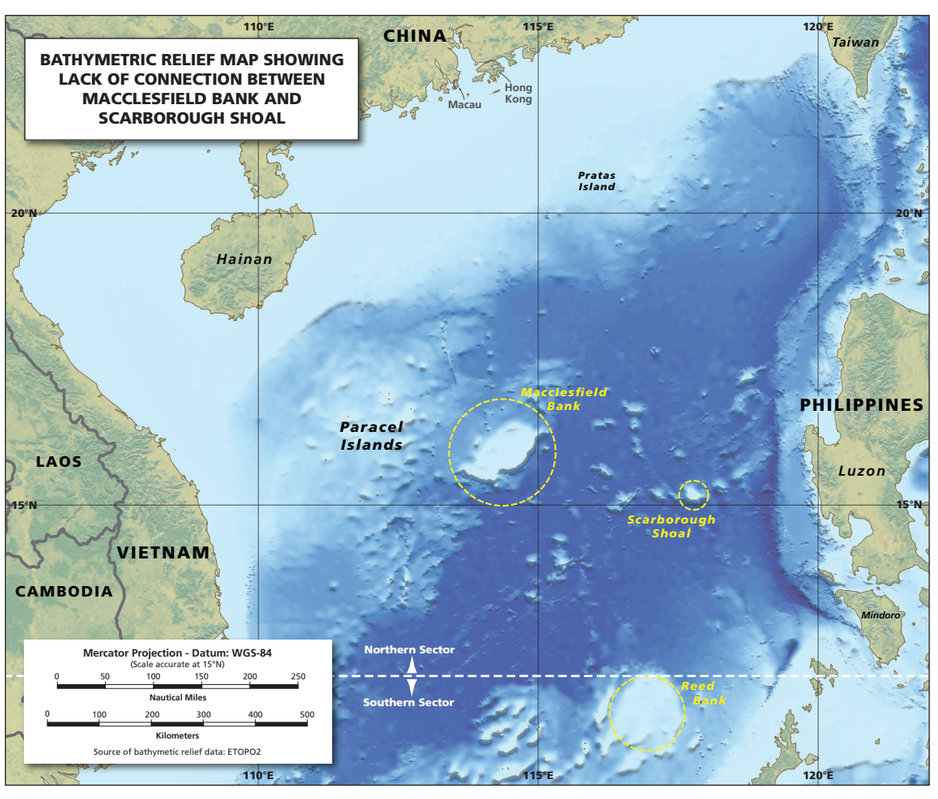
Also known as:

Chinese: Zhongsha Qundao (中沙群岛)
Philippine:

Coordinate Location: 15°50'00"N - 114°20'00"E
Nearest High Tide Feature: Lincoln Island (located in the Paracel Islands), 84.6 M
Distance to Luzon: 279.9 M
Distance to Hainan: 258.6 M
Claimed by: China, Vietnam
Occupied by: Unoccupied



Satellite Image

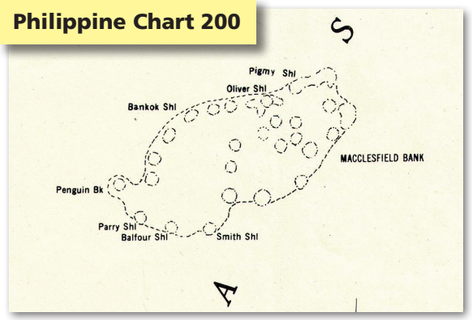


MACCLESFIELD BANK
Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

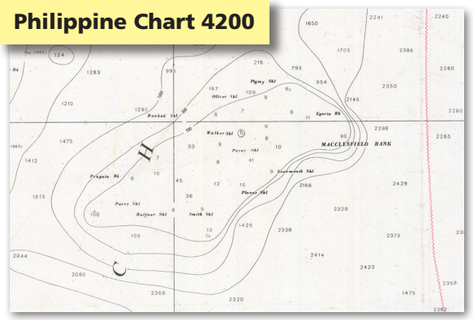
Not included.

Philippine Chart 200



Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC30

Philippine Chart 4200

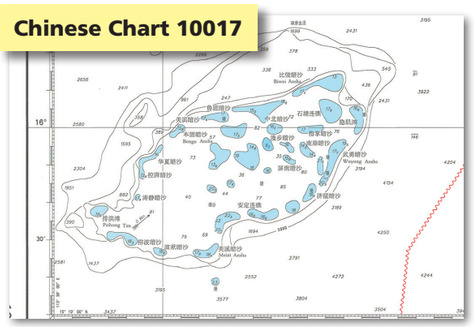


Original Map Scale 1:1,575,000
Complete chart reproduced as Annex NC31

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Zhongsha's Great Rim of the Reef forms as the main body of the Zhongsha Islands. It is located at 200,000 meters from the southeast of Yongxing Island. Among the Nanhai Island, the Great Rim of the Reef is the largest atoll. It is in oval shape, extending from northeast towards southwest, with 140 thousand meters long and 61 thousand meters wide. At the outskirt of the Great Rim, there are 20 submerged cays, reefs and shoals. They are in strip shape and normally as long as 3 - 4 thousand meters. Biwei Ansha at the northeast is 15,000 meters long. The water depth in the smallest is 12 - 20 meters. It has been found that in the east of the lagoon there are 6 submerged cays and reefs, they are as deep as 9 - 16 meters below water. Within the lagoon, the depth is mostly between 60 - 80 meters. It is known that at the southwest, the deepest reaches to 109 meters. The waterways among the submerged cays at the outskirt of the lagoon connect the lagoon with the sea outside. In bad weathers, the billowing waves surge against the edge of the Great Rim, which can be seen from far distance.

Chinese Chart 10017



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC19

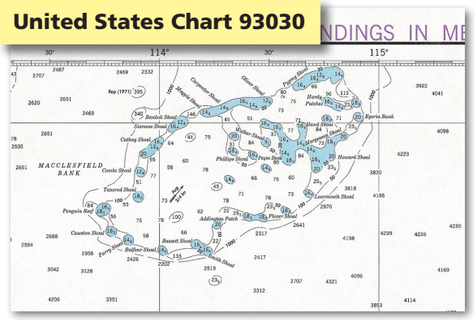
3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Macclesfield Bank (15°45'N., 114°20'E.) is a submerged atoll about 75 miles long on its NE-SW axis and about half that wide at its broadest part. Its W edge lies about 35 miles SE of the main Hong Kong-Singapore route.

Caution.—Caution should be exercised in the vicinity of Macclesfield Bank. Although the bank can usually be seen from aloft due to the fact that in heavy weather the sea along its edge is high and confused, the W part of the reef and lagoon have been only partially examined. Shoals other than those charted may exist. It is recommended that vessels pass either well W or E of the bank.

The coral rim of Macclesfield Bank, with an average width of 3 miles, has depths of 11.8m at Pygmy Shoal on the NE end of the bank and depths of 11.6 to 18m elsewhere. Many other shoals lie around the rim with their depths best seen on the chart. Within the lagoon, Walker Shoal is the shallowest known danger, with a depth of 9.2m.

United States Chart 93030

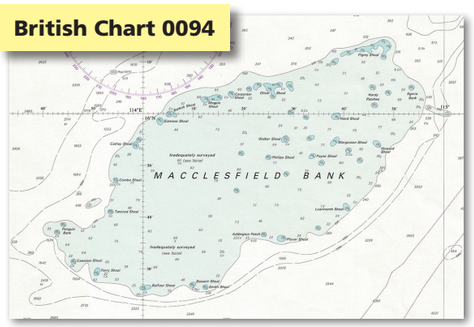


Original Map Scale 1:1,071,000
Complete chart reproduced as Annex NC60

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP30)*, Vol. 1 (5th ed., 2001) (SWSP, Annex 344)

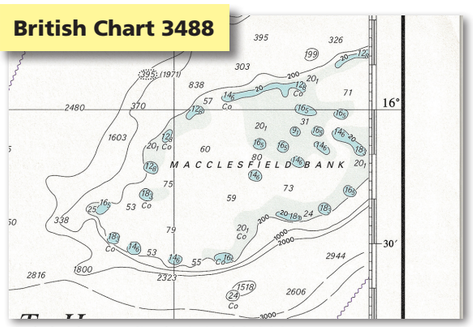
Macclesfield Bank (15°50'N, l14°20'E) is situated E of the main route, its SW extremity lying 66 miles ESE of Bombay Reef (16°02'N, ll2°30'E) (2.61). It was discovered by the English ship *Macclesfield* in 1701 and was surveyed in 1892-3. The W portion of the bank has only be partially surveyed. The bank is a below-water atoll, with many patches, over which there are depths of less than 20 m on its edge. The shallowest part of the edge is at the NE end of Pigmy Shoal (16°14'N, ll4°48'E) at the NE end of the bank, where there is a depth of 11·9 m. Detached depths of 9 m have been reported 11 miles ESE and 19 miles ENE of the E extremity of Pigmy Shoal.

British Chart 0094



Original Map Scale 1:500,000
Map not reproduced in Nautical Chart Annexes

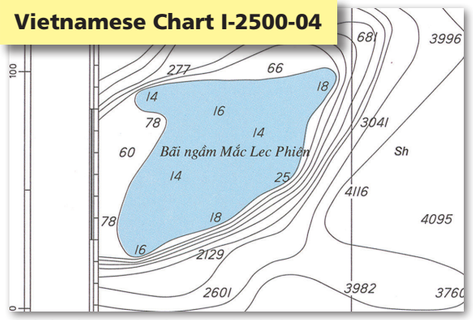
British Chart 3488



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC45

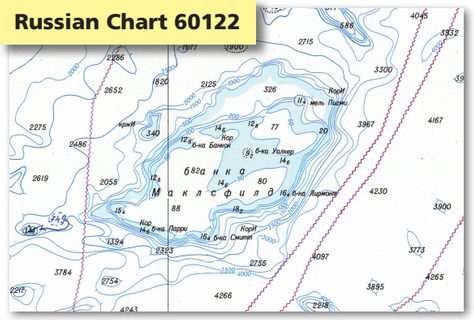
MACCLESFIELD BANK
Additional Charts

Vietnamese Chart I-2500-04



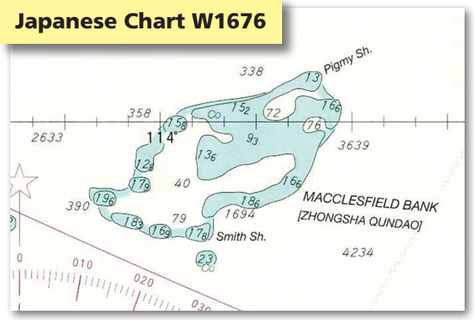
Original Map Scale 1:2,500,000
Complete chart reproduced as Annex NC66

Russian Chart 60122



Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC35

Japanese Chart W1676



Original Map Scale 1:2,500,000
Complete chart reproduced as Annex NC7

Malaysian Chart

Malaysian chart coverage
stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Macclesfield Bank is a submerged atoll that extends in a northeast-southwest direction for approximately 75 M. At its broadest point, the bank is approximately 36 M wide. The shoals that rim the bank have depths of between 9-18 metres. Most of the nautical charts of this area state that the bank has been only partially surveyed. This bank is distinct from Scarborough Shoal, which is located approximately 168.2 M to the east. The water depths between Macclesfield Bank and Scarborough exceed 4,000 metres, as shown, for example, on NGA 91004 and NGA 93030.

The Status of the Feature under UNCLOS

Macclesfield Bank is a submerged feature because it is entirely under water at low tide. In 1816, it was described as "a rocky bank under water".[1] Depths range from 9 to 18 metres. The feature is unconnected to Scarborough Shoal, which at its closet point is 168.2 M to the east and separated by waters that exceed 4,000 metres in depth.

MACCLESFIELD BANK

References

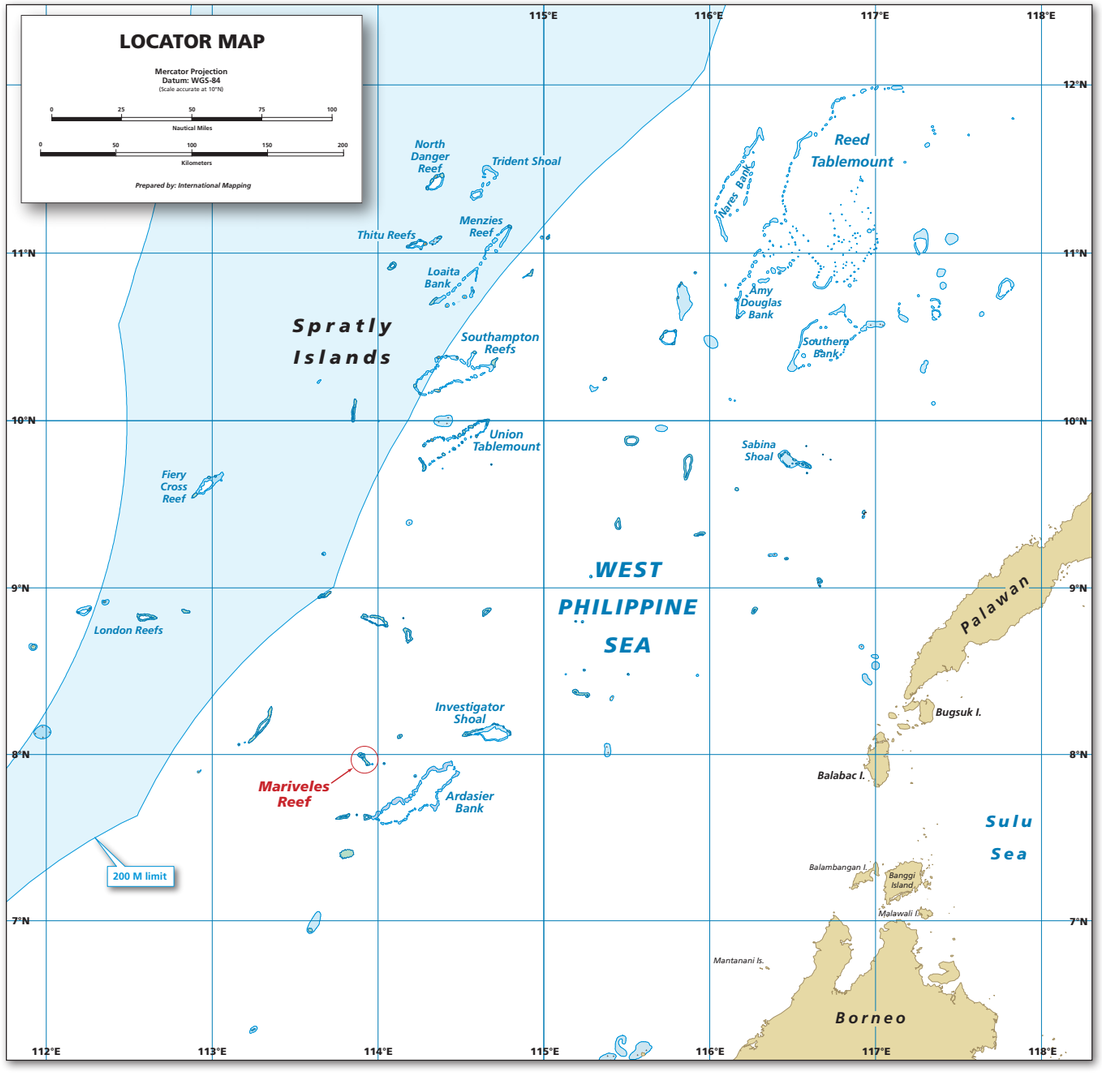
[1] John Purdy, *The Oriental Navigator: Directions for Sailing to, from, and upon the coasts of, the East-Indies, China, Australia, &c.* (3rd ed., 1816), p. 494. SWSP, Vol. IV, Annex 386.

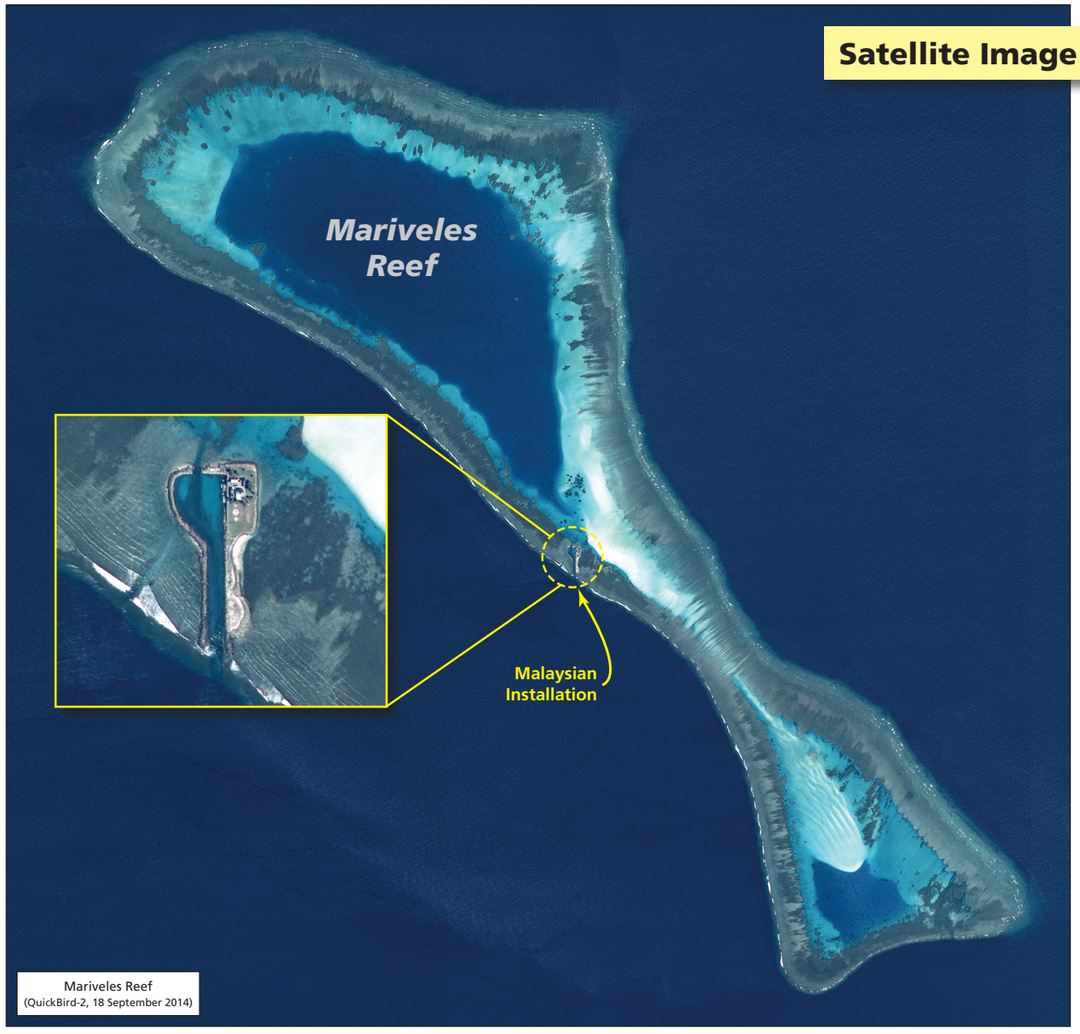
MARIVELES REEF

Also known as:

Chinese: Nanhai Jiao (南海礁)
Philippine: Mariveles

Coordinate Location: 07°59'00"N - 113°54'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 177.1 M
Distance to Hainan: 655.6 M
Claimed by: China, Philippines, Vietnam
Occupied by: Malaysia





Malaysian installation seen from the sea

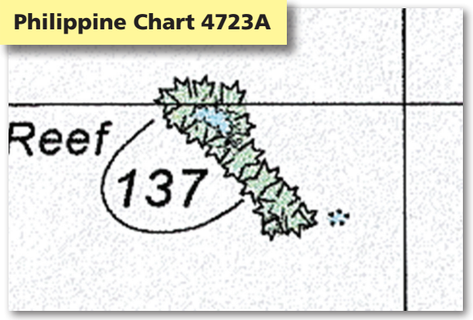
MARIVELES REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

MARIVELES REEF (8° 00' N, 113° 56' E) is situated 15 miles SW of Erica Reef. It dries and entirely encloses two lagoons. A sand cay 2 meters (5 ft) high lies on the neck between the two lagoons and some isolated rocks may be just visible at H W.

Philippine Chart 4723A

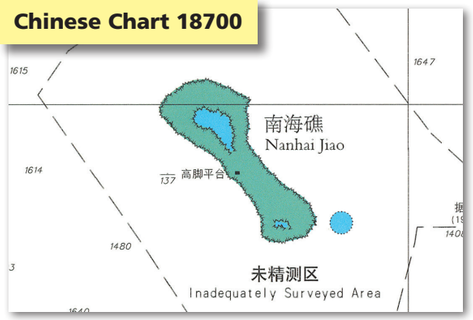


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Nanhai Reef - Located approximately 62 nautical miles south-southeast of Bisheng Reef, and in the middle section of its reef basin, there is a small sandbank that is exposed approximately 1.5 meters. This reef is an exposed atoll that is trending northwest-to-southeast. It is approximately 5.5 nautical miles in length and approximately 1.8 nautical miles in width. In the center are two enclosed lagoons, which have no entry points. This atoll is relatively precipitous, and there are reef rocks on top of it. There are miscellaneous sand beaches, and they are not suitable to use for anchoring.

Chinese Chart 18700

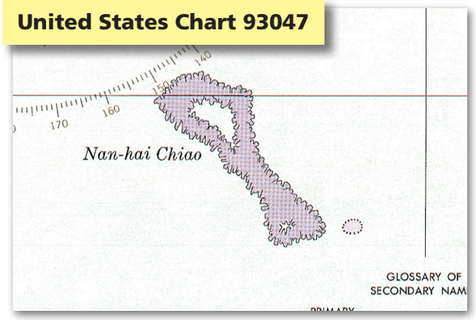


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Mariveles Reef (8°00'N., 113°56'E.), about 6 miles long in a general NW-SE direction, lies about 7 miles W of Erica Reef. It dries, encloses two lagoons, and has a sand cay 2m high on the neck between the lagoons. A few isolated rocks may be just visible at HW.

United States Chart 93047

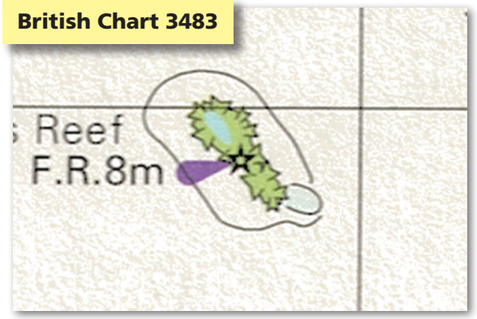


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Mariveles Reef (7°58'·57N 113°54'·79E), which dries, entirely encloses two lagoons. A sand cay lies on the neck between the lagoons, and some isolated rocks may be just visible at HW. There is no anchorage, but the lagoons are probably accessible to boats at HW.

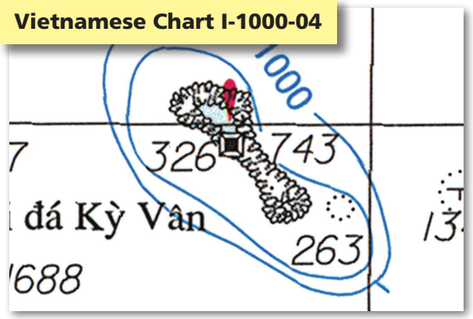
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

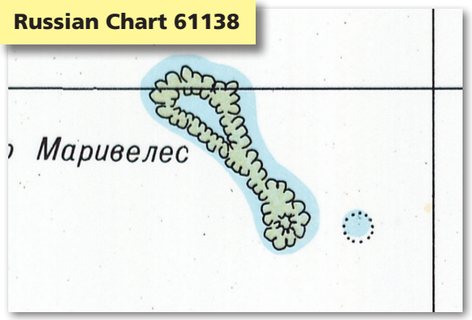
MARIVELES REEF
Additional Charts

Vietnamese Chart I-1000-04



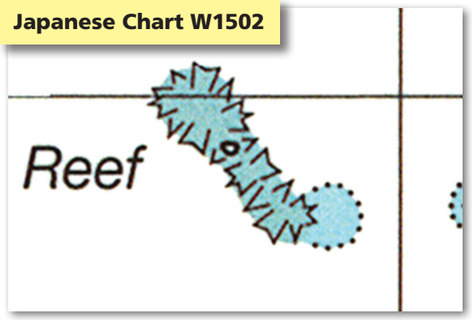
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



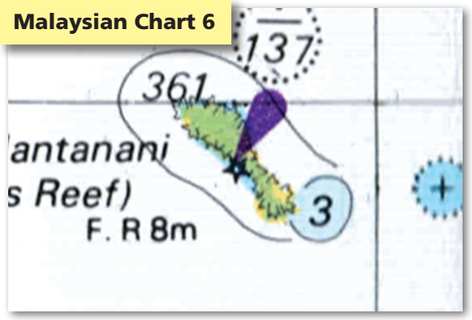
Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1502



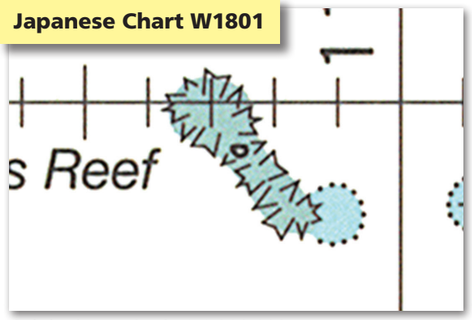
Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC10

Malaysian Chart 6



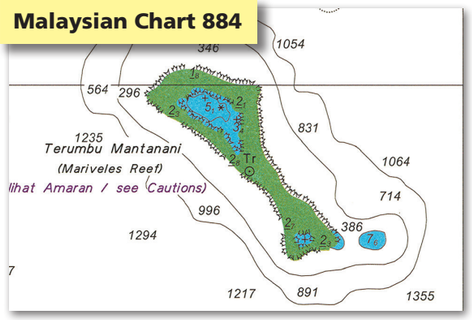
Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Mariveles Reef is approximately 6 M long, in a northwest-southeast direction, and approximately 1.8 M wide. It dries at low water and entirely encloses two lagoons. A sand cay 2 metres high lies on the neck between the two lagoons. Some isolated rocks may be barely visible at high water. The U.S., British, Philippine, and Russian nautical charts do not show any features on the reef. The Chinese chart shows one black dot; the Vietnamese chart shows a black square; and the Japanese nautical chart shows a round figure with coloring. These symbols may represent a man-made installation that has been built on the sand bank in the "neck" between the two lagoons. The satellite imagery and the photographs show this installation.

Historical and Anthropological Information

Mariveles Reef is named after the Spanish ship *Mariveles*, which was lost on the reef in 1879.[1] As reported in *The China Sea Directory*, "The Spanish steam-vessel *Mariveles*, 1879, struck on a coral reef, reported to lie in lat. 7º 58' N., long. 113º 50' E. This reef is said to be about 4 miles long, 2 miles broad, and to be nearly awash, with 54 fathoms close to [sic]".[2]

In the 1930s, Mariveles Reef was reported to be five feet above the high water mark.[3] An internal British government memorandum from 12 November 1937 noted that for a group of features including Mariveles, "[v]ery little information as to the exact extent of the islets exists, or as to their suitability for the development of aerodromes".[4]

Mariveles Reef was occupied by Malaysian armed forces between September and November of 1983[5] and again in 1986.[6] It has approximately 20 Malaysian soldiers[7] and has some military facilities.[8]

The Status of the Feature under UNCLOS

Mariveles Reef is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. This small feature, only 0.125 km^2, consists of a reef surrounding two lagoons without entry points and a small sand cay between. There is no record of human habitation at Mariveles Reef prior to its occupation by Malaysia between September and November of 1983[9] and again in 1986.[10] There is no economic activity on the feature.

References

[1] United Kingdom, *Draft Memorandum* (undated). SWSP, Vol. III, Annex 356.

[2] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 290. SWSP, Vol. IV, Annex 389.

[3] *Memorandum* to Admiralty, United Kingdom (12 Nov. 1937). SWSP, Vol. III, Annex 372.

[4] *Id*.

[5] Amitav Acharya, "Containment, Engagement or Counter-Dominance?: Malaysia's response to the rise of China", in *Engaging China: The Management of an Emerging Power* (A. I. Johnston & R. S. Ross, eds., 1999), p. 133. SWSP, Vol. V, Annex 449.

[6] Johan Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 76. SWSP, Vol. V, Annex 460.

[7] M. Valencia, et al., *Sharing the Resources of the South China Sea* (1997), p. 36. SWSP, Vol. V, Annex 448.

[8] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 48. MP, Vol. VIII, Annex 256.

[9] Amitav Acharya, "Containment, Engagement or Counter-Dominance?: Malaysia's response to the rise of China", in *Engaging China: The Management of an Emerging Power* (A. I. Johnston & R. S. Ross, eds., 1999), p. 133. SWSP, Vol. V, Annex 449.

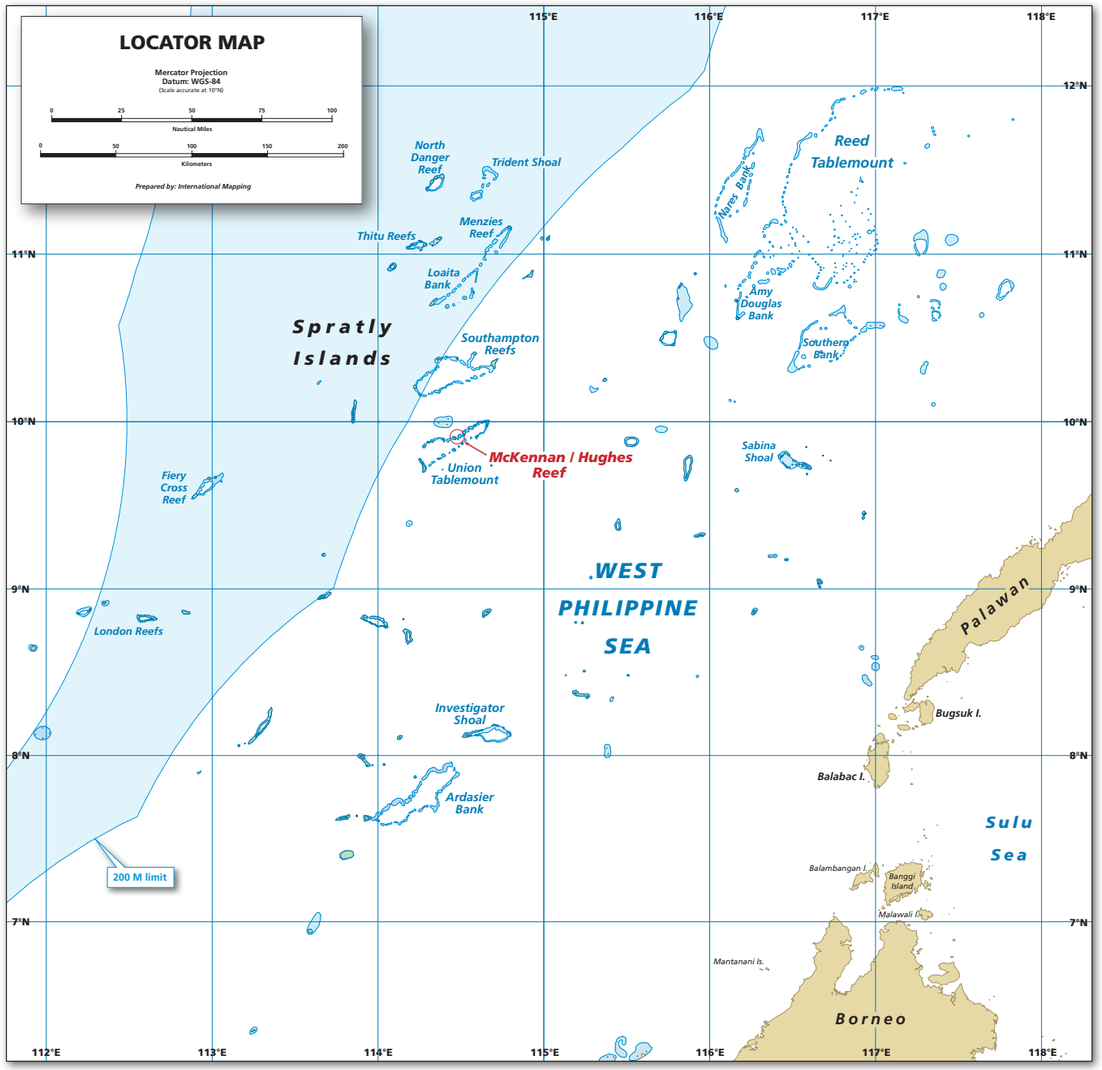
[10] Johan Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation* (S. Wu & K. Zou, eds., 2014), p. 76. SWSP, Vol. V, Annex 460.

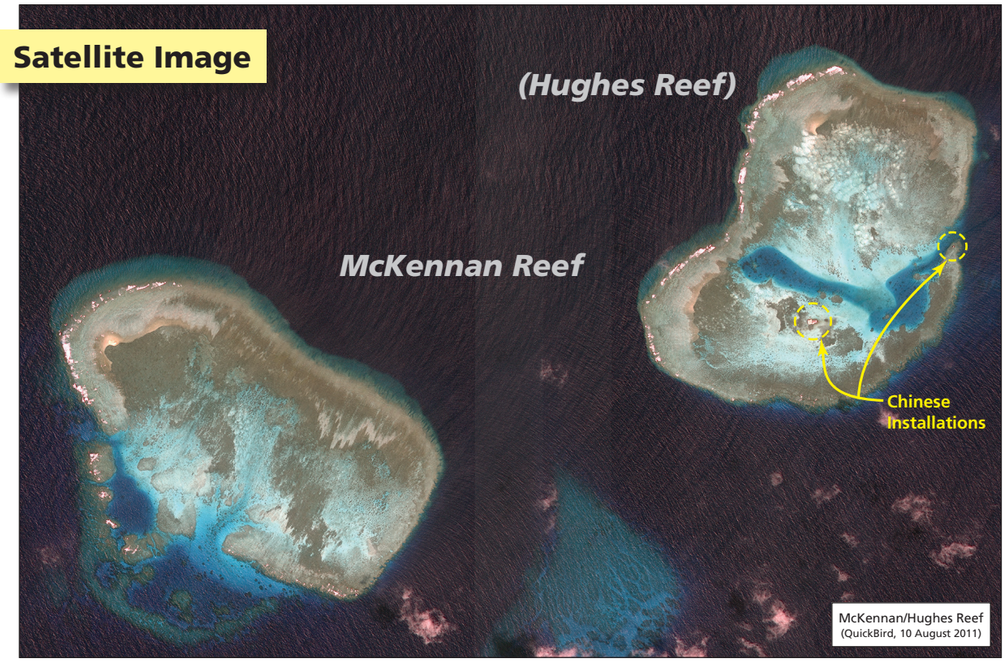
MCKENNAN/HUGHES REEF

Also known as:

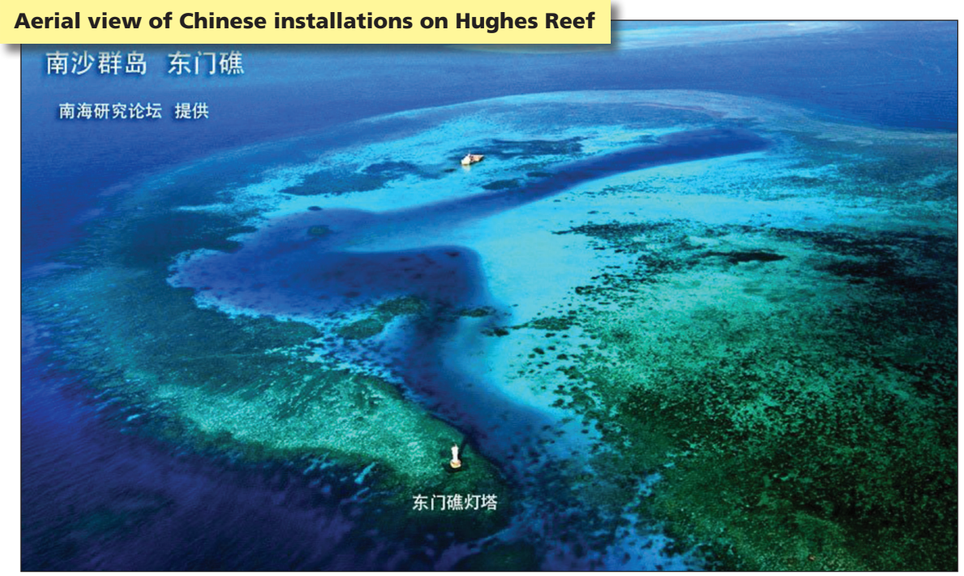
Chinese: Ximen Jiao (西门礁)
Philippine: Chigua

Coordinate Location:
Nearest High Tide Feature: Grierson Reef, 3.5 M
Distance to Palawan: 180.4 M
Distance to Hainan: 566.7 M
Claimed by: China, Philippines, Vietnam
Occupied by: China

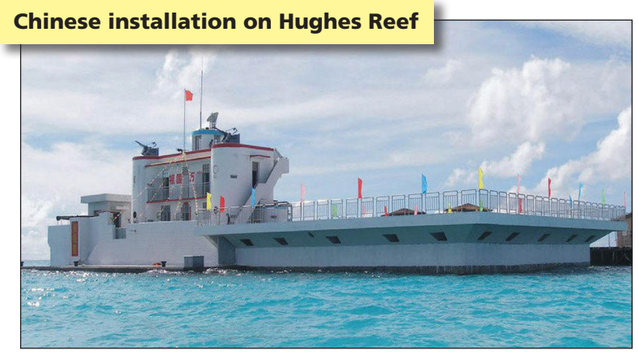




Aerial view of Chinese installations on Hughes Reef



Chinese installation on Hughes Reef



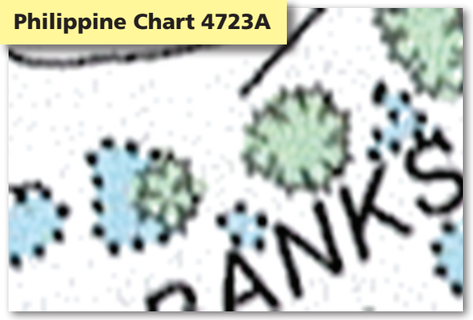
MCKENNAN/HUGHES REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

Philippine Chart 4723A

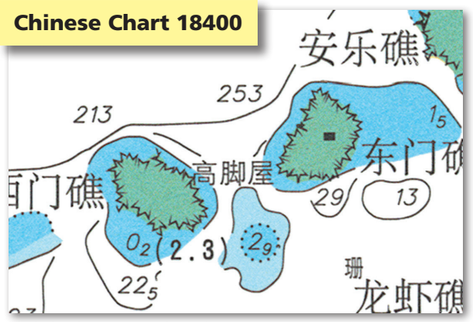


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Jiuzhang reef group includes in total 20 individual reef flats. Among these, there are 2 islands (Jinghong Island, Ranqing Sandbank), and 18 reefs. In clockwise order starting from the western end of the reefs, they are Chigua Reef, Guihan Reef, Hua Reef, Jiyang Reef, Jinghong Reef, Nanmen Reef, Ximen Reef, Dongmen Reef, Anle Reef, Changxian Reef, Zhuquan Reef, Niu'e Reef, Ranqingdong Reef, Ranqing Sandbank, Longxia Reef, Bianshen Reef, Jiuzhang Unnamed Reef (to be named), Zhangxi Reef, Quyuan Reef, and Qiong Reef.

Chinese Chart 18400

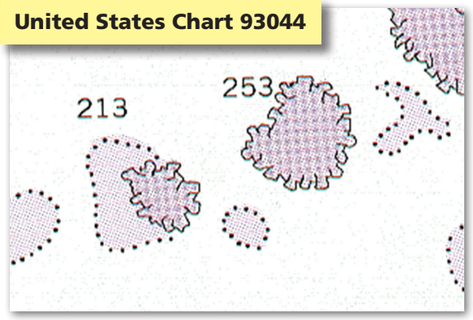


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Not included.

United States Chart 93044

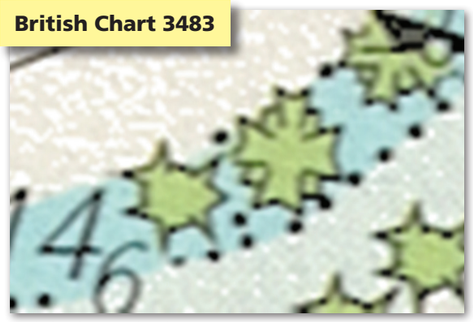


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Not included.

British Chart 3483

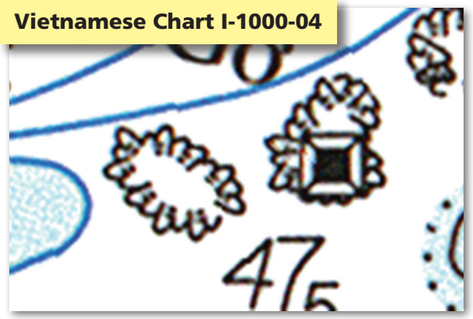


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

MCKENNAN/HUGHES REEF

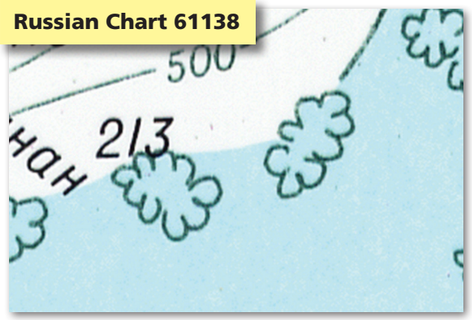
Additional Charts

Vietnamese Chart I-1000-04



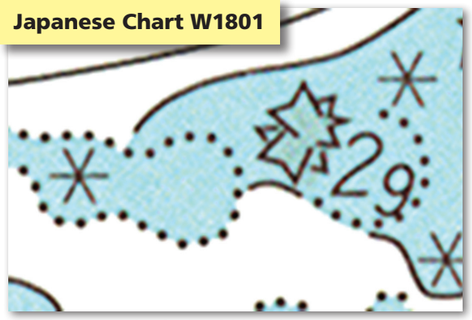
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage
stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

McKennan/Hughes Reef is shown on all the nautical charts as a drying reef with no natural feature above water at high tide. As shown on the satellite imagery and photographs, two man-made structures have been built on the northern and southern section of reef. They have been built on either low-tide features or on the shallow sea floor.

The Status of the Feature under UNCLOS

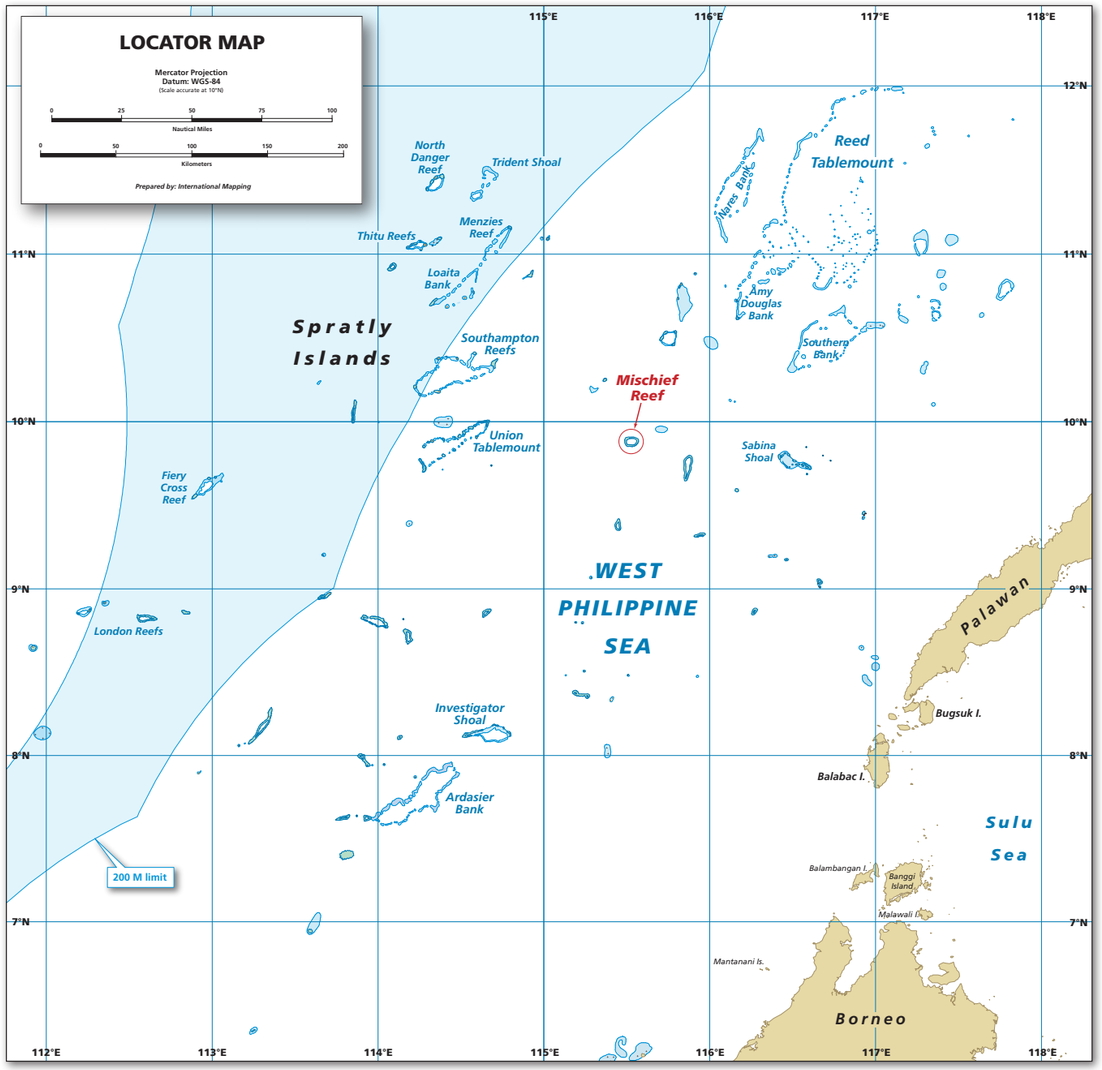
McKennan Reef (Hughes Reef) is a low-tide elevation under Article 13, because it dries at low tide and is submerged at high tide. This is detailed in paragraphs 5.66-5.69 of the Memorial, and shown in the following charts: Philippine Chart 4723A, Chinese Chart 18400, U.S. Chart 93044, British Chart 3483, Vietnamese Chart I-1000-04, Russian Chart 61138, and Japanese Chart W1801. The feature is within 180.4 M of Palawan, and is 3.5 M from the nearest high-tide feature (Grierson Reef).

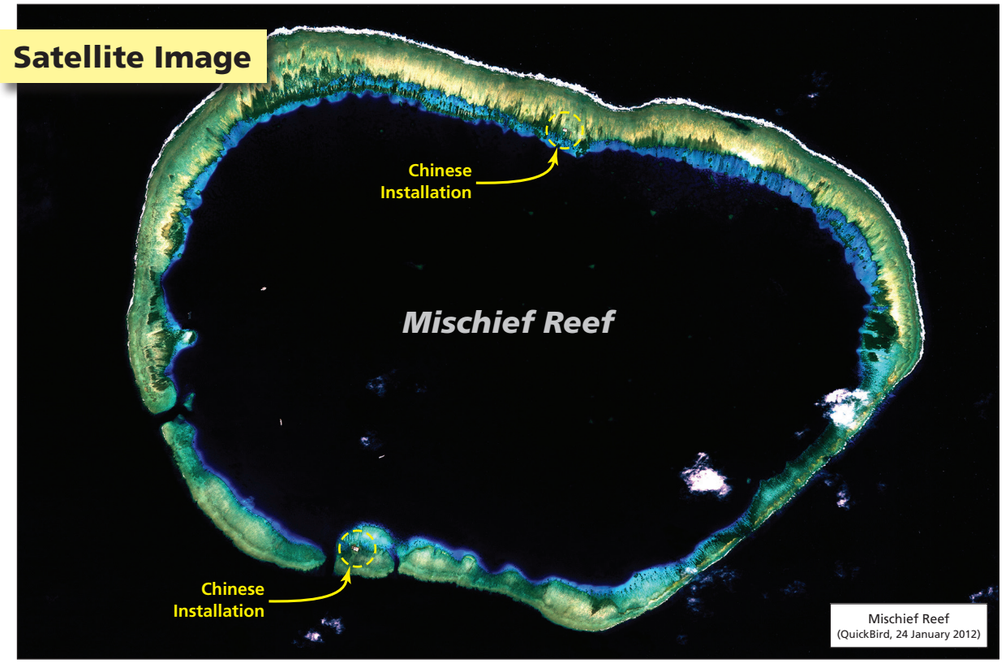
MISCHIEF REEF

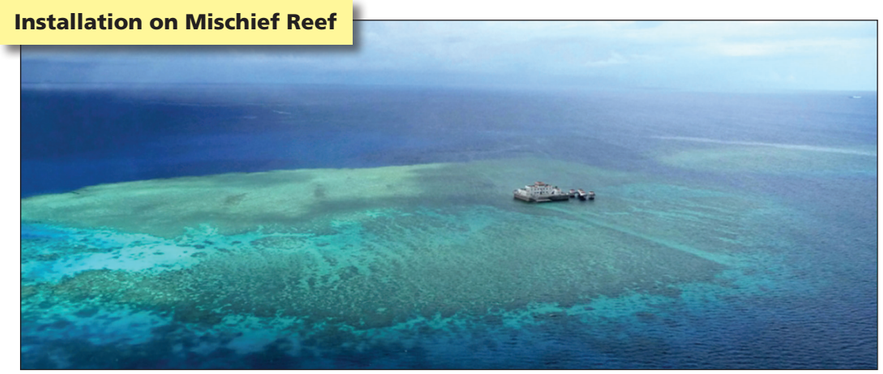
Also known as:

Chinese: Meiji Jiao (美济礁)
Philippine: Panganiban

Coordinate Location: 09°55'00"N - 115°32'00"E
Nearest High Tide Feature: Alicia Annie Reef, 27.8 M
Distance to Palawan: 125.6 M
Distance to Hainan: 596.3 M
Claimed by: China, Philippines, Vietnam
Occupied by: China







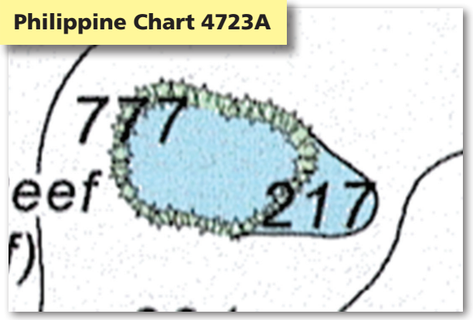
MISCHIEF REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

PANGANIBAN REEF (MISCHIEF REEF) (9˚ 55' N, 115˚ 31' E), awash, is situated 22 miles NW of Ayungin Shoal. The average depth inside the lagoon is 26 meters (14 fms). The SW half is free of danger and affords good shelter while the NE part is encumbered with coral heads, most of which have depths of less than 1.8 meters (6 ft) over them.

Philippine Chart 4723A

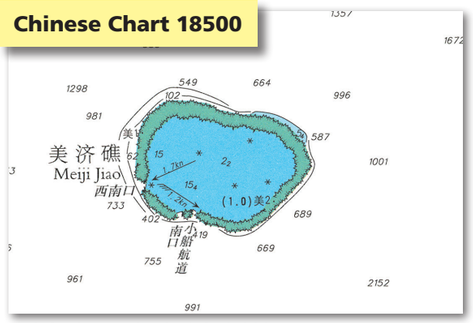


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Meiji Reef - Located at the northeast part of the Nansha Islands, it is due east of the Jiuzhang Reefs, and it is approximately 62 nautical miles from Dongmen Reef. The reef resembles an elliptical shape, and it is an enclosed, independent atoll. The reef flat is exposed during low tide and is submerged during high tide. The northern part is relatively wide, and the southern part is relatively narrow. There are dozens of reef rocks on the reef flat that range in height from 0.6 meters ~ 1.3 meters. During half-tide, they can be exposed. The southwest part has three openings to enter the lagoon. The water depth of the lagoon is 10 meters ~ 28 meters, and there are over 50 points of exposed reef flat scattered throughout. To develop the distant-sea fishing industry, in 1994, China's fishing authorities constructed stilt houses and navigational aid facilities on this reef, set up administrative offices, and created the conditions for distant-sea operations, fishing vessel safety and production, supply, wind protection, and mooring.

Chinese Chart 18500



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC18

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

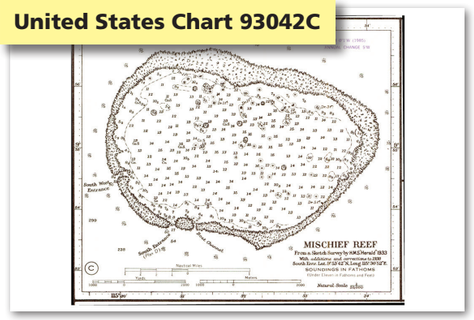
Mischief Reef (9°55'N., 115°32'E.) is a circular coral atoll about 4 miles in diameter. The reef, which is awash and has several drying rocks, encloses an extensive lagoon containing an average depth of 26m. The SW part of the lagoon is free of dangers and affords good shelter, but the NE part is encumbered with coral heads with depths of less than 1.8m. Many of these heads are pinnacles, which are difficult to detect even with good lighting conditions.

There are three entrances to the lagoon along the S and SW sides of the atoll, two of which are boat channels.

South Entrance, the westernmost, has a navigable width of 37m and is 300m in length, with depths of over 18.3m. The axis of the deepest water, clearly defined in good light by its deep blue color, lies in a slight curve, approximately parallel to the edge of the reef on the W side… The reef on the W side is steep-to and on the E side is slightly shelving…

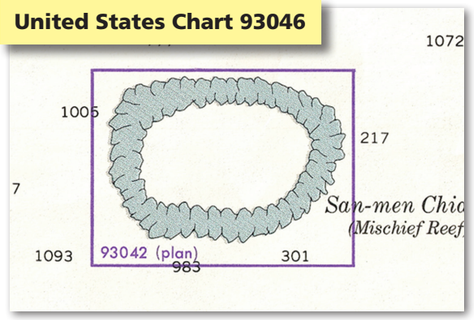
Caution.—It was reported (1995) that the area within a 60 mile radius of Mischief Reef has been declared prohibited to all vessels.

United States Chart 93042C



Original Map Scale 1:50,000
Complete chart reproduced as Annex NC56

United States Chart 93046



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC52

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Mischief Reef (9°54'·27N 115°32'·14E), awash, but much of which dries, surrounds an extensive lagoon which has an average depth of 26 m.

There are three entrances to the lagoon, two on the S and one on the SW side of Mischief Reef.

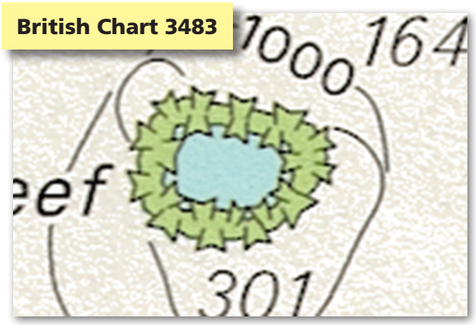
The most W of the two entrances on the S side has depths of more than 18 m; it is ½ cable wide and 1½ cables in length. The deepest water, clearly defined in good light by its deep blue colour, lies in a slight curve approximately parallel to the edge of the reef on the W side.

…

The other entrances are only boat channels.

The SW half of the lagoon is free from dangers and affords good shelter, but the NE part is encumbered with coral heads, most of which have depths of less than 2 m.

British Chart 3483

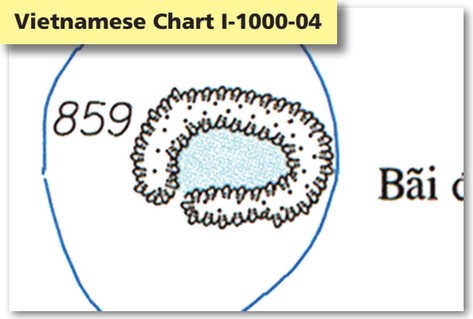


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

MISCHIEF REEF

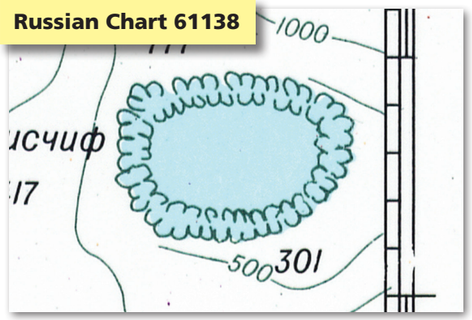
Additional Charts

Vietnamese Chart I-1000-04



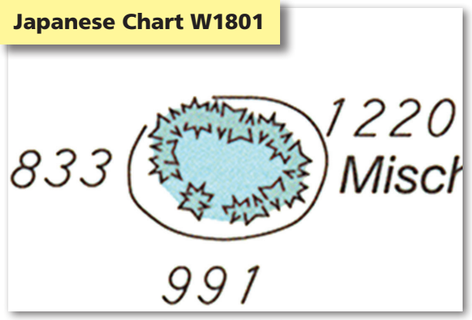
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



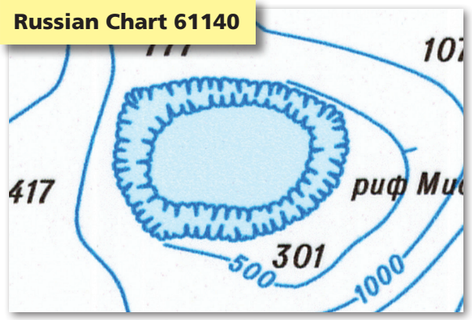
Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Russian Chart 61140



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC41

Malaysian Chart

Malaysian chart coverage
stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Mischief Reef is a circular atoll approximately 4 M in diameter. The reef has features that are awash at tidal datum with several drying rocks, but there are no features above water at high tide. As shown on the satellite imagery and in photographs, buildings have been constructed on the reef. The foundations for these structures have been placed on low-tide elevations and in the shallow water.

The Status of the Feature under UNCLOS

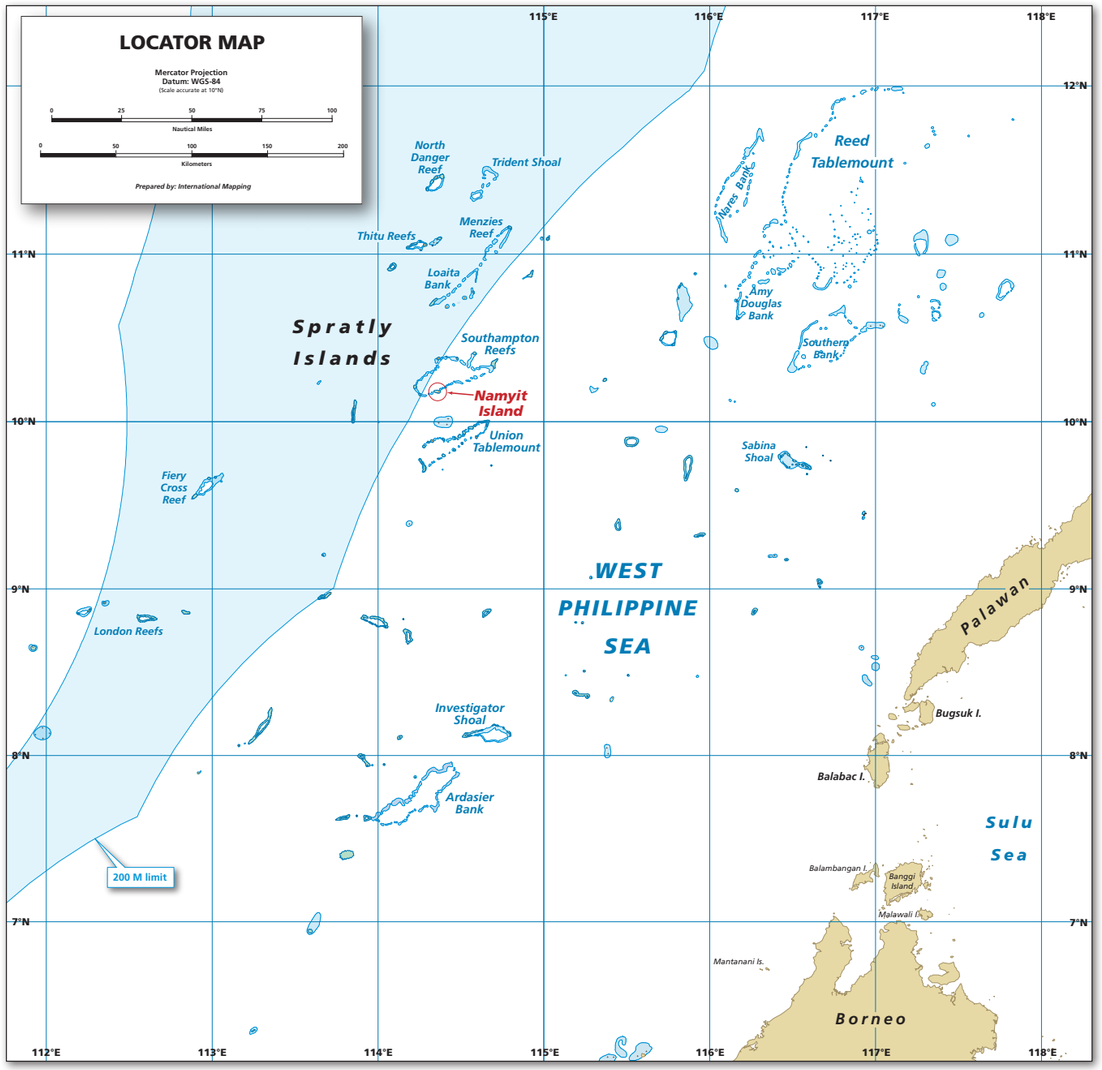
Mischief Reef is a low-tide elevation under Article 13, because it dries in part at low tide and is completely submerged at high tide. This is detailed in paragraphs 5.63-5.65 of the Memorial, and in the following charts: Philippine Chart 4723A, Chinese Chart 18500, U.S. Charts 93042C and 93046, British Chart 3483, Vietnamese Chart I-1000-04, Russian Charts 61138 and 61140, and Japanese Chart W1801. Mischief Reef is within 125.6 M of Palawan, and is 27.8 M from the nearest high-tide feature (Alicia Annie Reef).

NAMYIT ISLAND

Also known as:

Chinese: Hongxiu Dao (鸿庶岛)
Philippine: Binago Island

Coordinate Location: 10°11'00"N - 114°22'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 194.8 M
Distance to Hainan: 549.9 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam

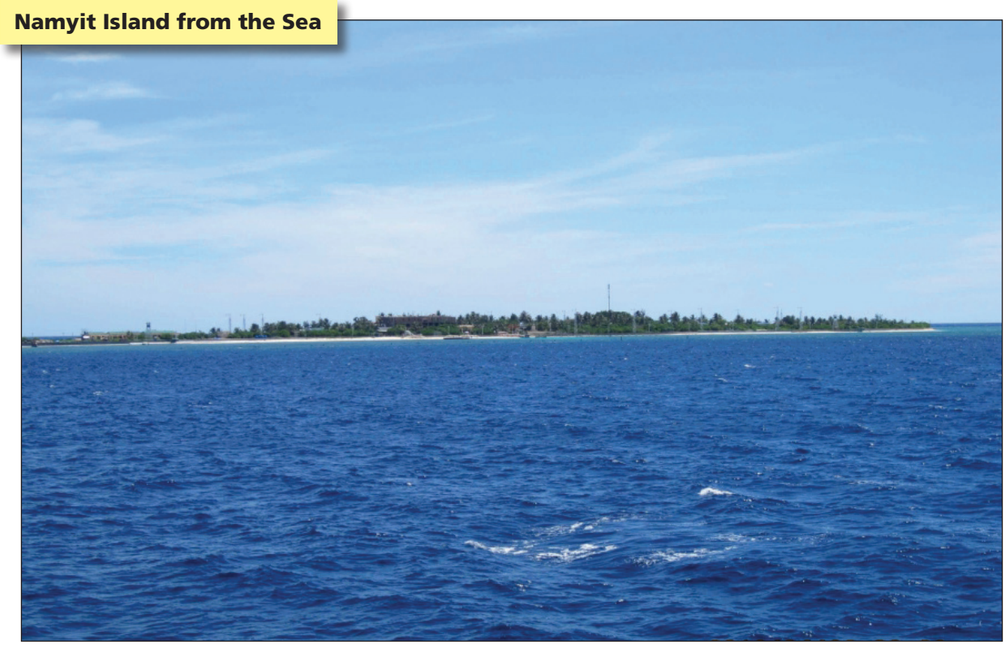


Satellite Image

Namyit Island
(QuickBird-2, 12 September 2014)

Namyit Island

Namyit Island from the Sea



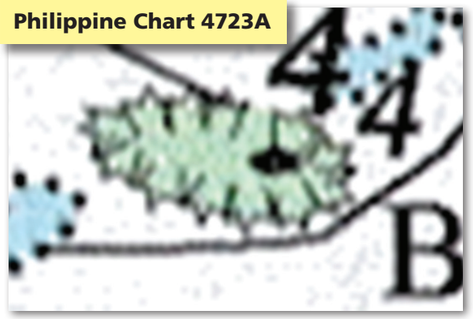
NAMYIT ISLAND

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

BINAGO ISLAND, 18 meters (61ft) high, covered with small trees and bushes, lie on the S side of Tizard Bank, 11 miles S of Ligaw Island. It is surrounded by a reef, which extends 1 mile W and 0.3 mile in other direction. A 4.6 meters (15 ft) patch lies 1 mile NE of Binago Island; a shoal, with a depth of 6.7 meters (22ft) over it, lies 2.2 miles WSW of the island.

Philippine Chart 4723A

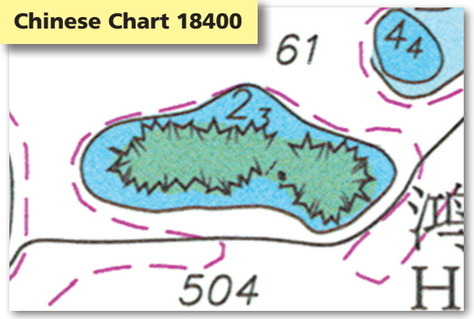


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Not included.

Chinese Chart 18400

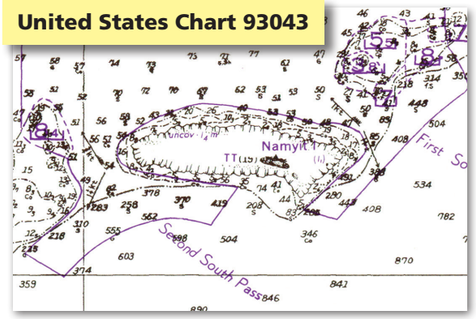


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Namyit Island (10°11'N., 114°22'E.), on the S side of Tizard Bank, about 12 miles S of Itu Aba, is 18m high and covered with small trees and brush. It lies on a reef which extends a little over 1 mile W and 0.5 mile E.

United States Chart 93043

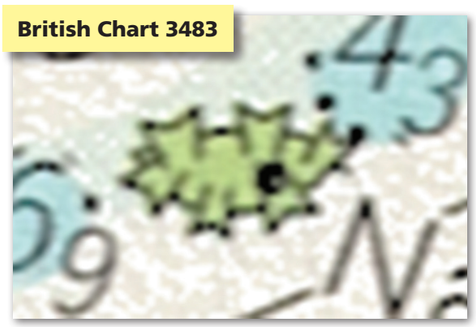


Original Map Scale 1:75,000
Complete chart reproduced as Annex NC51

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Namyit Island (10°11'·14N 114°21'·40E), which lies on the S side of Tizard Bank, is covered with small trees and bushes. It is surrounded by a reef which extends 1 mile W, and 3 ½ cables in other directions.

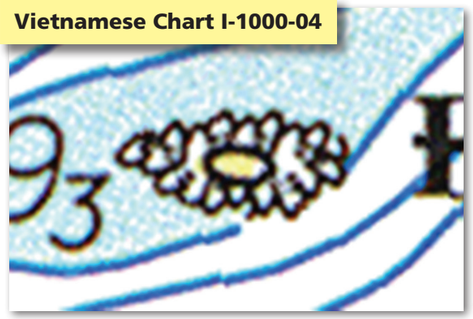
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

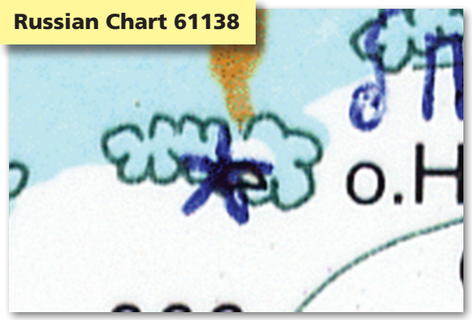
NAMYIT ISLAND
Additional Charts

Vietnamese Chart I-1000-04



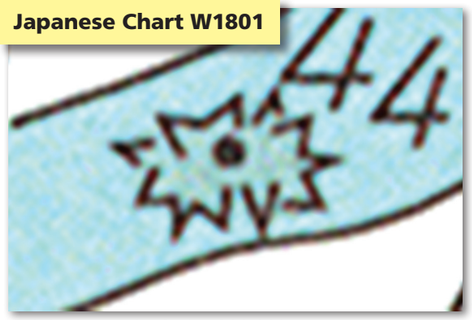
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



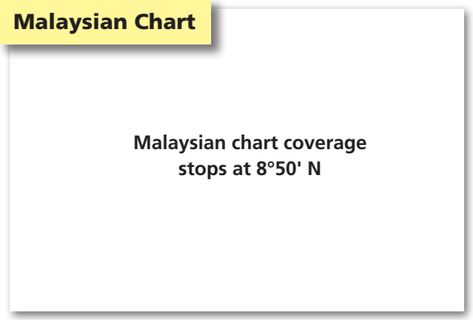
Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart



Geographic/Hydrographic Observations by Dr. Robert Smith

Namyit Island is located on the south side of Tizard Bank. It is 18 metres high and covered with small trees and bushes. It lies on a reef that extends about 1 M west and 0.3 M in other directions. Man-made structures, including towers, have been built on the feature, as seen in satellite imagery and photographs.

Historical and Anthropological Information

Namyit was reported by the British ship *Dolphin* in 1769, and surveyed by the *H.M.S. Rifleman* in 1869.[1] Tizard Bank — of which Namyit is a part — was also examined by Commander Moore of the British Navy in 1888.[2] The following year, Namyit was described as being "very small".[3]

According to an internal British government report, France claimed Namyit and several other features in the early 1930s. The British Admiralty rejected the claim, concluding it had "no basis in international law and calls for a strong protest without any further delay".[4] In opposing France's claim, the Admiralty observed that "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such wholesale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[5]

Namyit was not mentioned in the Official Journal of the French Republic describing France's claims in July 1933.[6]

Namyit was annexed by Japan in 1939,[7] and during World War II, the Japanese military occupied and built facilities on the feature.[8] In 1956, the Republic of Vietnam erected a stone monument on the feature,[9] which was reported to have been visited "by the cruisers *Tuy Dong* and *Tay Ket*" in 1962.[10] Taiwan is reported to have erected a boundary marker in 1963.[11] Following the incorporation of ten Spratly features into the Vietnamese Phuc Tuy Province in 1973, South Vietnam sent military forces to Namyit, ultimately establishing a small presence there.[12]

A Vietnamese press article quotes a villager (who was reportedly among "the first groups going to [Namyit] to do construction work") as follows:

> We were the first groups going to the island to do construction work. At the time, we had to transport to the island every single stone, every single bag of cement, construction materials to build dwellings, temples, sea walls, trenches, embankments on the island so that people could go there to live, to perform military service. These dwellings also serve as shelters for fishermen during stormy weather. After 3 months of work, we returned home. There was no resident on the island at the time and only soldiers were on it. Things were very difficult. We had to save each bowl of freshwater and shared each bucket of water to bathe and do laundry. Nourishments were mostly dry food or instant noodle.[13]

Sailing directions indicate that Namyit is "covered with small trees and bushes".[14] The feature is presently reported to contain a "stone monument[]",[15] a lighthouse,[16] "wind mills and solar panels",[17] and several unidentified structures may be seen in photographs. Seawalls have been constructed to prevent soil erosion.[18]

Weather conditions on Namyit are described as "harsh".[19] Soil has been brought from the mainland to cultivate vegetables, but concerns have been raised about the need to protect the cultivation "from salination by seawater".[20]

The Status of the Feature under UNCLOS

Namyit is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. This very small feature, which lies on a reef, has an area of only 0.094 km^2. Namyit was described by the United Kingdom in 1933 as being "uninhabitable".[21] There was no indigenous or permanent human settlement before Vietnamese armed forces occupied the feature in 1973. They are dependent upon supplies from the outside. There is no sustainable economic activity on the feature.

NAMYIT ISLAND

The Status of the Feature under UNCLOS, cont'd

With respect to the Tribunal's invitation "to elaborate on the implications of the proximity of Gaven Reef" to Namyit, the Philippines observes that Gaven Reef is a low-tide elevation.[22] Since it is located 6.4 M from Namyit, a feature above water at high tide, Gaven Reef lies within the 12 M territorial sea appurtenant to Namyit. Sovereignty over Gaven Reef, therefore, vests in the State that enjoys sovereignty over Namyit. Moreover, under Article 13(1), the territorial sea of Namyit may be drawn using Gaven Reef's low-water line as a baseline.

References

[1] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom (23 Feb. 1933), p.4. SWSP, Vol. III, Annex 364.

[2] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 44. MP, Vol. VIII, Annex 256.

[3] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), p. 590. SWSP, Vol. IV, Annex 390.

[4] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), para. 11. SWSP, Vol. III, Annex 363.

[5] *Id.*, para. 12.

[6] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[7] *Memorandum* from Japan to the United States (31 Mar. 1939), para. 1. SWSP, Vol. III, Annex 381.

[8] Bruce Elleman, "Maritime territorial disputes and their impact on maritime strategy: A historical perspective", in *Security and International Politics in the South China Sea: Towards a cooperative management regime* (S. Bateman and R. Emmers, eds., 2009), p. 48. SWSP, Vol. V, Annex 453.

[9] "2 monuments symbolizing Vietnam's sovereignty over Spratlys named national relics", *Thanh Nien News* (18 June 2014). SWSP, Vol. IV, Annex 438.

[10] Republic of Vietnam, Ministry of Foreign Affairs, *White Paper on the Hoang Sa (Paracel) and Truong Sa (Spratly) Islands* (1975), p. 3. SWSP, Vol. III, Annex 353.

[11] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 19. SWSP, Vol. V, Annex 445.

[12] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 99. SWSP, Vol. V, Annex 246(bis).

[13] "Efforts to develop Trường Sa [Spratly Islands]", *Bao Tin Tuc* (27 Apr. 2013), p. 2. SWSP, Vol. IV, Annex 426.

[14] *See* United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10 ed., 2012), p. 65. MP, Vol. VII, Annex 235.

[15] "2 monuments symbolizing Vietnam's sovereignty over Spratlys named national relics", *Thanh Nien News* (18 June 2014). SWSP, Vol. IV, Annex 438.

[16] Russ Rowlett, "Lighthouses of the Spratly Islands" *available at* https://www.unc.edu/~rowlett/lighthouse/spr.htm (accessed 11 Feb. 2015). SWSP, Vol. V, Annex 463.

[17] Marc Jason Cayabyab, "PHL neglected its territories in West PHL sea - national security analyst", *GMA News* (28 May 2013). SWSP, Vol. IV, Annex 427.

[18] David Jude Sta Ana, "Vietnam beefs up military garrisons in Spratlys", *The Philippine Star* (26 May 2011). SWSP, Vol. IV, Annex 417.

[19] "New generation birth on uninhabitable islands", *Saigon-GP Daily* (21 June 2011), p. 4. SWSP, Vol. IV, Annex 419.

[20] *Id*., p. 2.

[21] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), pp. 297-98. SWSP, Vol. III, Annex 363.

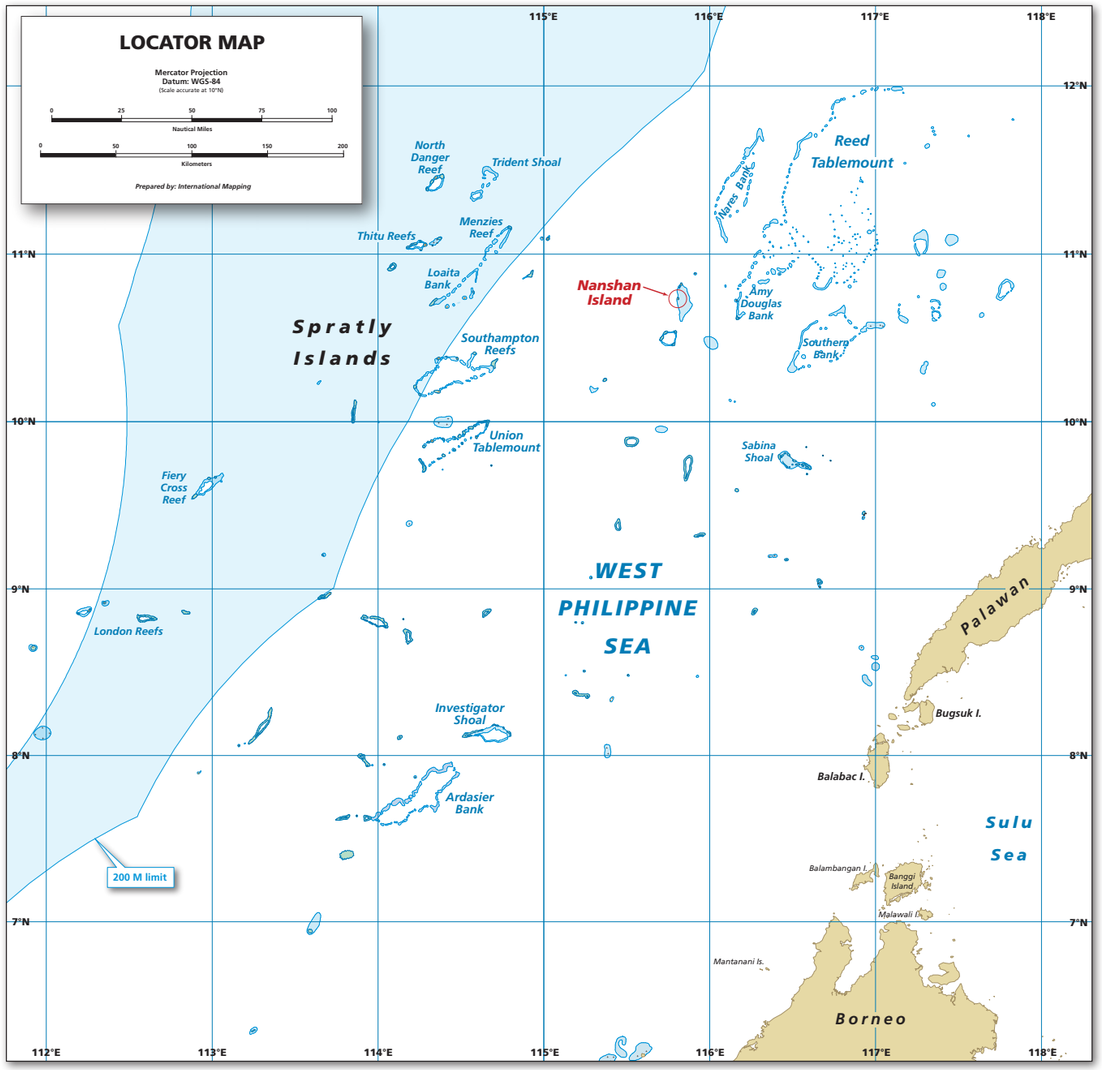
[22] See "Gaven Reef", SWSP, Vol. II.

NANSHAN ISLAND

Also known as:

Chinese: Mahuan Dao (马欢岛)
Philippine: Lawak Island

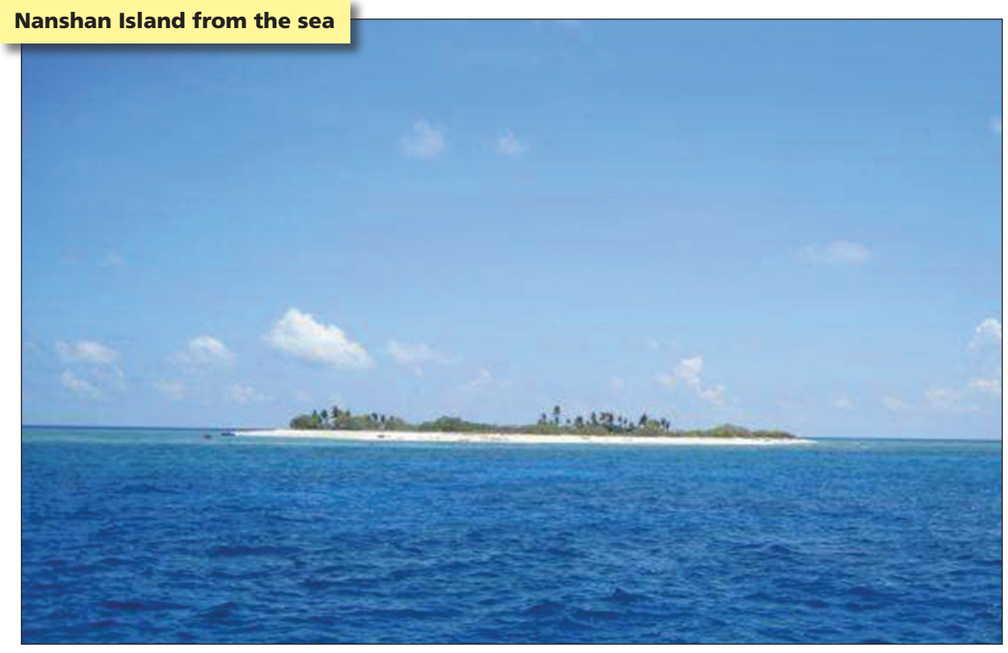
Coordinate Location: 10°44'00"N - 115°48'30"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 147.3 M
Distance to Hainan: 566.0 M
Claimed by: China, Philippines, Vietnam
Occupied by: Philippines



Satellite Image

Nanshan Island
(GeoEye, 27 December 2014)

Nanshan Island from the sea



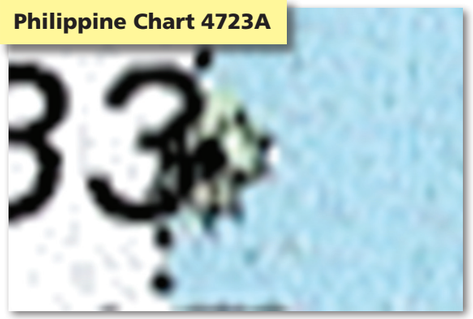
NANSHAN ISLAND

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

LAWAK ISLAND (10° 44' N, 115° 48' E), 2 meter (8 ft) high lies 0.5 mile S of Patag I. It has few coconut trees upon it. Its charted position (10° 44' N, 115° 48' E) was reported off by 0.5 mile NW when determined by GPS in 1993.

Philippine Chart 4723A

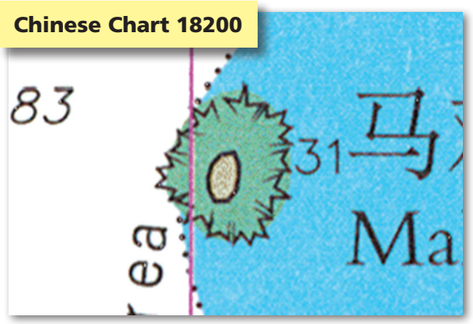


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Mahuan Island - Located approximately 6.5 nautical miles north of the northeast end of Wufang Reef, it is on the middle part of an exposed coral reef. It is on the same underwater shoal as Feixin Island. This island is very long from east to west. During low tide, its length is approximately 430 meters, its width is 290 meters, and its surface area is approximately 0.074 sq. km. The island is 2.4 meters high. Besides coconut trees growing on the island, there are no other trees. There are weeds growing there over a feet long, and vegetables can be planted. There is a water well in the center part of the island, the quality of the water is fairly good, and it is drinkable. In the past, fishermen from China's Hainan Island had once lived on the island and cultivated it.

Chinese Chart 18200



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC26

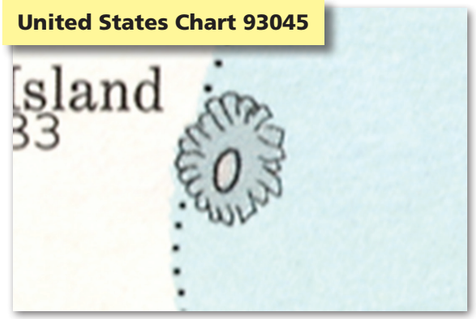
3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Nanshan Island (10°44'N., 115°49'E.), 2m high, is sandy and covered with course grass and a few coconut trees. Fishermen frequent the island. Depths of 12.8 to 21.9m are found S of Nanshan Island, however, there is a possibility of there being less water than this in the vicinity.

Flat Island lies 5 miles N of Nanshan Island. It is a low, sandy islet with a fringing reef extending about 2 miles NE and SE from it.

A large bank, with reported but unconfirmed depths of 46m, extends 8 miles SE from Flat Island and Nanshan Island. Vessels engaged in fishing may be sighted on this bank.

United States Chart 93045

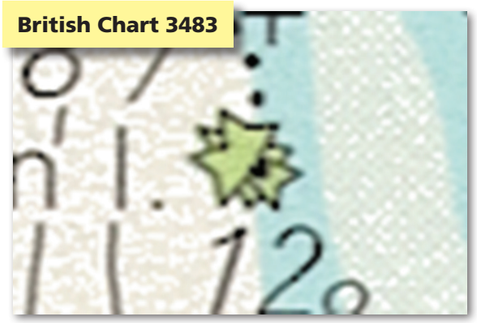


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC54

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Nanshan Island (10°44'·19N 115°48'·34E) is low, with a few coconut trees upon it.

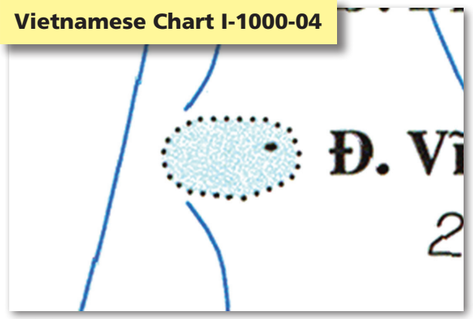
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

NANSHAN ISLAND
Additional Charts

Vietnamese Chart I-1000-04



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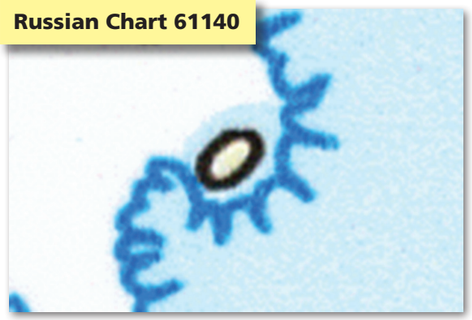
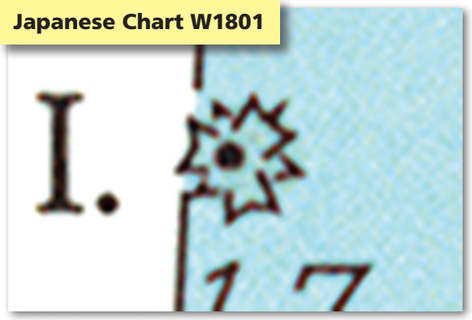
Complete chart reproduced as Annex NC64

Russian Chart 61140



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC41

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Nanshan Island is 2 metres or slightly higher, is sandy and covered with course grass, and has a few coconut trees. At low tide, according to China's sailing direction, the feature is approximately 430 metres long and 290 metres wide. In 1993, when surveyed by Global Positioning System (GPS), the charted position of the island was reported to be off by 0.5 M. As seen in satellite imagery and photographs, there are a few small structures on the feature.

Historical and Anthropological Information

Nanshan Island was presumably named after the United States vessel of the same name that conducted surveys of the area sometime before 1915, when the feature was mentioned in United States sailing directions.[1]

During 1936 and 1937, hydrographers from Japan "made 'sketch' surveys" of various features, including Nanshan Island.[2] A 1938 report from Britain's *H.M.S. Herald* concluded that Nanshan was not "suitable as landing grounds for airplanes", and that such grounds could not even be constructed "with an enormous expenditure of material and labour".[3] It also noted:

> A concrete post with characters similar to that at Thi Tu is near the centre. Three broken small mat sheds were found under the palm clump, with sacks of salt and jars of turtle oil and meat. Many old turtle shells surrounded the camp. There are two shallow wells and a Chinese shrine with joss sticks.[4]

Nanshan was annexed by Japan in 1939.[5]

The United States sailing directions report that "[f]ishermen frequent the island".[6] One scholar reports that Nanshan was originally "covered with coarse grass".[7] Sailing directions similarly describe it as covered with "course [*sic*] grass and a few coconut trees".[8]

Chinese sailing directions report that vegetables can be planted on Nanshan and that the feature contains a well with "fairly good" quality potable water.[9] A Philippine publication indicates that fishermen may "take water from [Nanshan Island's] open shallow dug well", but the same document makes clear that those on Nanshan "take their water for drinking and domestic use from the navy boats or from the rain owing to the presence of high salinity groundwater".[10] Other reports variously suggest that Nanshan has neither "fresh water [n]or significant vegetation",[11] or that it contains a "small lake of bra[c]kish water".[12]

Nanshan has been occupied and administered by the Philippines since September 1970.[13] The "military outpost" at Nanshan can only be reached by sea.[14] As of late 2012, it reportedly housed a "a small detachment of 12 soldiers" who "live by fishing and spend most of their days doing so".[15] Passing fishermen from Vietnam and the Philippines were reported to give "vegetables and fish to the soldiers".[16] Taiwanese media reporting at the end of 2014 cited a Philippine documentary as indicating the presence of only four soldiers on the feature.[17] The same documentary reportedly indicated that "a simple wooden structure has been erected on [Nanshan] and [that] army ships visit every month to bring fresh supplies and to change personnel".[18] There are seven Philippine soldiers currently stationed on Nanshan.[19]

The Status of the Feature under UNCLOS

Nanshan Island is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. It is a tiny feature, only 0.08 km^2, covered with coarse grass and a few coconut trees. Nanshan Island is occupied only by seven Philippine military personnel.[20] There is no record of prior human habitation, except for occasional visits by fishermen. No economic activity takes place there.

NANSHAN ISLAND

References

[1] U.S. Hydrographic Office, *Asiatic Pilot: The Shores of the China Sea from Singapore Strait to and including Hongkong*, Vol. IV (1915), pp. 378-379. SWSP, Vol. IV, Annex 394.

[2] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 37. MP, Vol. VIII, Annex 256.

[3] W.C. Jenk., H.M.S. Herald, United Kingdom, *Report on Suitability of Islands in China Sea for Landing Grounds* (18 Apr. 1938), p. 1. SWSP, Vol. III, Annex 374.

[4] *Id*., p. 2.

[5] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[6] United States National Geospatial-Intelligence Agency, *Pub. 161 Sailing Directions (Enroute), South China Sea and the Gulf of Thailand* (13th ed., 2011), p. 10. MP, Vol. VII, Annex 233.

[7] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 26. MP, Vol. VIII, Annex 256.

[8] United States National Geospatial-Intelligence Agency, *Pub. 161 Sailing Directions (Enroute), South China Sea and the Gulf of Thailand* (13th ed., 2011), p. 10. MP, Vol. VII, Annex 233.

[9] Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea (A103)* (2011), p. 179. SWSP, Vol. III, Annex 232(bis).

[10] Republic of the Philippines, Municipality of Kalayaan, *Brochure: Municipality of Kalayaan, Palawan, Philippines*, p. 1. SWSP, Vol. III, Annex 346.

[11] Gregory B. Poling, "Arguing Over Blocks: Do China and the Philippines both Have a Claim?", *Center for Strategic and International Studies* (16 Apr. 2012), p. 3. SWSP, Vol. V, Annex 456.

[12] Robert Beckman, "The Philippines v. China Case and the South China Sea Disputes", Asia Society / LKY SPP Conference on the South China Sea (13-15 Mar. 2013), p. 9. SWSP, Vol. V, Annex 461.

[13] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015). SWSP, Vol. III, Annex 349.

[14] J. Laude, "Strong waves prevent delivery of goods to troops in Spratlys", *The Philippine Star* (25 Dec. 2014). SWSP, Vol. IV, Annex 441.

[15] Abigail Kwok, "LAST OUTPOST: Soldiers endure loneliness, spartan living to guard remote islands in Spratlys", *Interaksyon* (25 Nov. 2012), p. 2. SWSP, Vol. IV, Annex 423.

[16] *Id*.

[17] "South China Sea rivals compared by Global Times", *Want China Times* (19 Dec. 2014), p. 3. SWSP, Vol. IV, Annex 440.

[18] *Id*.

[19] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015). SWSP, Vol. III, Annex 349.

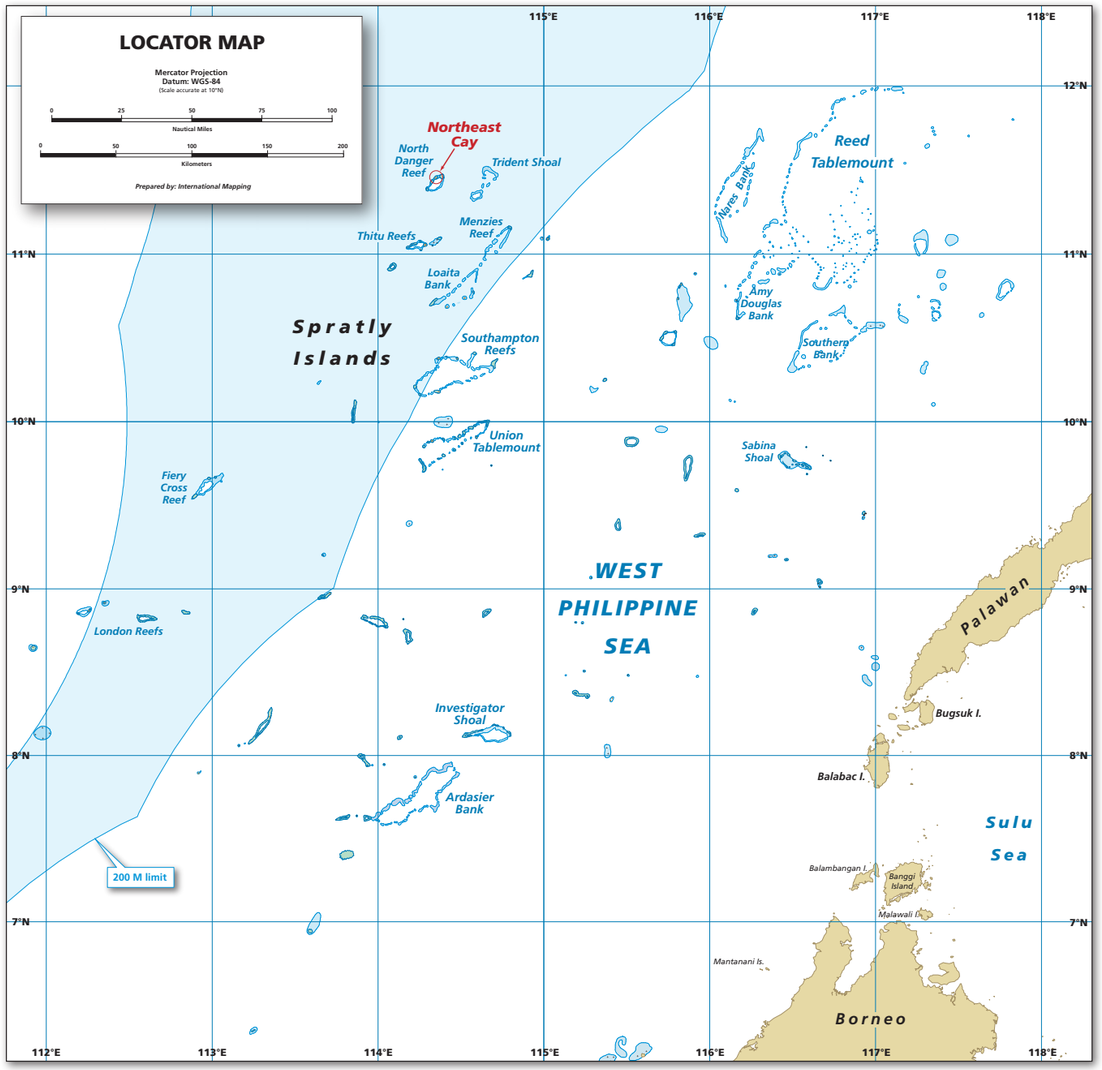
[20] *Id*., p. 2.

NORTHEAST CAY

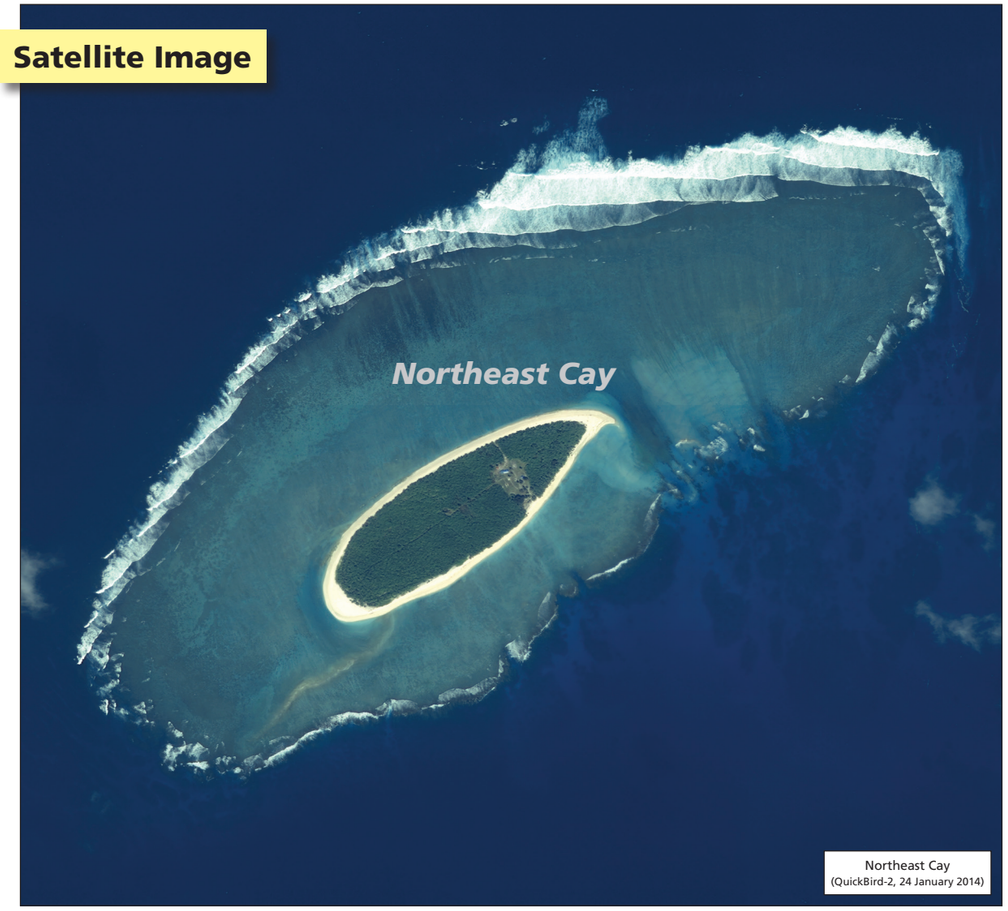
Also known as:

Chinese: Beizi Dao (北子岛)
Philippine: Parola Island

Coordinate Location: 11°27'30"N - 114°21'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 240.2 M
Distance to Hainan: 483.3 M
Claimed by: China, Philippines, Vietnam
Occupied by: Philippines



Satellite Image



Northeast Cay
(QuickBird-2, 24 January 2014)

Aerial view of Northeast Cay

Northeast Cay from the sea

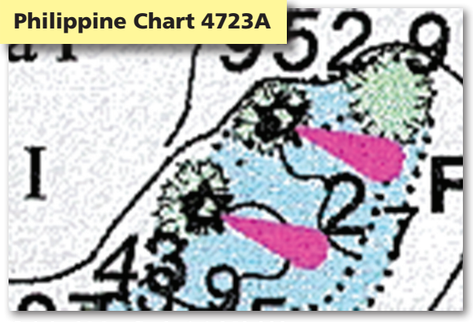
NORTHEAST CAY

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

PAROLA ISLAND, (11° 27' N, 114° 21' E), 3 meters (10ft) high, lies 1.5 miles WSW of North Reef. It is covered with coarse grass, with a fringe of low bushes round the edges. The cay is thickly wooded, with trees 6 meters to 9 meters high. It lies on a drying reef which extends 0.6 mile NE. A channel 0.3 mile wide lies between the charted 5.5 meters (3 fms) lines between the NE edges of this reef and the W extremity of North Reef. This channel should not be attempted as several shoals with depths of 3 meters (10 ft) over them, lie in the middle.

Philippine Chart 4723A

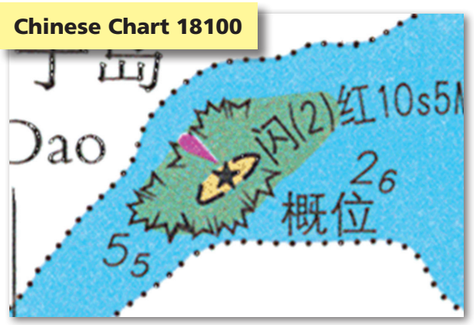


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Beizi Island - Located approximately 64 nautical miles due north of Taiping Island, with a length of 825 meters, a width of 244 meters, a surface area of 0.151 sq. km, an altitude of 3.2 meters, a tree top height of about 13 meters, and the island can be seen from approximately seven nautical miles ~ ten nautical miles away. The island is overgrown with grass, there is an abundance of trees, there are over 100 coconut trees (others say 3-5 trees). The island is 6 meters ~ 10 meters high, and it has thick-leaf trees. The island is surrounded by an 8 meters ~ 46 meters wide belt of coral sand. The south part of the island has a small temple that fishermen built by piling up coral.

Chinese Chart 18100

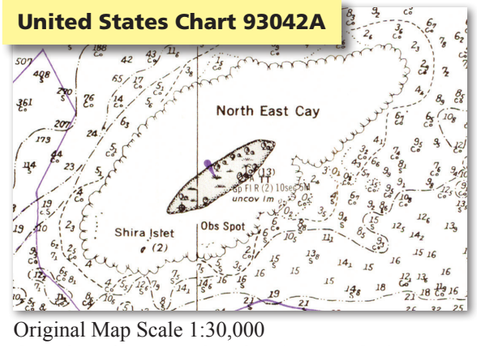


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC25

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

North East Cay (11°27'N., 114°21'E.) is about 0.4 mile long in a NE-SW direction and fringed by a drying reef extending 0.5 mile NE. It is 3m high, 91m across at its widest point, and covered with shrubs. A light is shown close NE of North East Cay. Shira Islet, a conspicuous hummock, lies about 0.2 mile SE of the observation spot on the SE end of North East Cay.

United States Chart 93042A

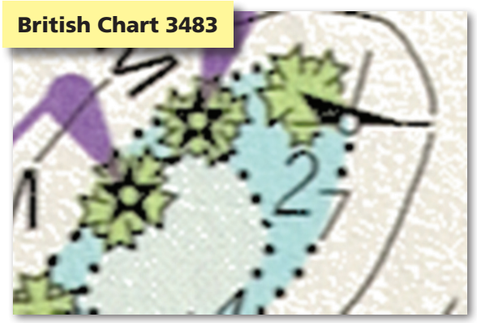


Original Map Scale 1:30,000
Complete chart reproduced as Annex NC56

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

North East Cay (11°27'·50N 114°21'·60E), is low, thickly wooded, and covered with coarse grass, with a fringe of low bushes round the edges. It lies on a drying reef which extends 6 cables NE from it. A channel, 3 cables wide, lies between this reef and the W extremity of North Reef 1 ¼ miles E; several shoals lie in the middle of this channel, which should not be attempted. A light is exhibited at the N end of North East Cay.

British Chart 3483



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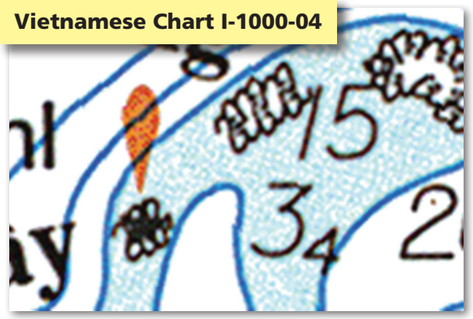
Complete chart reproduced as Annex NC1

NORTHEAST CAY

Additional Charts

Vietnamese Chart I-1000-04



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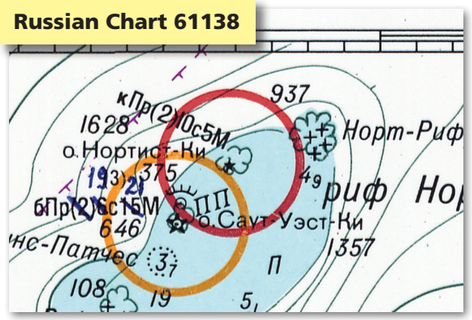
Complete chart reproduced as Annex NC64

Russian Chart 61138



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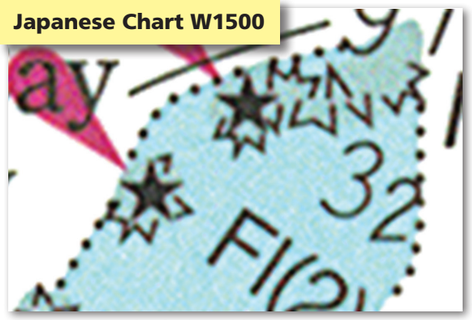
Complete chart reproduced as Annex NC40

Japanese Chart W1500



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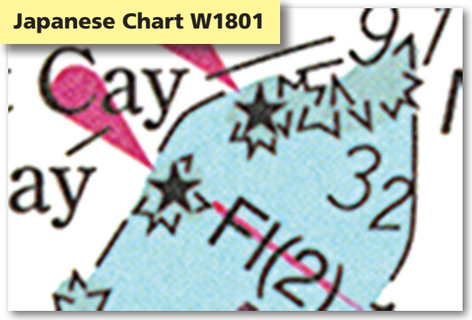
Complete chart reproduced as Annex NC8

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Geographic/Hydrographic Observations by Dr. Robert Smith

Northeast Cay, according to the Chinese sailing directions, is 825 metres long, 244 metres wide, with an area of 0.151 sq. km^2. The feature lies on a reef that extends 0.6 M to the northeast that dries at low water. It is covered with coarse grass, has a fringe of low bushes around the edges, and has trees 6 to 9 metres high. As seen on satellite imagery and photographs, there is at least one low-lying structure on the northern part of the cay.

Historical and Anthropological Information

North Danger Reef, of which Northeast Cay is a part, was reported by the British ship *South Sea Castle* in 1762, and again by the *Luoania* in 1764.[1] It was surveyed by the British in 1814, and re-surveyed by the *H.M.S. Rifleman* in 1865.[2] A description of Northeast Cay, written in 1889, notes that the cay was "frequented by Chinese fishermen from Hainan, who collect bêche-de-mer and turtle shell", and who "supplied themselves with water from a well near" the feature's center.[3] The *H.M.S. Iroquois* again surveyed the area in 1925.[4]

In 1933, Northeast Cay was claimed by France[5] and attached to the Baria Province.[6] It was then surveyed by the Japanese navy in 1936,[7] and annexed by Japan in 1939.[8] Although the Japanese reportedly occupied and built facilities upon Danger Reef during World War II, it is unclear whether this occurred on Northeast Cay.[9]

Northeast Cay was unoccupied after World War II, until it was ultimately occupied by the Philippines in April 1971.[10] Still administered by the Philippines, Northeast Cay hosts a "small garrison".[11] The feature does not have a harbour or jetty for larger ships, "so supplies have to be loaded onto small boats and ferried to shore".[12]

Northeast Cay has been described as "particularly depressing", with Philippine soldiers keeping busy by "tending vegetables, harvesting coconuts, and fishing" so as to "fight the boredom and loneliness in the months between the supply boat's visits".[13]

Rainwater is the "only source of potable water"[14] on Northeast Cay. The Philippines "has only built a few simple structures"[15] on the feature, which houses a lighthouse.[16] Chinese Sailing Directions from 2011 state that the southern portion of the feature contains a "small temple" constructed by fishermen using coral.[17]

The Status of the Feature under UNCLOS

Northeast Cay is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. This very small feature, which lies on a reef that dries at low water, has, according to the Chinese sailing directions, an area of only 0.151 km^2. Northeast Cay has never had a permanent or indigenous population, and until occupied by the Philippines military in 1971, the only human activity was occasional visits by fishermen. Northeast Cay now hosts a small Philippines military garrison comprised of seven personnel, dependent on supplies from outside.[18] There is no economic activity.

NORTHEAST CAY

References

[1] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom (23 Feb. 1933), p. 315. SWSP, Vol. III, Annex 364.

[2] *Id*.

[3] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), p. 593 SWSP, Vol. IV, Annex 390.

[4] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 36. MP, Vol. VIII, Annex 256.

[5] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[6] French Republic, Governor of Cochin China, *Decree* (21 Dec. 1933), *reprinted in* Monique Chemillier-Gendreau, *Sovereignty over the Paracel and Spratly Islands*, Art. 2. SWSP, Vol. III, Annex 352.

[7] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 47. MP, Vol. VIII, Annex 256.

[8] *Memorandum* from Japan to the United States (31 Mar. 1939), p. 3. SWSP, Vol. III, Annex 381.

[9] Bruce Elleman, "Maritime territorial disputes and their impact on maritime strategy: A historical perspective", in *Security and International Politics in the South China Sea: Towards a cooperative management regime* (S. Bateman and R. Emmers, eds., 2009), p. 48. SWSP, Vol. V, Annex 453.

[10] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015). SWSP, Vol. III, Annex 349.

[11] Russ Rowlett, "Lighthouses of the Spratly Islands" *available at* https://www.unc.edu/~rowlett/lighthouse/spr.htm (accessed 11 Feb. 2015). SWSP, Vol. V, Annex 463.

[12] *Cf.* Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 104. SWSP, Vol. V, Annex 459.

[13] *Id*., p. 103.

[14] Republic of the Philippines, Naval Defense Forces, *Philippine Ports and Harbors, Special Edition: Kalayaan Island Group* (Mar. 1988), p. 8. SWSP, Vol. III, Annex 347.

[15] "South China Sea rivals compared by Global Times", *Want China Times* (19 Dec. 2014). SWSP, Vol. IV, Annex 440.

[16] Russ Rowlett, "Lighthouses of the Spratly Islands" *available at* https://www.unc.edu/~rowlett/lighthouse/spr.htm (accessed 11 Feb. 2015). SWSP, Vol. V, Annex 463.

[17] Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea (A103)* (2011), p. 175. SWSP, Vol. III, Annex 232(bis).

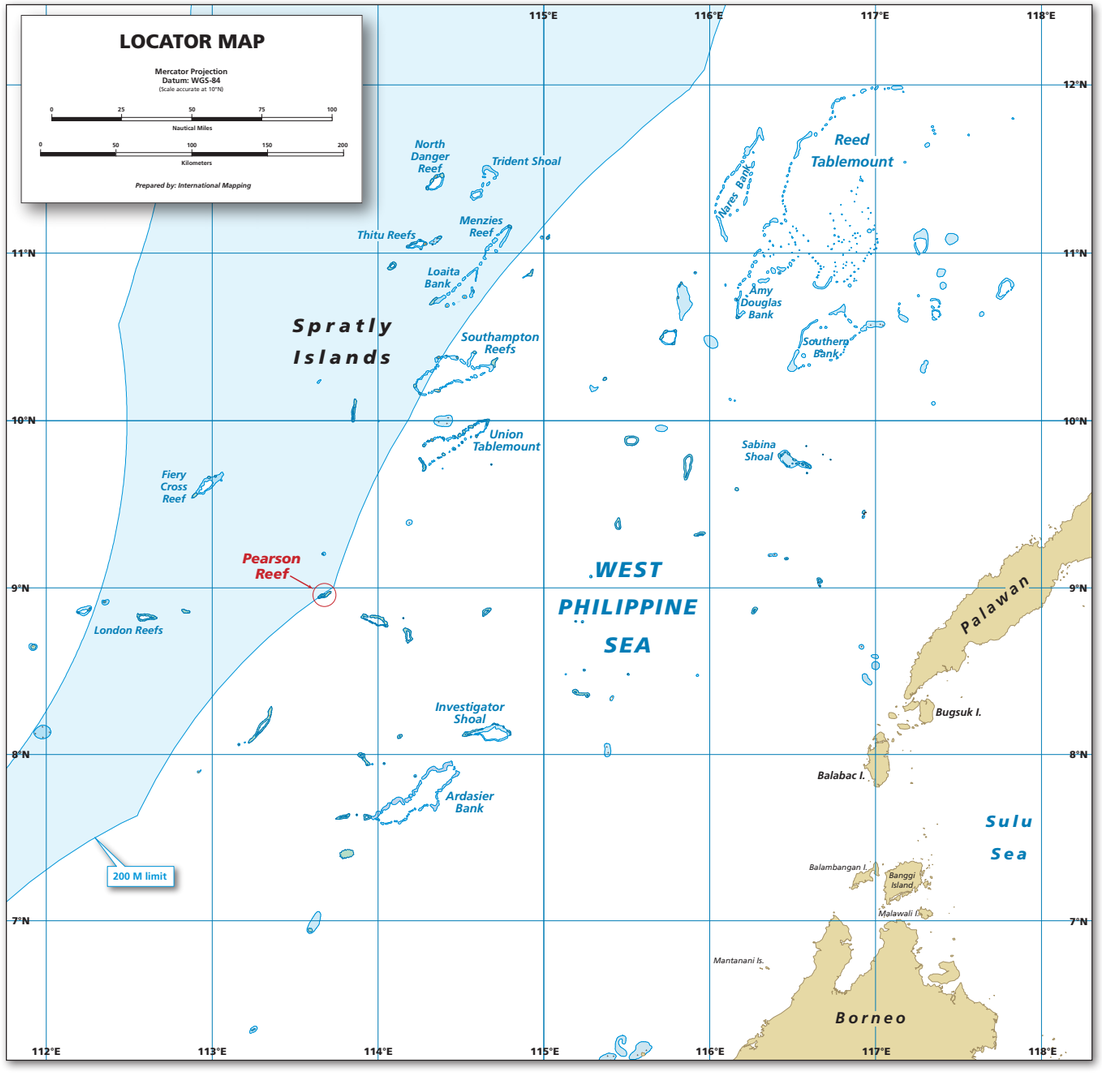
[18] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

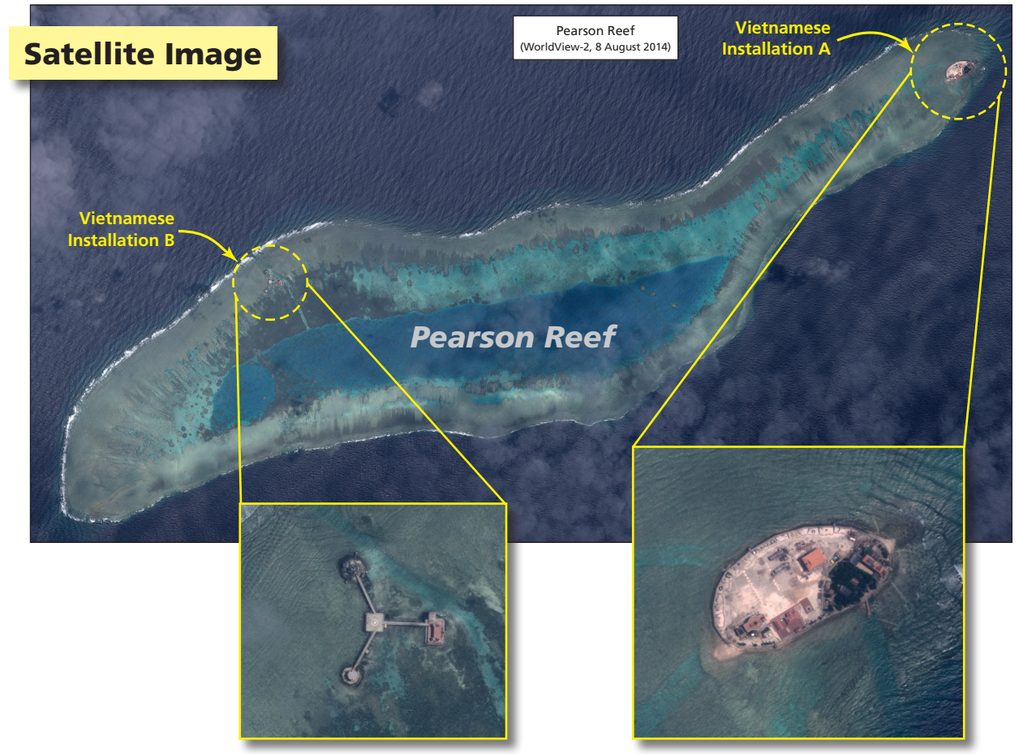
PEARSON REEF

Also known as:

Chinese: Bisheng Jiao (毕生礁)
Philippine: Hizon

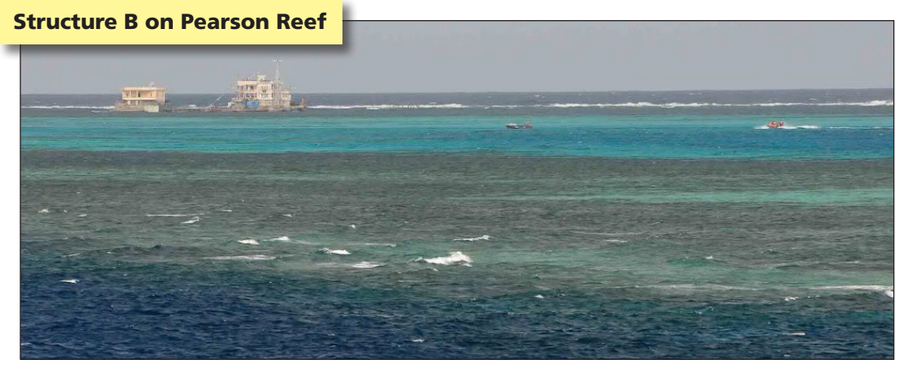
Coordinate Location: 08°57'00"N - 113°40'30"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 200.7 M
Distance to Hainan: 597.4 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam





Structure A on Pearson Reef

Structure B on Pearson Reef



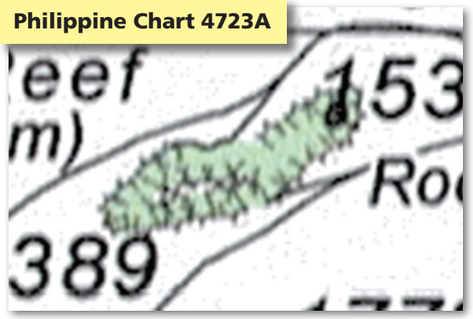
PEARSON REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

HIZON REEF dries and lies with its SW extremity (8° 56' N, 113° 40' E) 107 miles S of Maralie Reef. It encloses a lagoon to which there is no apparent entrance, but may be accessible to boats at HW. There is a sand cay, 1 meter high, on the NE extremity. The standard wreck of a steamship (2280 tons) lies on the NW end of Hizon Reef.

Philippine Chart 4723A

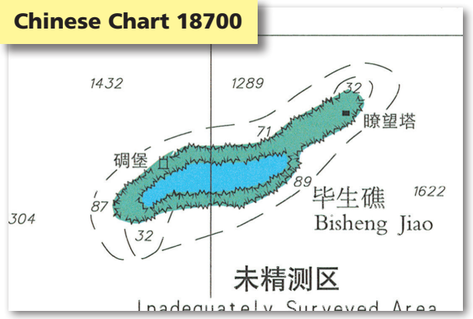


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Bisheng Reef - Located approximately 15 nautical miles south by east of Shipan Zi, it is an exposed atoll with a length of approximately 6 nautical miles and a width of approximately 2 nautical miles. There are two sandbanks on the atoll which are all coral sand beaches, there is no vegetation, and the seabirds make a habitat there. The sandbanks located to the northeast of the atoll are approximately 1.8 meters. Those in the southwest part are 0.9 meters high. 2 nautical miles east are three reef rocks 1.5-meter high. Within the atoll there is a lagoon with very deep water. Except for one entrance on the south side available for boats to enter and exit, there are no other entry points.

Chinese Chart 18700



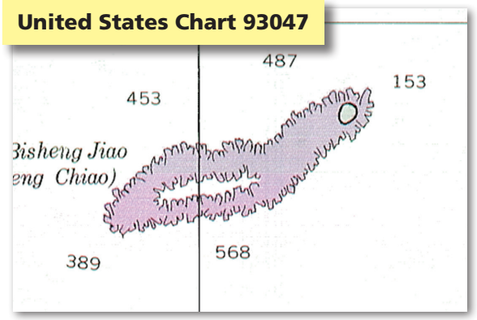
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Pearson Reef (8°59'N., 113°42'E.) is a drying steep-to atoll about 5 miles long in a WSW direction and 1 mile wide. It encloses a lagoon to which there is no apparent entrance.

There is a sand cay on the NE extremity of the reef. On the NW side of the reef is a stranded wreck.

United States Chart 93047



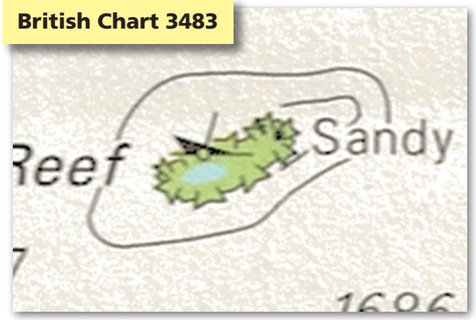
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Pearson Reef (8°57'·48N 113°41'·57E), which dries, encloses a lagoon to which there appears to be no entrance, but it is probably accessible to boats at HW.

There is a low sand cay on the NE extremity of the reef, and a stranded wreck lies on the NW end.

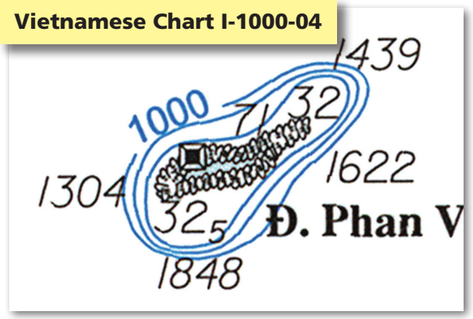
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

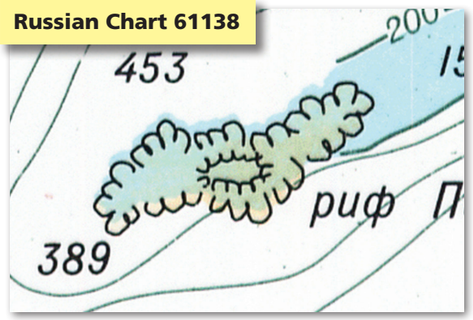
PEARSON REEF
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



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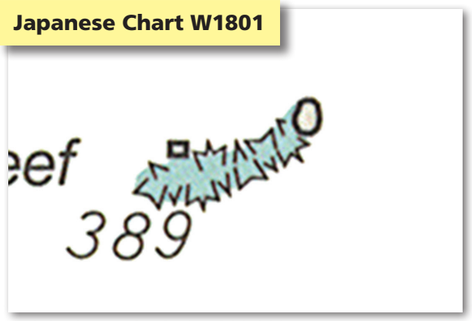
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Pearson Reef is approximately 5 M long and 1 M wide. There are two sandbanks located at the northeast part of the atoll, approximately 1.8 metres in height. The exposed feature is comprised of coral and sand. There is no vegetation. Most of the nautical charts and the satellite imagery show this feature as remaining bare at high water. The Japanese and Vietnamese nautical charts show an undefined square figure in the northwest part of the reef, which represents one of the man-made structures that have been built on the reef. The satellite imagery and photographs show several structures, one in the northeast where the sandbanks are located and three on the western side of the reef. Foundation materials have been laid on the sand and shallow water seafloor.

Historical and Anthropological Information

In 1879, *The China Sea Directory* reported that Pearson Reef "was seen in 1843 by Mr. Pearson, commanding the *Bahamian*, who reported that he passed about 3 miles to windward of an extensive shoal in the above position, about 2 miles long in a north and south direction, with some rocks above water on the southern edge".[1] An internal British memorandum dated 12 November 1937 stated that Pearson Reef was three feet above the high water mark.[2]

Pearson Reef was occupied by Vietnamese military forces in 1978, which remain on the feature.[3] Vietnamese archaeologists claim to have discovered Vietnamese pottery shards from the 13th and 19th century.[4]

The Status of the Feature under UNCLOS

Pearson Reef is a rock as defined in Article 121(3) because it cannot support human habitation or economic life of its own. This small feature, 0.03 km^2, consists of a drying reef enclosing a lagoon with no entrance, but according to the Philippine chart may be accessible at high tide. There is a small sand cay on the northeast part of the atoll. There is no record of human settlement on Pearson Reef prior to its occupation by Vietnamese forces in 1978.[5] There is no economic activity on the feature and the military personnel who are stationed on the feature are dependent on supplies from outside.

PEARSON REEF

References

[1] United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 289. SWSP, Vol. IV, Annex 389.

[2] *Memorandum* to Admiralty, United Kingdom (12 Nov. 1937). SWSP, Vol. III, Annex 372.

[3] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 13. MP, Vol. VIII, Annex 256; David Jude Sta Ana, "Vietnam beefs up military garrisons in Spratlys", *The Philippine Star* (26 May 2011). SWSP, Vol. IV, Annex 417.

[4] Tran Dang, "Ancient Vietnamese artifacts found in Spratlys", *Thanh Nien Daily* (28 Sept. 2014). SWSP, Vol. IV, Annex 439.

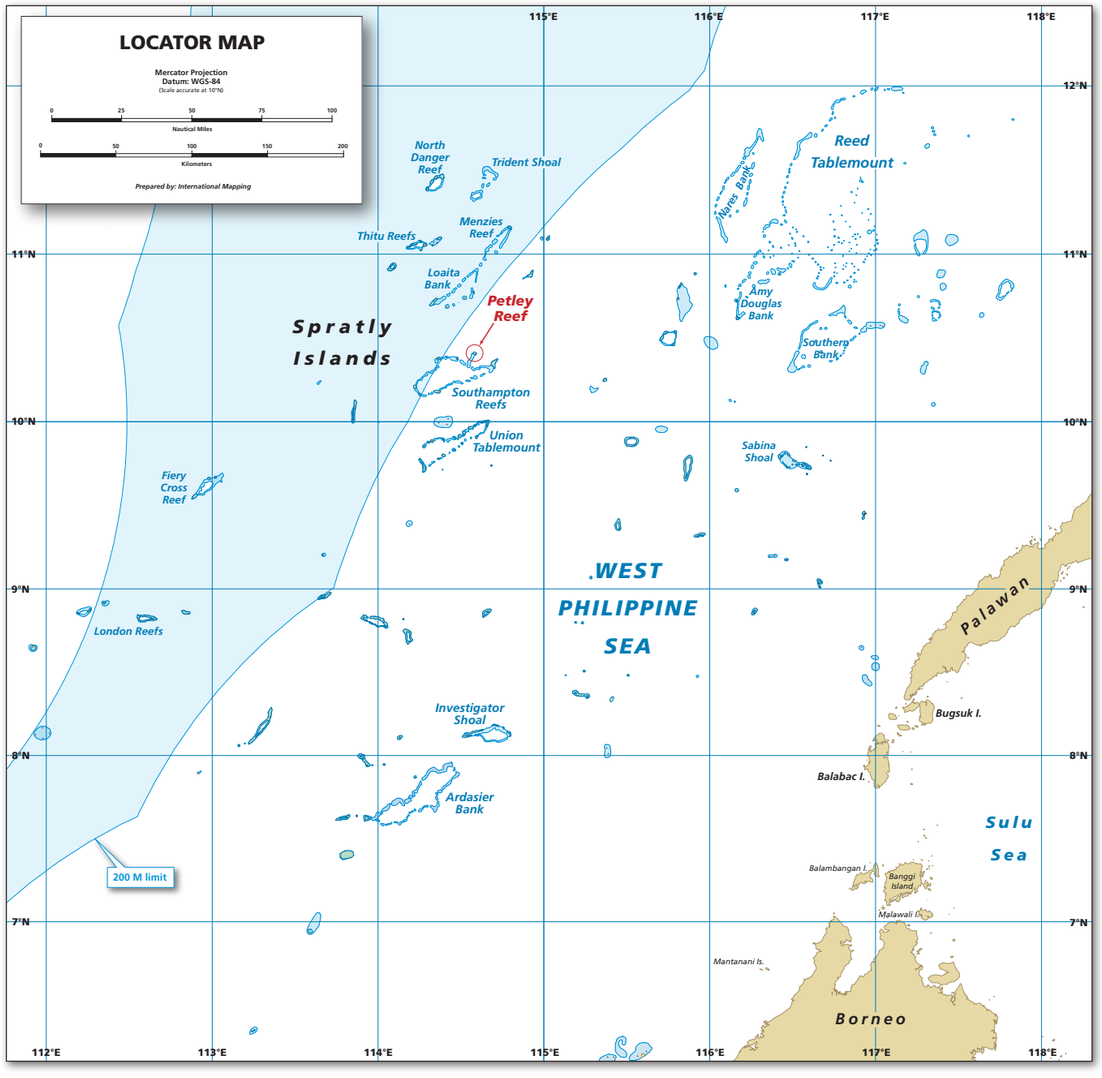
[5] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 13. MP, Vol. VIII, Annex 256; David Jude Sta Ana, "Vietnam beefs up military garrisons in Spratlys", *The Philippine Star* (26 May 2011). SWSP, Vol. IV, Annex 417.

PETLEY REEF

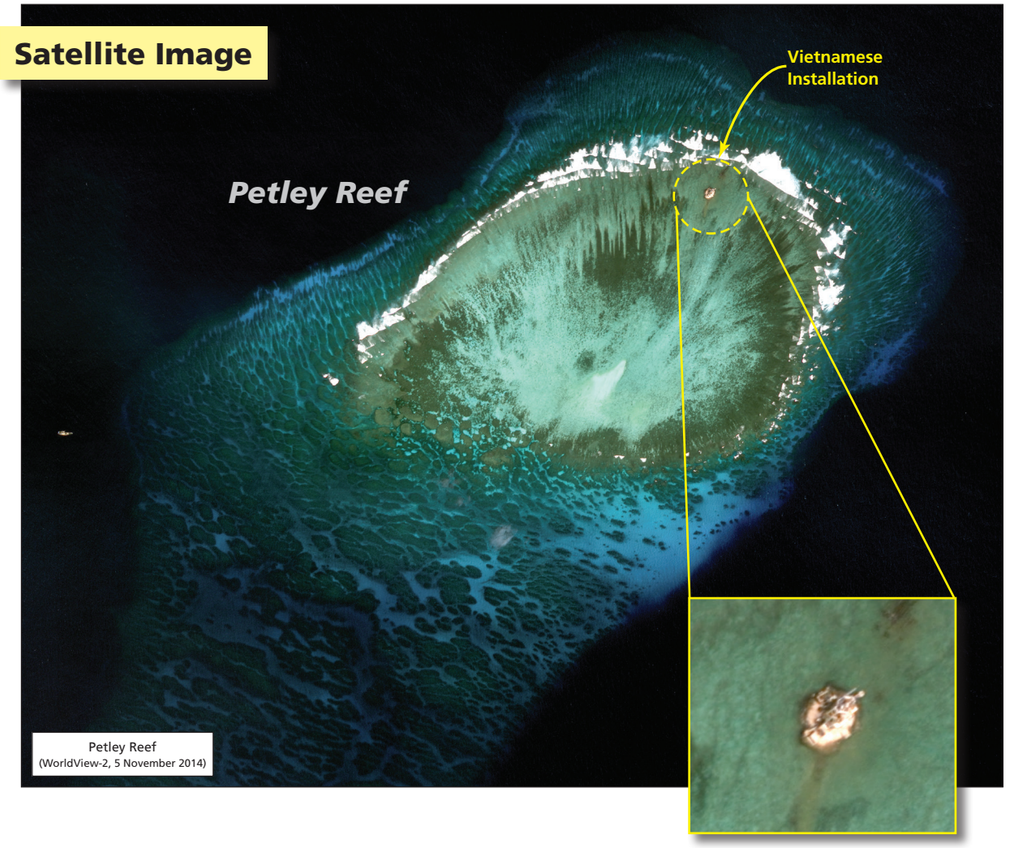
Also known as:

Chinese: Bolan Jiao (舶兰礁)
Philippine: Juan Luna

Coordinate Location: 10°24'30"N - 114°35'00"E
Nearest High Tide Feature: Sand Cay, 5.7 M
Distance to Palawan: 190.5 M
Distance to Hainan: 544.1 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Satellite Image



Petley Reef
(WorldView-2, 5 November 2014)

Petley Reef

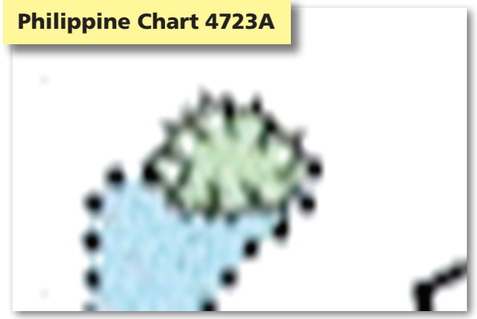
PETLEY REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

PETLEY REEF lies near the extremity of a steep-to coral ledge and extends 5 miles from the NE side of Tizard Bank. Several shoals, with depths of from 5.5 meter to 8.5 meters (18 to 23 ft) over them lies on this ledge.

Philippine Chart 4723A

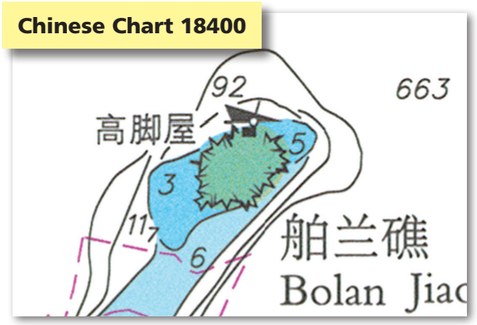


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Bolan Reef - Located approximately six nautical miles east-northeast of the Dunqian Sandbank, it is one end of the coral reef. It is an underwater atoll and is very steep. On this reef there are many submerged shoals with a water depth of 3.5 meters ~ 8.5 meters.

Chinese Chart 18400

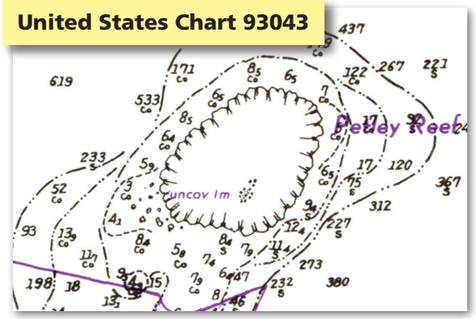


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Petley Reef, which dries 0.9m, is about 1 mile in extent and lies on the N side of Tizard Bank. Eldad Reef, 7 miles ESE of Petley Reef, is the easternmost drying reef of the group. The reef is 4.5 miles long with the middle section having a depth of about 1.2m, located at the NE end of the reef.

United States Chart 93043

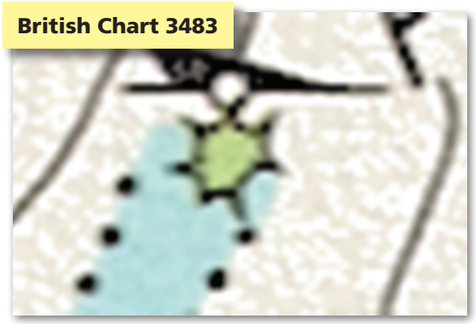


Original Map Scale 1:75,000
Complete chart reproduced as Annex NC51

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Petly Reef (10°24'·73N 114°34'·62E) lies near the extremity of a steep-to coral ledge which extends 5 miles NE from the NE side of Tizard Bank. Several shoals lie on this ledge. A stranded wreck lies on the N edge of the reef.

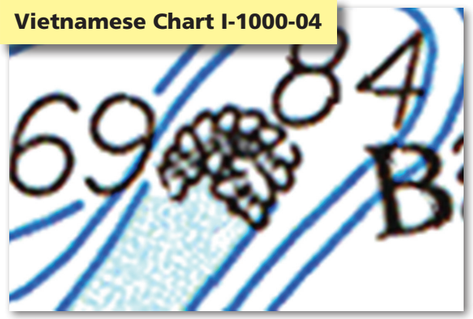
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

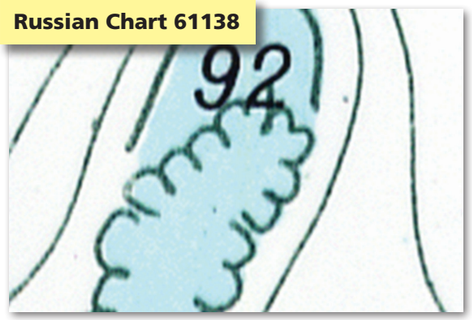
PETLEY REEF
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Petley Reef extends 5 M in length from the northeast side of Tizard Bank. The U.S. nautical chart shows a rock in the south-central part of the reef drying to 1 metre above water at low water. No other nautical charts makes reference to this rock. A shipwreck is located at the reef's northern tip. As shown on satellite imagery and the photograph, a man-made structure has been built on the drying reef and in the shallow water.

Historical and Anthropological Information

Petley Reef is on Tizard Bank, at least parts of which were reported by the British ship *Dolphin* in 1767, and surveyed by the *H.M.S. Rifleman* in 1867.[1] The Bank was also examined by Commander Moore in 1888.[2] Petley Reef itself was described, in sailing directions published the following year, as an "an oval-shaped patch a little over 1 mile in extent".[3]

France claimed "Tizard Reef" and several other features in the early 1930s.[4] The British Admiralty rejected the claim in February 1933, concluding it had "no basis in international law and calls for a strong protest without any further delay".[5] In opposing France's claim, the Admiralty observed that "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[6]

The Official Journal of the French Republic describing France's claims in July 1933 did not mention Petley Reef by name.[7]

During World War II, Japan occupied and built facilities on Tizard Bank.[8] It is unclear whether any of Japan's activities occurred on Petley Reef.

No record has been found of human habitation prior to 1988, when Petley Reef was occupied by Vietnam.[9] A Vietnamese article notes that, to "farm vegetables", Petley Reef "soldiers need to import small bags of soil from the mainland". Therefore, the "soldiers are faced with some challenges in farming vegetables".[10]

The Status of the Feature under UNCLOS

Petley Reef is a low-tide elevation under Article 13. The U.S. nautical chart shows a rock in the south-central part of the reef drying to 1 metre at low water. It is 190.5 M from Palawan, and 5.7 M from the nearest high-tide feature, Sand Cay.

PETLEY REEF

References

[1] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom (23 Feb. 1933), p. 4. SWSP, Vol. III, Annex 364.

[2] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 44. MP, Vol. VIII, Annex 256.

[3] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), p. 589. SWSP, Vol. IV, Annex 390.

[4] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), para. 11. SWSP, Vol. III, Annex 363.

[5] *Id*.

[6] *Id*., para. 12.

[7] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[8] Bruce Elleman, "Maritime territorial disputes and their impact on maritime strategy: A historical perspective", in *Security and International Politics in the South China Sea: Towards a cooperative management regime* (S. Bateman and R. Emmers, eds., 2009), p. 48. SWSP, Vol. V, Annex 453.

[9] M. Valencia, et al., *Sharing the Resources of the South China Sea* (1997), p. 232. SWSP, Vol. V, Annex 448.

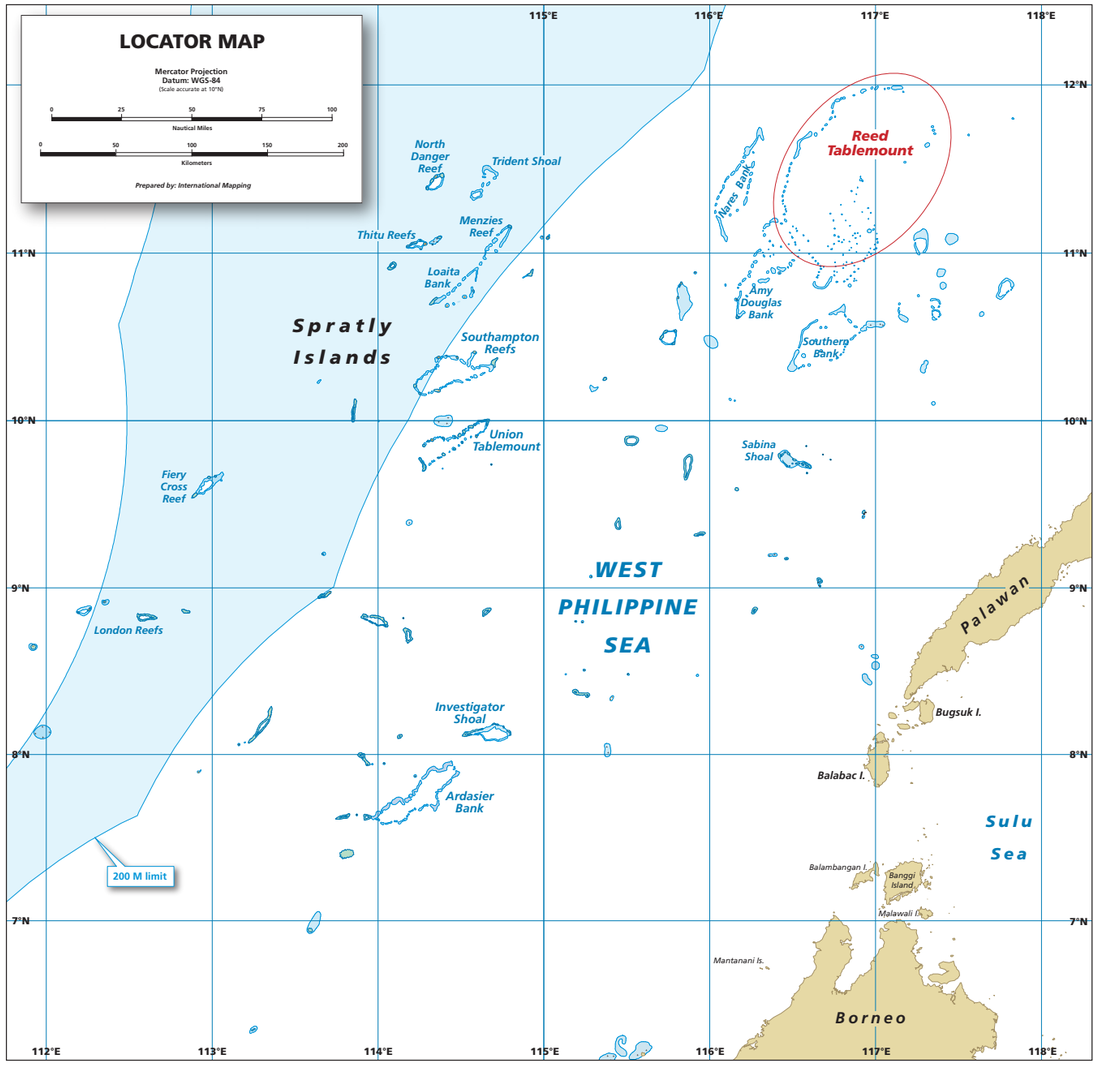
[10] "East Sea: Coming to Da Thi Island (Petley Reef), to face Chinese ships," *BDN*, p. 4. SWSP, Vol. IV, Annex 398.

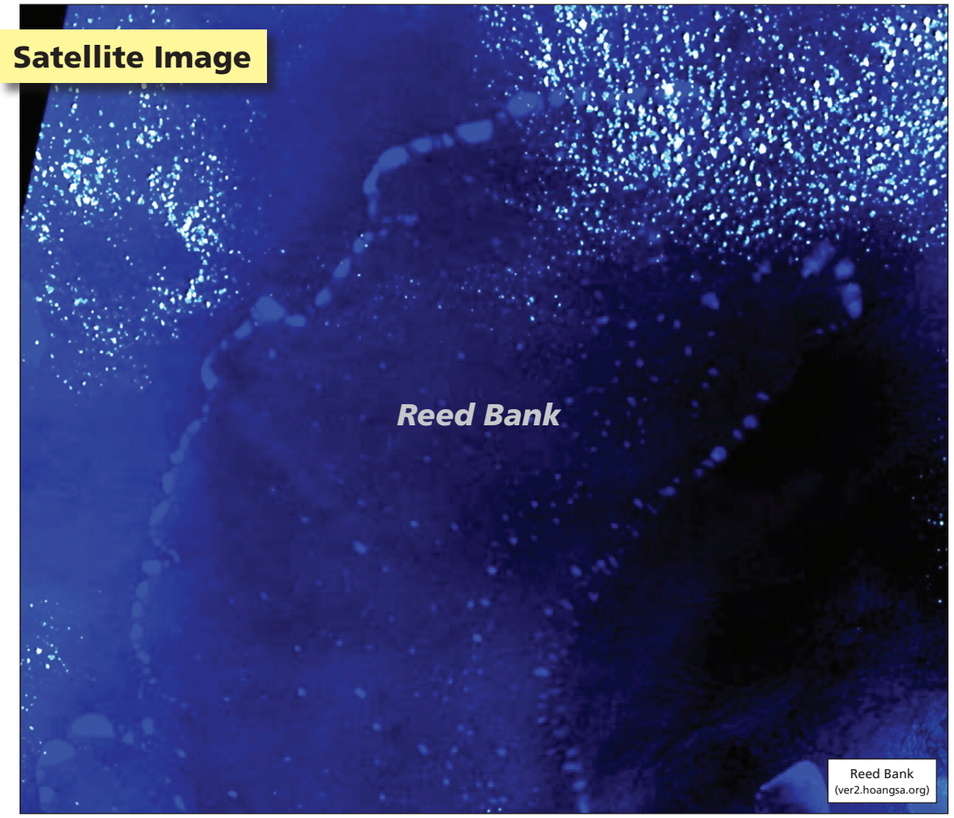
REED BANK

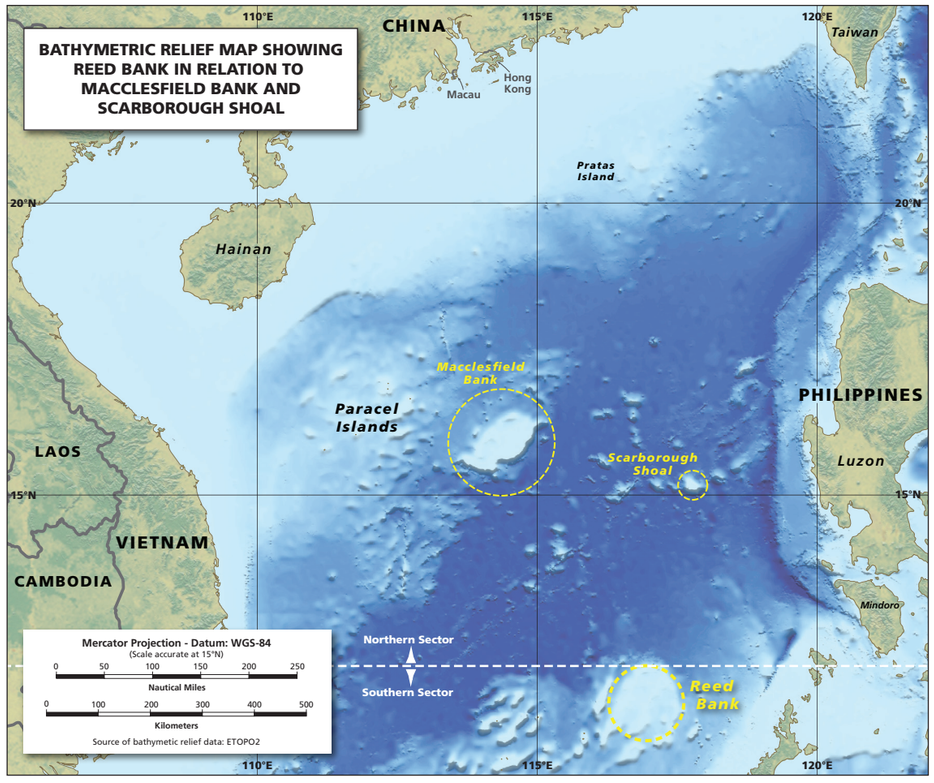
Also known as:

Chinese: Liyue Tan (礼乐滩)
Philippine: Recto

Coordinate Location: 11°20'00"N - 116°50'00"E
Nearest High Tide Feature: Flat Island, 21.0 M
Distance to Palawan: 82.9 M
Distance to Hainan: 547.9 M
Claimed by: China, Philippines
Occupied by: Unoccupied







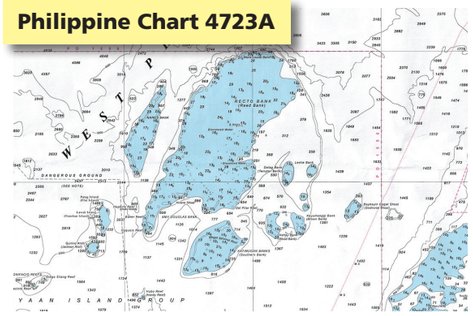
REED BANK

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

RECTO BANK lies approximately 30 miles NW of N extremity of Dalag Bank. Its limits have not been defined. A depth of 21 meters was found and patch of discolored water 5 miles SE was reported. Marie Louise (11° 55' N, 116° 47' E) a bank with a depth of 27 meters (l5 fm.) over it was reported to lie 30 miles NNW of the 21 meters shoal on Recto Bank.

Philippine Chart 4723A



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

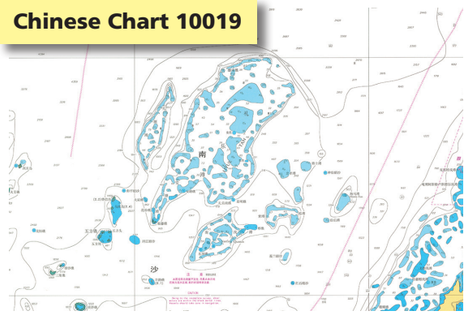
2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Liyue Bank - It is the largest underwater shoal among the Nansha Islands. Located at the northeast end of the Nansha Islands, it is an irregular shoal, and it only has partially exposed reefs and submerged reefs at the southwest end and northeast end. This bank's maximum length from northeast to southwest is approximately 97 nautical miles, and its maximum width is approximately 66 nautical miles. The north end is Xiongnan Reef with a water depth of 18.2 meters. The southeast end is Yangming Reef, which is an exposed reef. The southwest end is Houteng Reef, which is a group of submerged reefs. The west side is Dayuan Reef. It is a shoal that is trending from northeast to southwest and is shallower than 30 meters.

…

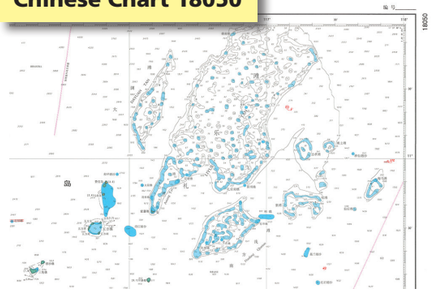
There are many submerged shoals and shallow shoals on the east side of the Liyue Bank and Nanfang Shoal, including Zhongxiao Bank, Yongshi Bank, Shenxian Submerged Shoal, Haima Bank, Xianhou Bank, and Zong Bank.

Chinese Chart 10019



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC3

Chinese Chart 18050

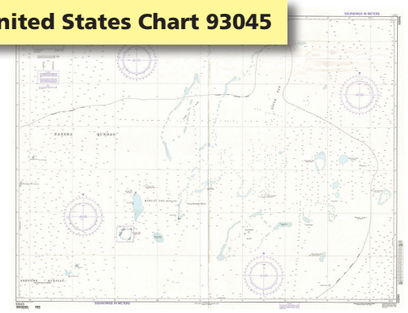


Original Map Scale 1:800,000
Complete chart reproduced as Annex NC21

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Not included.

United States Chart 93045



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC54

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

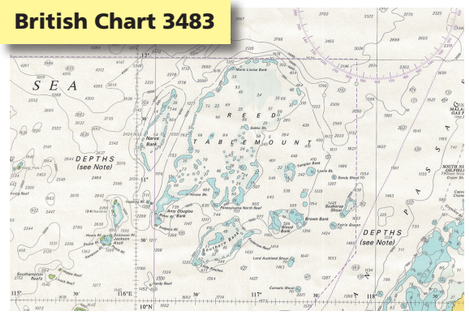
Reed Tablemount (Reed Bank) (11°23'·00N 116°52'·00E) is a large bank, the limits of which have not been determined. A reef (10°48'·03N 16°39'·23E), with a least known depth of 16·5 m (54ft), lies near its S extremity. Pennsylvania North Reef (10°50'·14 N 116°49'·44 E) has 17·8 m (58ft) of water, and a dangerous rock, shown on the chart, lies 2 miles SE.

Sekko Shoal (11°26'·16N 116°54'·74E) with a depth of 22 m (12 fm), lies near the centre of Reed Tablemount. Shoals with depths of 10 to 15 m (33 to 49 ft), lie between Sekko Shoal and Pennsylvania North Reef.

A 14·6 m (48 ft) patch lies at 11°30'·84N 116°31'·56E.

Marie Louise Bank (11°50'·81N 116°48'·25E), a bank near the N extremity of Reed Tablemount with a depth of 18 m (59 ft), was reported in 1885.

British Chart 3483

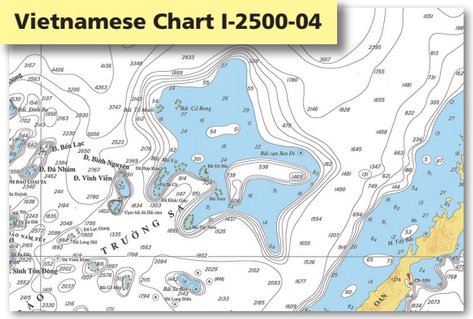


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

REED BANK

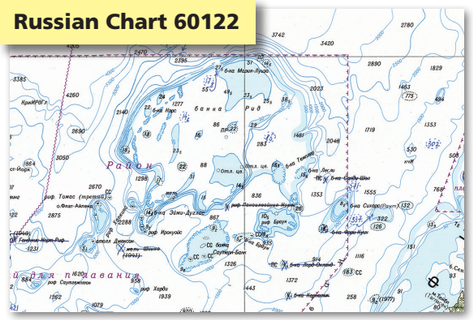
Additional Charts

Vietnamese Chart I-2500-04



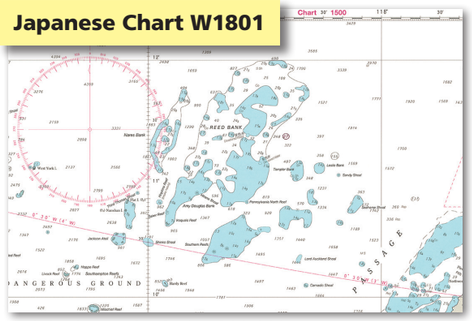
Original Map Scale 1:2,500,000
Complete chart reproduced as Annex NC66

Russian Chart 60122



Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC35

Japanese Chart W1801



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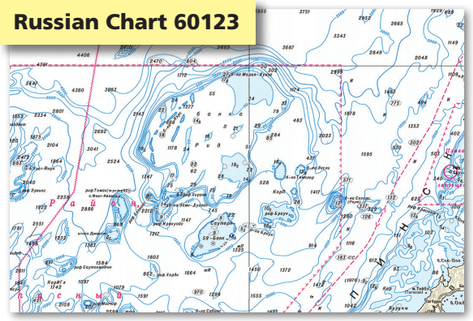
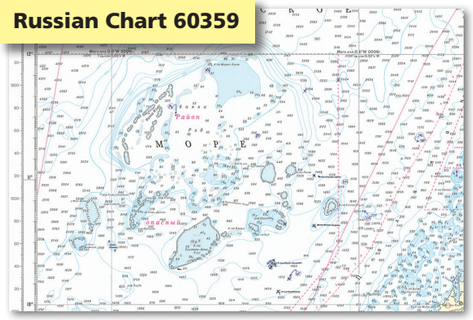
Russian Chart 60123



Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC36

Russian Chart 60359



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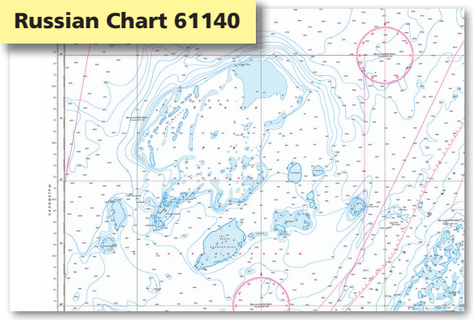
Russian Chart 61140



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC41

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Reed Bank is a shoal that spreads out to the west of Palawan Passage. Its maximum length from northeast to southwest is approximately 97 M, and it is about 66 M at its widest. The China Sea Pilot references a reef in the southern edge, where it reports that its least known depth is 16.5 metres. The entire bank is submerged with depths ranging from about 5 metres to approximately 27 metres. There are no man-made structures.

The Status of the Feature under UNCLOS

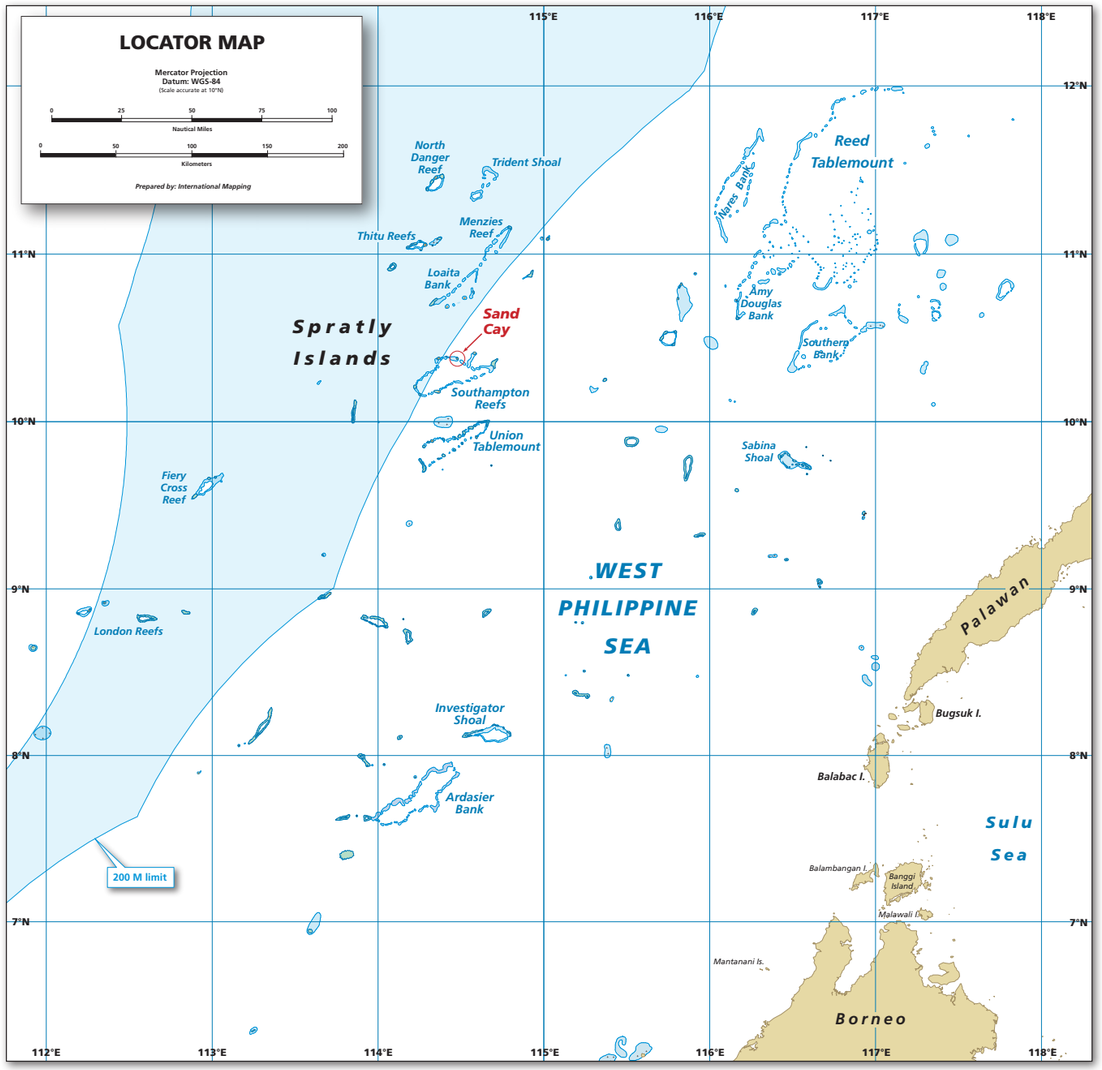
Reed Bank is a submerged feature because the entire bank is submerged at low tide; depths range from 5 to approximately 27 metres.

SAND CAY

Also known as:

Chinese: Dunqian Shazhou (敦谦沙洲)
Philippine: Bailan

Coordinate Location: 10°22'40"N - 114°28'40"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 194.9 M
Distance to Hainan: 543.1 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Satellite Image

Sand Cay
(WorldView-2, 26 October 2014)

Man-made features on Sand Cay at water level

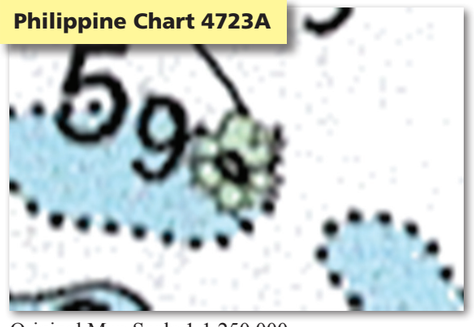
SAND CAY

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Not included.

Philippine Chart 4723A

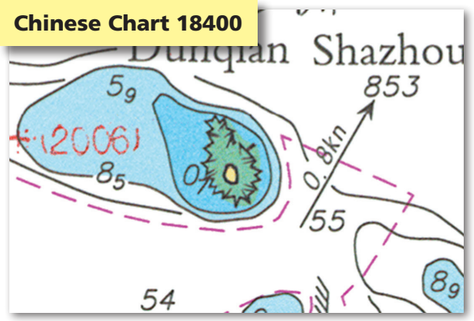


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Dunqian Sandbank - Located 6.5 nautical miles east of Taiping Island, during low tide, the length is approximately 450 meters, the width is approximately 130 meters, and the surface area is 0.1 sq. km. It is 4.5 meters high, and there is no freshwater on the island. There is a shallow shoal between Taiping Island and the sandbank. There is a round-shaped coral reef on the shoal, its diameter is approximately seven chains, and it is submerged during high tide. The waterway between the sandbank and this reef is a good anchoring ground, and the water depth is 12.8 meters ~ 18 meters.

Chinese Chart 18400



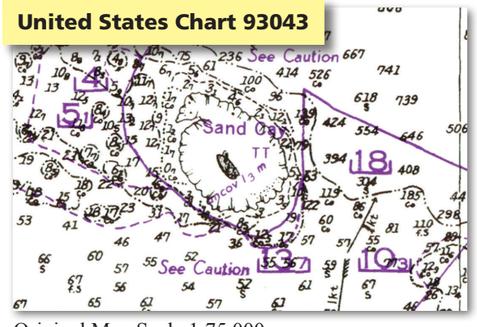
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

[In relation to] Gaven Reefs …

Anchorage can be taken, in 13 to 18m, between Sand Cay and the drying reef to the W. Vessels having local knowledge can anchor in convenient depths within the various passes of Tizard Bank, having due regard for conditions of wind and sea.

United States Chart 93043

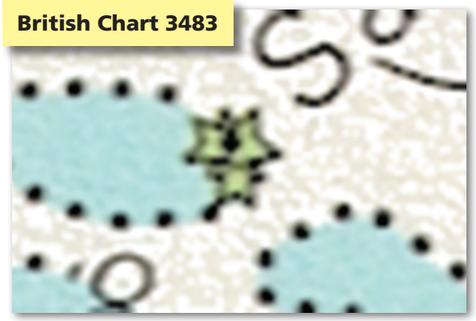


Original Map Scale 1:75,000
Complete chart reproduced as Annex NC51

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Not included.

British Chart 3483

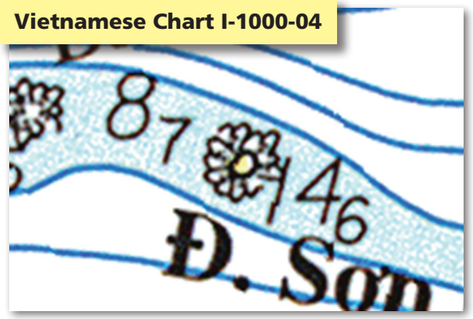


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

SAND CAY

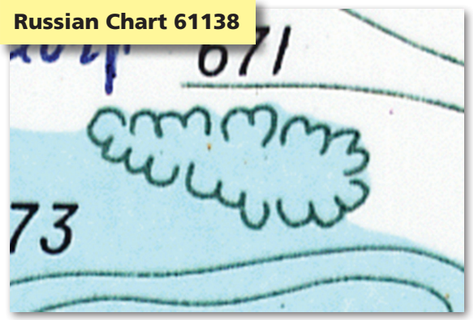
Additional Charts

Vietnamese Chart I-1000-04



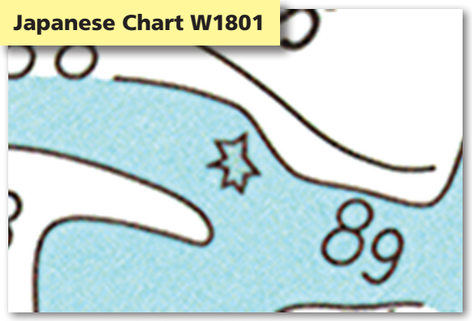
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Sand Cay is a grass-covered cay about 450 metres in length and 130 metres wide and is approximately 4.5 metres high. A drying reef surrounds the cay. There are several man-made structures, as seen in satellite imagery and photographs.

Historical and Anthropological Information

Sand Cay is part of Tizard Bank, at least parts of which were reported by the British ship *Dolphin* in 1767, and surveyed by the *H.M.S. Rifleman* in 1867.[1] The Bank was also examined by Commander Moore in 1888.[2]

According to an internal British report, France claimed the entirety of "Tizard Reef" and several other features in the early 1930s.[3] The British Admiralty rejected the claim in February 1933, concluding it had "no basis in international law and call[ing] for a strong protest without any further delay".[4] In opposing France's claim, the Admiralty observed that "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[5]

The Official Journal of the French Republic describing France's claims in July 1933 did not specifically enumerate Sand Cay.[6]

Tizard Bank was studied for fleet anchorage and military purposes by the Japanese Navy's Hydrographer from 1936-1937.[7] Sand Cay was annexed by Japan in 1939,[8] and described as being "[c]overed with trees and bushes in 1951".[9]

One source describes the history of Sand Cay as "unclear", noting that "Vietnam has occupied it at least intermittently since the 1970s".[10] Another notes that, in March 1995, "Vietnam reported that Taiwanese forces on Itu Aba ... shelled one of its cargo ships, which was sailing from Discovery Great Reef to Sand Cay".[11] A 2014 media report noted that "[r]ecent excavations" on Sand Cay and other features "yielded Vietnamese pottery shards that dated back to between the 13th and 19th centuries", although the report did not specify whether any of the shards were found on Sand Cay.[12]

According to the Taiwanese Ministry of National Defense, Vietnam has "begun work to artificially expand Sand Cay Island and to build military installations".[13] A Vietnamese news article shows soldiers "laying stones to build [an] embankment to expand" Sand Cay.[14]

Sand Cay is currently reported to contain a lighthouse[15] and a "marine base".[16] China's 2011 sailing directions note there is no fresh water on the feature.[17]

The Status of the Feature under UNCLOS

Sand Cay is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. This tiny feature, which is surrounded by a drying reef and has no fresh water,[18] has an area of only 0.0504 km^2. Other than surveying, the Philippines is unaware of any human activity having ever occurred on Sand Cay prior to its occupation by the Vietnamese military during the 1970s.[19] The Vietnamese troops are dependent on supplies from outside. There is no record of economic activity on the feature.

SAND CAY
References

[1] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom (23 Feb. 1933). SWSP, Vol. III, Annex 364.

[2] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 44. MP, Vol. VIII, Annex 256.

[3] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), para. 11. SWSP, Vol. III, Annex 363.

[4] *Id*.

[5] *Id*., para. 12.

[6] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[7] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 37. MP, Vol. VIII, Annex 256.

[8] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[9] M. Valencia, et al., *Sharing the Resources of the South China Sea* (1997), p. 232. SWSP, Vol. V, Annex 448.

[10] Russ Rowlett, "Lighthouses of the Spratly Islands", *available at* https://www.unc.edu/~rowlett/lighthouse/spr.htm (accessed 11 Feb. 2015), p. 2. SWSP, Vol. V, Annex 463.

[11] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 37. SWSP, Vol. V, Annex 445.

[12] Tran Dang, "Ancient Vietnamese artifacts found in Spratlys", *Thanh Nien Daily* (28 Sept. 2014). SWSP, Vol. IV, Annex 439.

[13] J. Pan & L. Tien-pin, "Threat to Spratlys outposts 'growing'", *Taipei Times* (26 Dec. 2014). SWSP, Vol. IV, Annex 442.

[14] "Efforts to develop Trường Sa [Spratly Islands]", *Bao Tin Tuc* (27 Apr. 2013). SWSP, Vol. IV, Annex 426.

[15] Russ Rowlett, "Lighthouses of the Spratly Islands" *available at* https://www.unc.edu/~rowlett/lighthouse/spr.htm (accessed 11 Feb. 2015). SWSP, Vol. V, Annex 463.

[16] J. Pan & L. Tien-pin, "Threat to Spratlys outposts" 'growing'", *Taipei Times* (26 Dec. 2014). SWSP, Vol. IV, Annex 442.

[17] Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea (A103)* (2011), p. 177. SWSP, Vol. III, Annex 232(bis).

[18] Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea (A103)* (2011), p. 177. MP, Vol. VII, Annex 232.

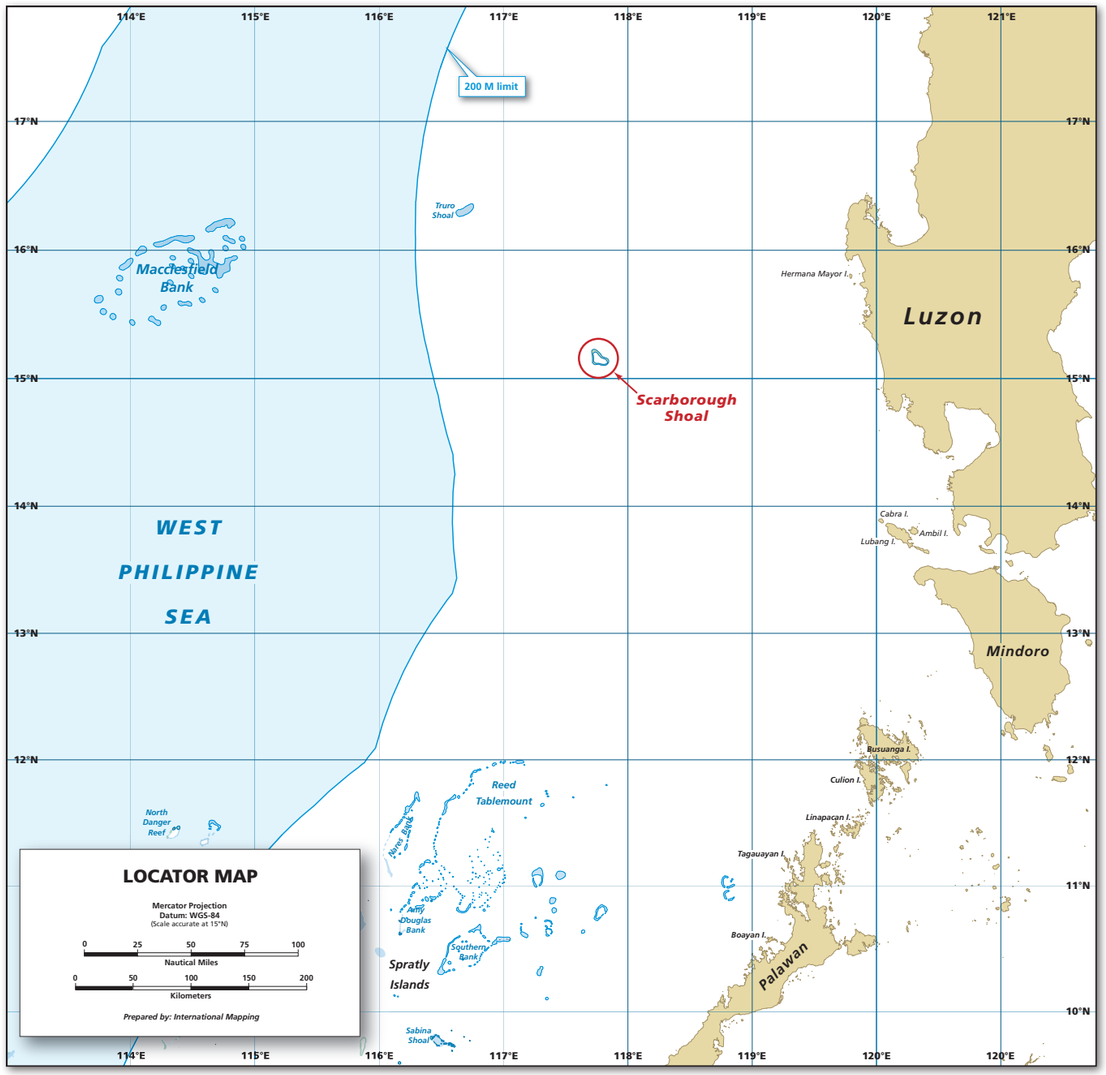
[19] Russ Rowlett, "Lighthouses of the Spratly Islands" *available at* https://www.unc.edu/~rowlett/lighthouse/spr.htm (accessed 11 Feb. 2015), p. 2. SWSP, Vol. V, Annex 463.

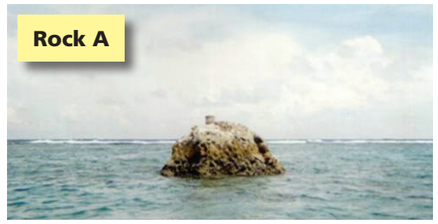
SCARBOROUGH SHOAL

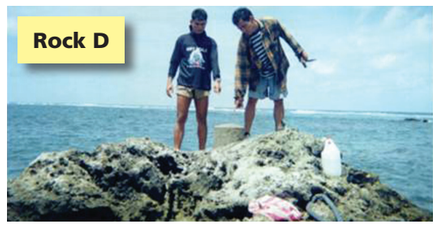
Also known as:

Chinese: Huangyan Dao (黄岩岛)
Philippine: Panatag Shoal

Coordinate Location: 15°08'00"N - 117°46'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Luzon: 119.6 M
Distance to China (mainland): 460.3 M
Claimed by: China, Philippines
Occupied by: Unoccupied

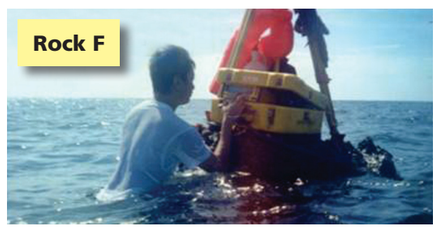






Rock E

Photograph not available



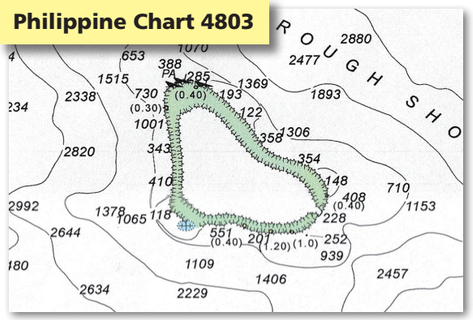
SCARBOROUGH SHOAL

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

SCARBOROUGH SHOAL, latitude 15° 08' N., longitude 117° 45' E., on which the Ship Scarborough struck in 1748, is about 120 miles W of the W coast of Luzon. It is triangular in shape, steep-to on all sides, and about 10 miles long. The shoal consists of a narrow belt of barely submerged coral reef enclosing a lagoon of clear blue water. On the belt are a number scattered rocks [*sic*], some of which are visible at a considerable distance. They vary in elevation from 0.9 to 3 m (3 to 10 feet), **SOUTH ROCK,** situated at the SE extremity of the shoal, being the highest. Close N of South Rock is an opening into the lagoon; it is about 366 meters (400 yards) wide and has general depth [*sic*] of 9.1 to 11 m (5 to 6 fathoms), but is encumbered with patches of reef with depths of as little as 2.7 m (1 1/2 fathoms) over them. Just within the opening the water is shallow… A stranded wreck was located on the northernmost edge of the shoal…

Philippine Chart 4803

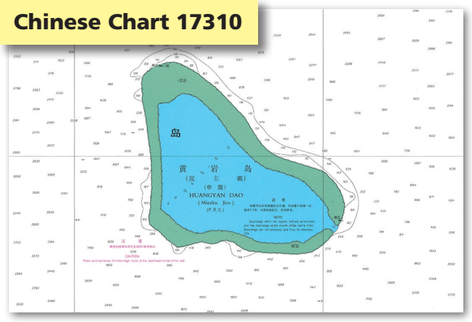


Original Map Scale 1:500,000
Complete chart reproduced as Annex NC32

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Huangyan Island (Democracy Reef) - Located 340 nautical miles southerly of Yongxing Island, it is the only atoll among these islands to be exposed above sea level. Its shape resembles an isosceles triangle, the west side and south side are each 15 km long, and the surface area is approximately 150 sq. km. The reef basin has a crest width of 1 km ~ 2 km, and the northern part is 3.3 km at its widest part. In general, the water depth is 0.5 meters ~ 3.5 meters. Hundreds of large reef segments are distributed along the top surface and are 0.3 meters ~ 3.5 meters above sea level. The North Rock on the northwest end and the South Rock on the southeast end have a surface area of approximately 10 sq. meters. They are respectively 1.5 meters and 1.8 meters above sea level. The water depth within the lagoon is 10 meters ~ 20 meters. The east side of South Rock has a 400-meter wide waterway, and boats can come in from the open seas to anchor.

Chinese Chart 17310



Original Map Scale 1:100,000
Complete chart reproduced as Annex NC23

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Scarborough Reef (Scarborough Shoal) (15°08'N., 117°45'E.) consists of a narrow belt of barely submerged reef enclosing a lagoon. On the belt are scattered rocks which are visible at a considerable distance. A score or more of these rocks, standing 1.5 to 2.5m high, are found on the SW corner of the reef with South Rock, the highest of these scattered rocks, on its SE extremity. In 1986, the reef was reported to lie 2 miles N of its charted position. Scarborough Reef Light is shown from the NE side of the reef.

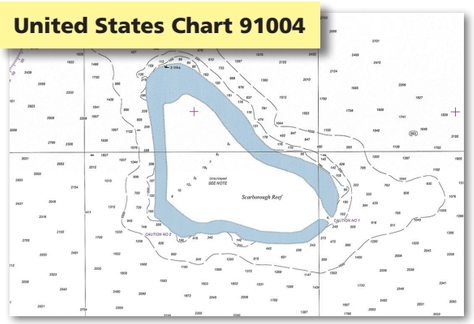
Close N of South Rock is a channel about 0.2 mile wide with general depths of 7.3 to 9.2m leading into the lagoon.

This channel is encumbered with reef patches as shallow as 2.7m; the lagoon is almost completely filled with subsurface coral heads at about 15m intervals.

A radar-conspicuous stranded wreck, used as a bombing target, is located on the SE side of the reef in approximate position 15°05'30"N, 117°50'00"E. Fishing vessels frequent the reef.

The ruins of an iron tower stand close to the above channel opening. A line of breakers marking the reef has been seen at a distance of 10 miles. Currents in the vicinity of the reef vary with the monsoons, setting NE during the Southwest Monsoon, and in a W or NW direction during the Northeast Monsoon.

United States Chart 91004



Original Map Scale 1:100,000
Complete chart reproduced as Annex NC63

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

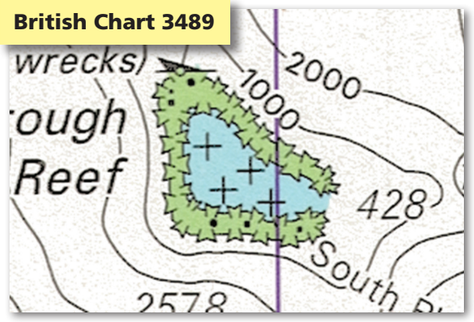
Scarborough Reef (15°09'·46N 117°45'·41E), is named after the *Scarborough* which struck the reef in 1748. It is steep-to on all sides and consists of a narrow belt of coral enclosing a lagoon of clear blue water.

From time to time radar conspicuous wrecks are to be found on the reef; these may be used as bombing targets. Fishing vessels frequent the area.

…

Through the entrance channel, 2 cables wide, with depths of 9 to 11 m, but obstructed in places by patches of reef which reduce the depth to 2-7 m. The lagoon is shallow just within the entrance.

British Chart 3489

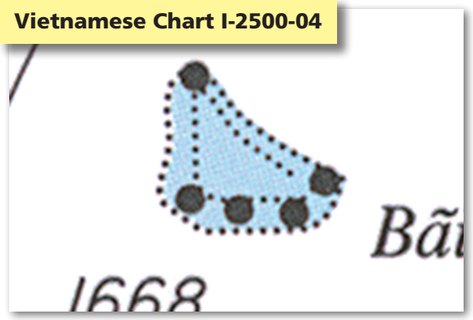


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC46

SCARBOROUGH SHOAL

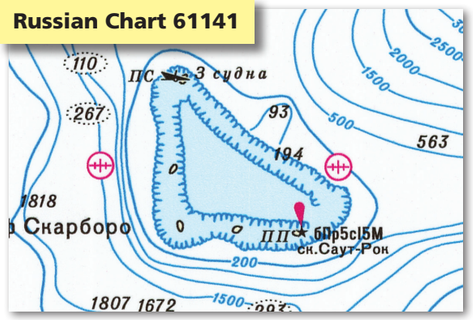
Additional Charts

Vietnamese Chart I-2500-04



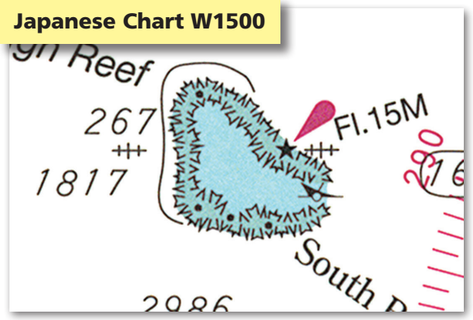
Original Map Scale 1:1:2,500,000
Complete chart reproduced as Annex NC66

Russian Chart 61141



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC42

Japanese Chart W1500



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC8

Malaysian Chart

Malaysian chart coverage
stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Scarborough Shoal is a coral reef with an area of 132 km^2. The shoal consists of a narrow belt of barely submerged coral reef. With a few exceptions, the entire reef is submerged. There are six rocks that remain above water at high tide. The satellite imagery is annotated to show the location of these rocks. The photographs show that they just protrude through the water's surface. The water depths become relatively deep immediately seaward of the shoal. The expanse of ocean, about 168.2 M, between Scarborough and Macclesfield Bank to the west, becomes deep with depths exceeding 4,000 metres. The broad passage between these two banks is a primary shipping lane.

The Status of the Feature under UNCLOS

Scarborough Shoal is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. As detailed in paragraphs 5.5-5.12 and 5.56 of the Memorial, the feature is a coral reef that is submerged except for six small rocky protrusions that remain above water at high tide. The largest of the six, South Rock, protrudes only 1.2 metres above the surface and has an area of less than one square metre.[1] The feature has never been inhabited.

References

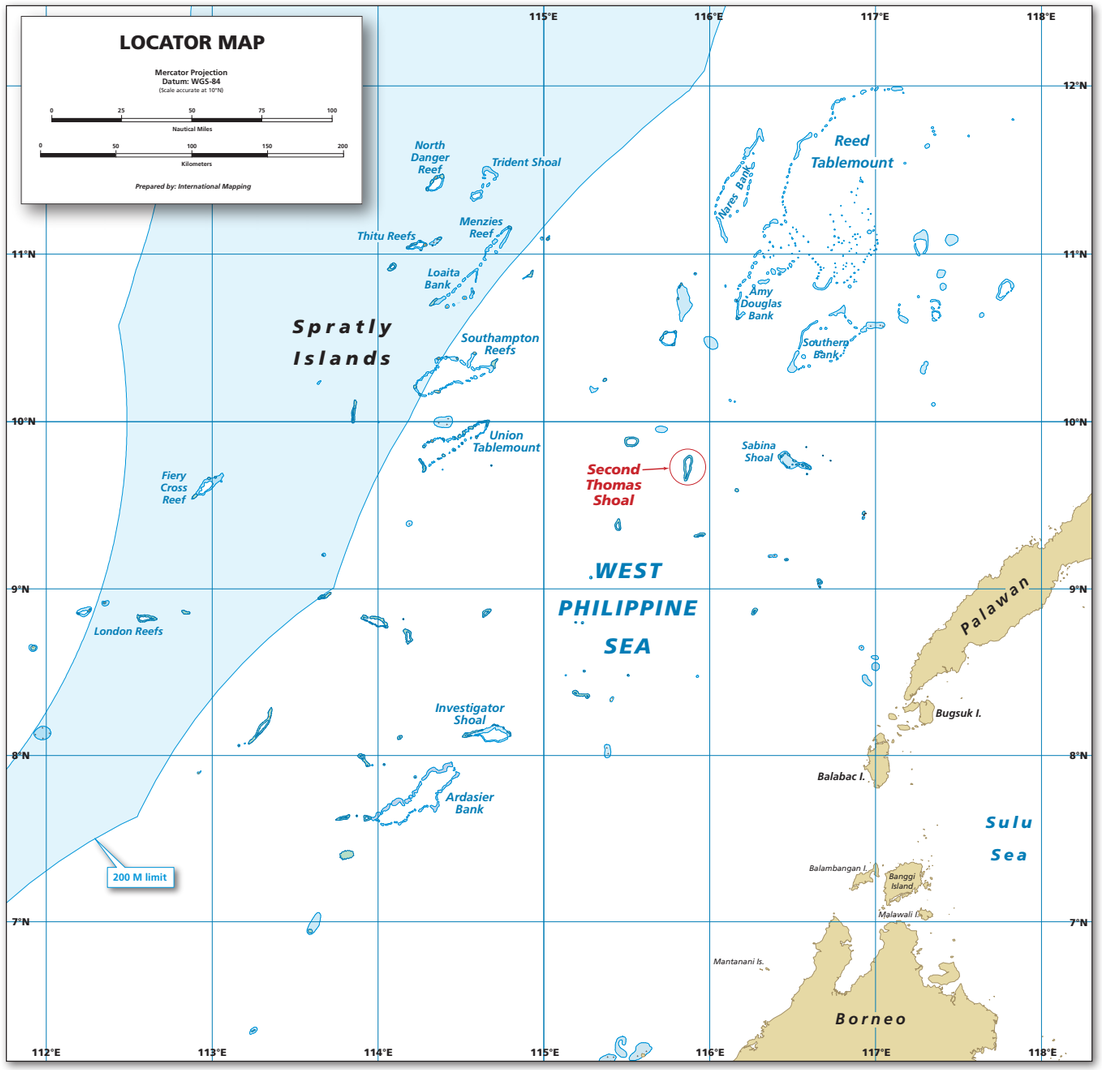
[1] Philippines National Mapping and Resource Information Authority, *Descriptive Report on Scarborough Reef* (1997), p. 2. MP, Vol. III, Annex 27.

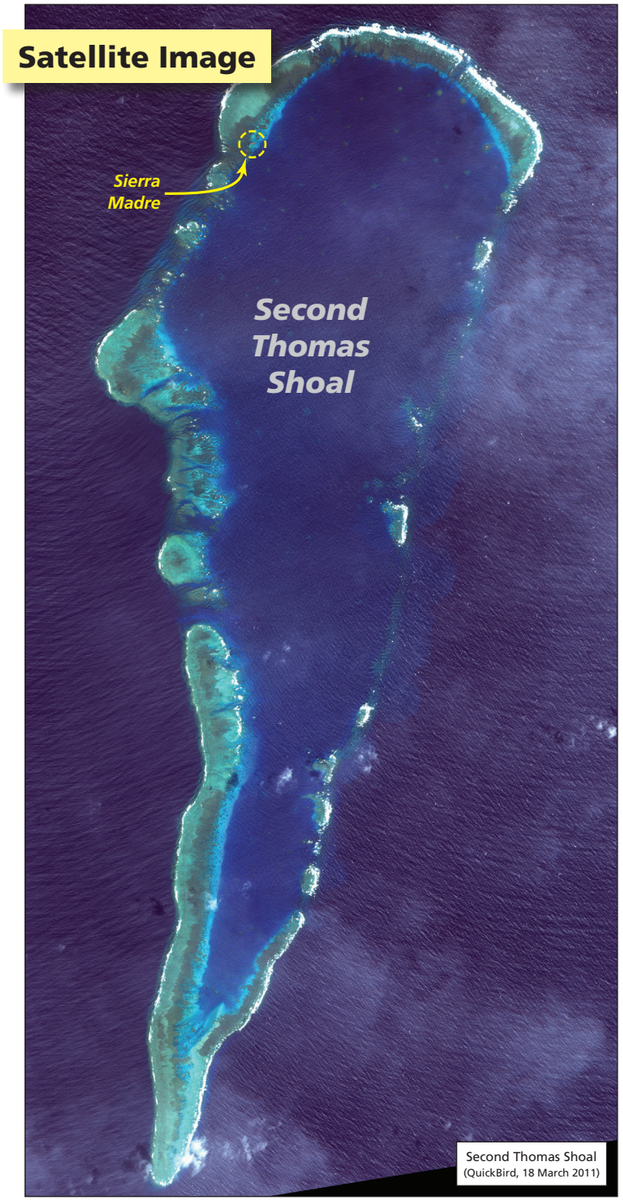
SECOND THOMAS SHOAL

Also known as:

Chinese: Ren'ai Jiao (仁爱礁)
Philippine: Ayungin Shoal

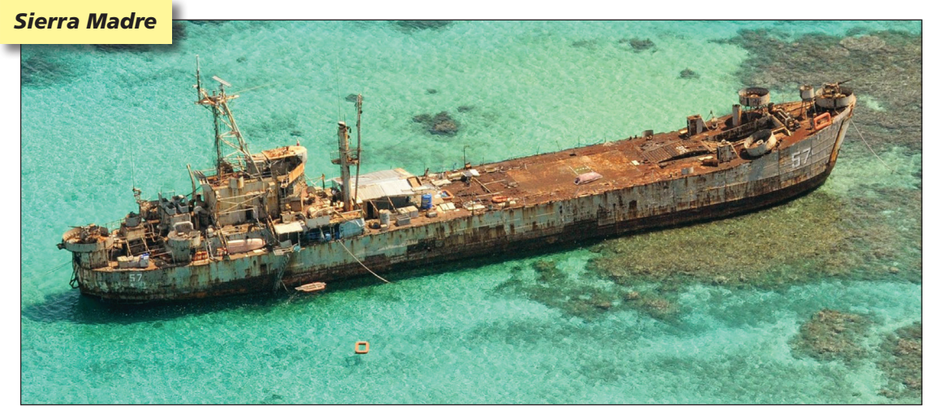
Coordinate Location: 09°44'00"N - 115°52'00"E
Nearest High Tide Feature: Alicia Annie Reef, 27.3 M
Distance to Palawan: 104.1 M
Distance to Hainan: 613.9 M
Claimed by: China, Philippines, Vietnam
Occupied by: Philippines





Second Thomas Shoal
(QuickBird, 18 March 2011)

Sierra Madre



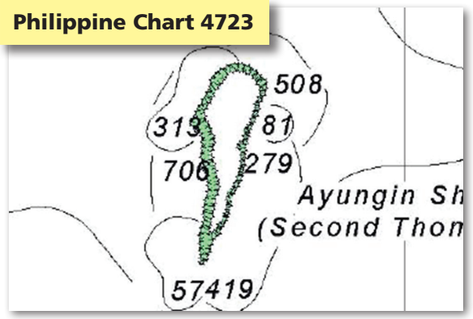
SECOND THOMAS SHOAL

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

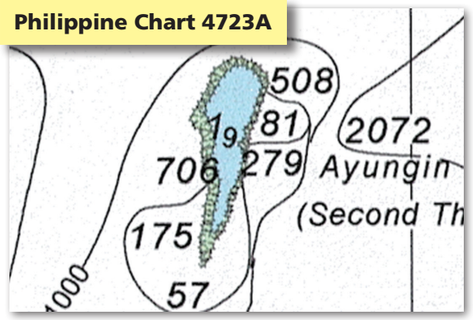
A**yungin Shoal (2nd Thomas Shoal)** lies which its N extremity (9º 49' N, 115º 52' E) 37 miles W of Sabina Shoal and extends 11 miles in a N-S direction. The reef encloses a lagoon where depths of 27 meters (15 fms) can be found and which may be accessible by boats on the E side.

Philippine Chart 4723



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC33

Philippine Chart 4723A

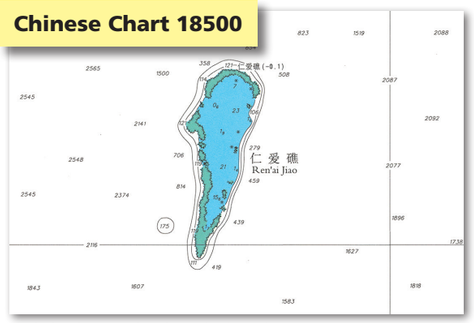


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Located approximately 25 nautical miles north by west of Xinyi Reef, it is an exposed coral atoll, trending toward south-north, with a distance of approximately 10 nautical miles, the north side is wide while the south side is narrow. The northern half of the atoll is all connected together, while the southern half is divided into several segments. There are several solitary exposed reefs on the atoll. The water of the lagoon inside the atoll is relatively deep, and its south side has several entry-exit points. Slightly larger vessels can enter and exit. On its northeast side, there is an entry-exit point with a water depth of 27 meters.

Chinese Chart 18500

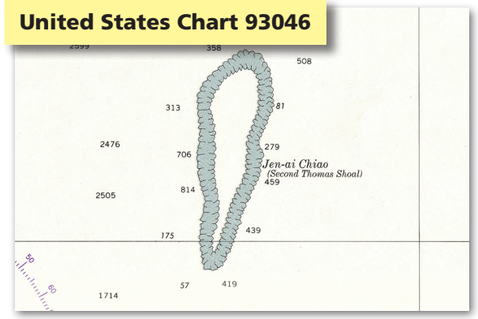


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC18

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Second Thomas Shoal (9°49'N., 115°52'E.) lies 35 miles W of Sabina Shoal. It is 11 miles long N-S, and surrounds a lagoon having depths of up to 27m which may be accessible to small boats from the E. Drying patches are found E and W of the reef rim.

United States Chart 93046



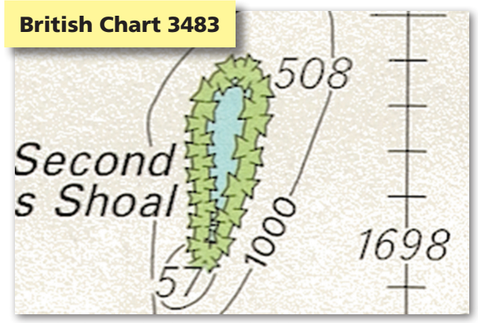
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC52

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Second Thomas Shoal (9°44'·10N 115°51'·98E) extends 11 miles from N to S, and encloses a lagoon in which there are depths of 27 m.

No anchorage has been found in the vicinity. The lagoon may be accessible to boats on its E side.

British Chart 3483

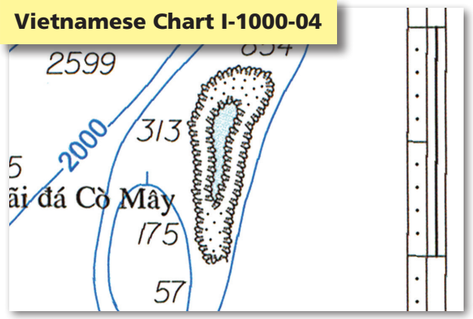


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

SECOND THOMAS SHOAL

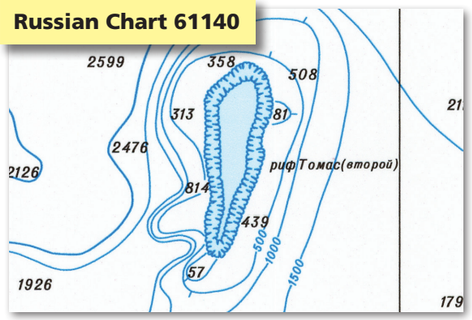
Additional Charts

Vietnamese Chart I-1000-04



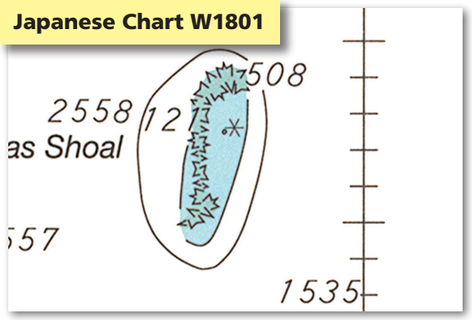
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61140



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC41

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Second Thomas Shoal extends approximately 11 M in a north-south direction. It is submerged at high tide with only patches of the reef that dry at low tide. The reef encloses a lagoon with depths up to 27 metres. The U.S., British, Philippine, Russian, and Vietnamese nautical charts show a continuous reef with no entrances to the lagoon; the Chinese and Japanese nautical charts show a non-continuous reef with large gaps. The satellite imagery shows the shoal with numerous breaks. The Japanese nautical chart depicts a small dot that may indicate a rock. The other nautical charts do not show that feature, and the sailing directions do not mention a rock. The Philippine ship Sierra Madre is located in the northwest part of the Shoal.

Historical and Anthropological Information

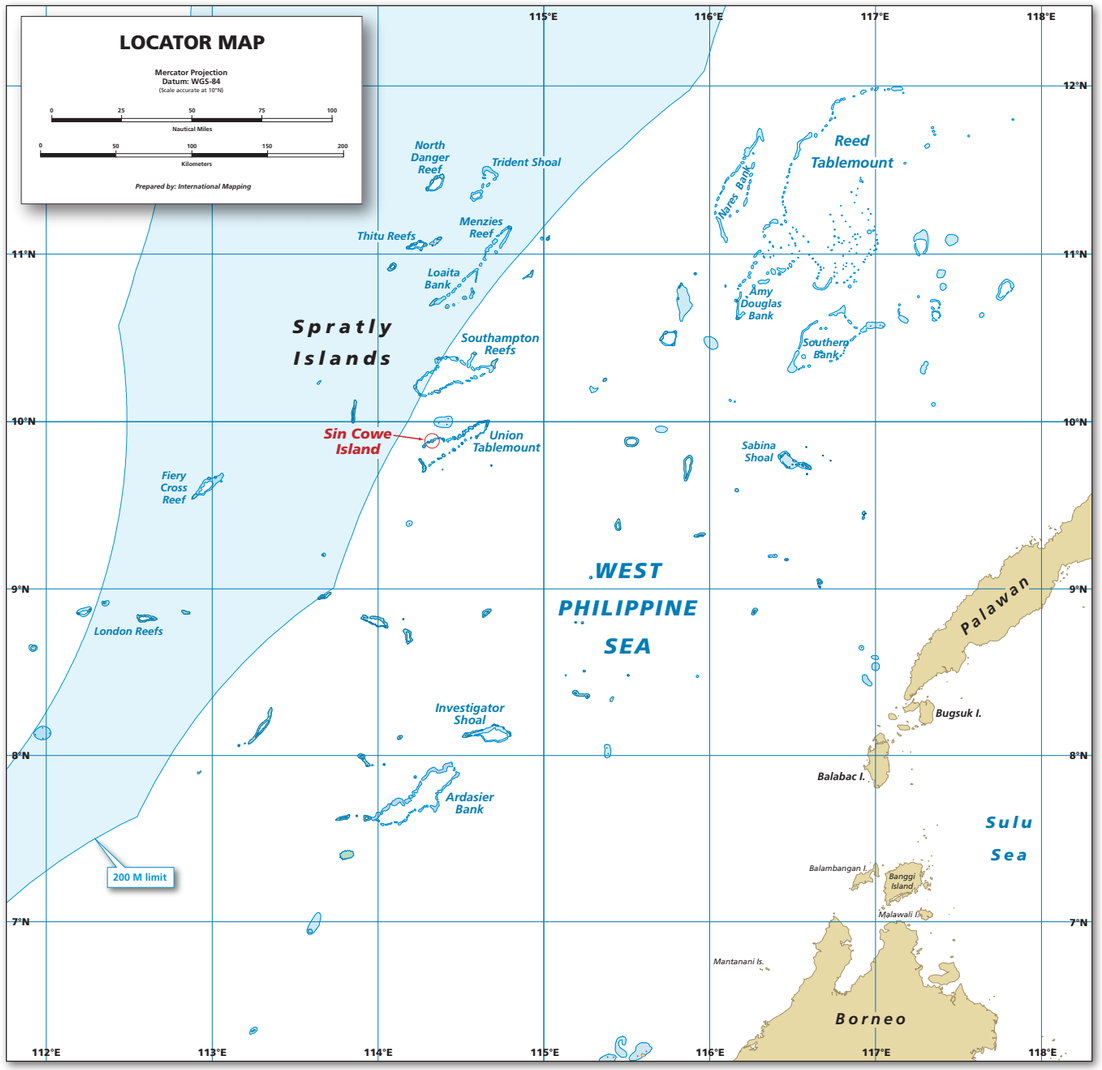
Second Thomas Shoal is a low-tide elevation under Article 13, because it dries at low tide and no part of it is above water at high tide. This is detailed in paragraphs 5.60-5.62 of the Memorial, and shown on the following charts: Philippine Charts 4723 and 4723A, Chinese Chart 18500, U.S. Chart 93046, British Chart 3483, Vietnamese Chart I-1000-04, Russian Chart 61140, and Japanese Chart W1801. The feature is located within 104.1 M of Palawan, and is 27.3 M from the nearest high-tide feature (Alicia Annie Reef).

SIN COWE ISLAND

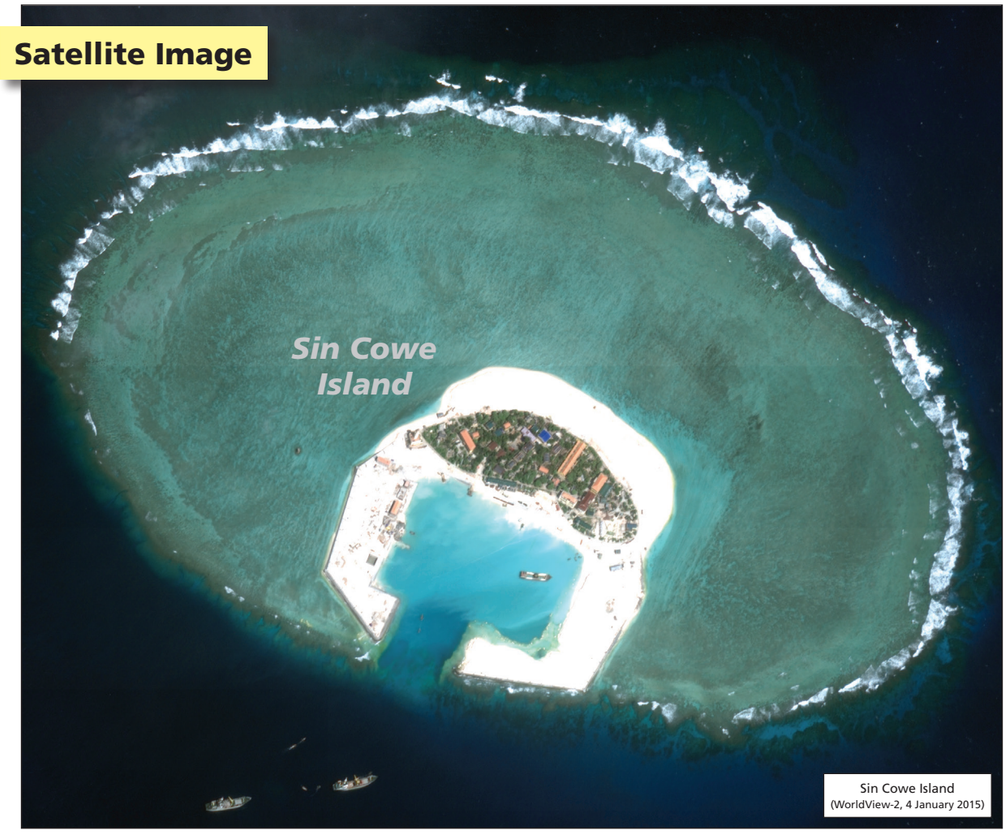
Also known as:

Chinese: Jinghong Dao (景宏岛)
Philippine: Rurok Island

Coordinate Location: 09°54'51"N - 114°33'32"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 189.0 M
Distance to Hainan: 564.4 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Satellite Image



Sin Cowe Island
(WorldView-2, 4 January 2015)

Sin Cowe Island

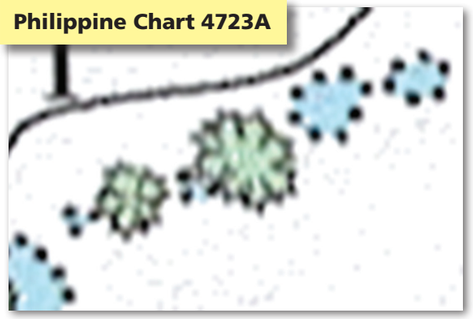
SIN COWE ISLAND

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

RUROK ISLAND (9° 53' N, 114° 20' E), 4 meters (12ft) high, lies on the W side of the banks, 9 miles N of Johnson Reef. Whitson Reef lies at the NE extremity of the banks and reefs; Holiday Reef lies 6 miles WSW of the NE extremity of Whitson Reef. A drying reef, with a drying cay on it lies 3 miles S of Holiday Reef.

Philippine Chart 4723A

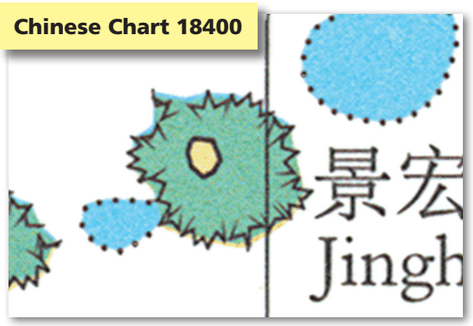


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Jinghong Island - Located at the northwest end of Jiuzhang reef group, it is fairly long from the northeast to southwest with a length of approximately 324 meters. It has a width of approximately 135 meters, the surface area is 0.033 sq. km, and it has a height of 3.6 meters. There are clusters of tropical bushes on the island. Near the reef edge of the island's southwest end, there is a sand beach that is exposed during low tide.

Chinese Chart 18400

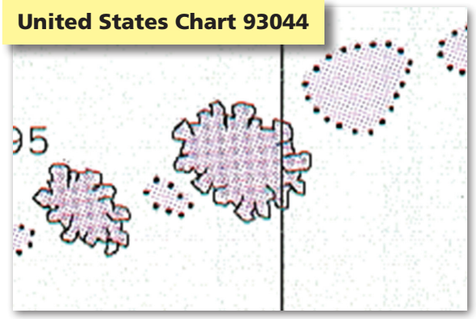


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Sin Cowe Island (9°52'N., 114°19'E.), a reef-fringed cay, 4m high, lies on the NW side of Union Atoll. There are some buildings on the island and a beacon at its NE end.

United States Chart 93044

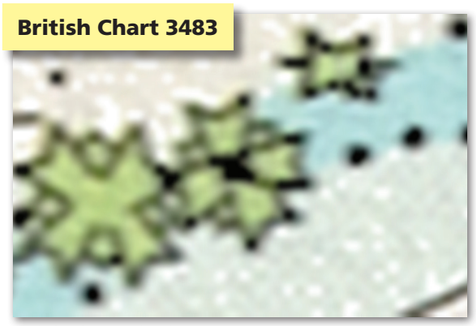


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Sin Cowe Island (9°52'·96N 114°19'·09E) which lies near the W end of the N side of the bank and from which a light (2.86) is exhibited.

British Chart 3483

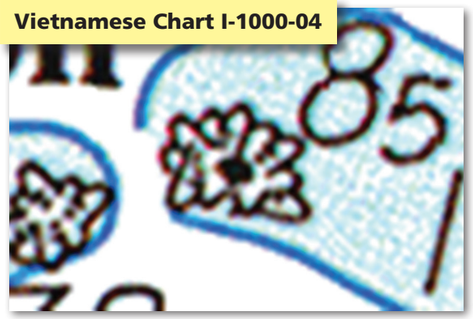


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

SIN COWE ISLAND

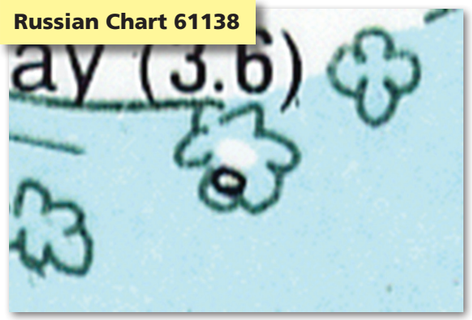
Additional Charts

Vietnamese Chart I-1000-04



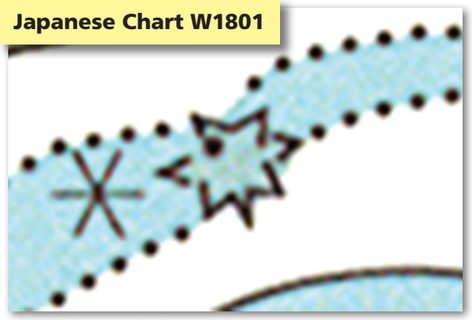
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Sin Cowe Island is a reef-fringed cay, approximately 4 metres high, which is located on the northwest side of Union Atoll. According to the Chinese sailing directions, it has a width of approximately 135 metres, a length of 324 metres, and an area of 0.033 sq. km. There are clusters of tropical bushes on the island, and near the reef edge at the southwest end is a sand beach that uncovers at low tide. There are some buildings on the feature and a beacon at its northeast end. Satellite imagery and photographs show several structures, as well as vegetation. From the visual evidence, the feature has been extended, becoming, in part, an artificial island.

Historical and Anthropological Information

The location of Sin Cowe was noted by the Hydrographic Office of the U.S. Navy in 1915.[1] Japanese hydrographers reportedly "made 'sketch' surveys" of various features, including Sin Cowe, from 1936 to 1937.[2] It was annexed by Japan in 1939.[3]

Sin Cowe was unoccupied prior to the arrival of Vietnamese armed forces in 1974.[4] There are several structures, including reportedly a lighthouse[5] and installations designed to "to stem soil erosion".[6]

The Status of the Feature under UNCLOS

Sin Cowe is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. According to China's sailing directions, this very small feature has an area of only 0.033 km^2. Other than surveys, the Philippines is not aware of any human settlement on the feature until its occupation by the Vietnamese military in 1974,[7] who are dependent upon supply from the outside. No sustainable economic activity occurs on Sin Cowe.

With respect to the Tribunal's invitation "to elaborate on the implications of the proximity" of McKennan Reef (including Hughes Reef) to Sin Cowe, the Philippines observes that McKennan Reef (including Hughes Reef) is a low-tide elevation.[8] Since it is located 8.7 M from Sin Cowe, a feature above water at high tide, McKennan Reef (including Hughes Reef) lies within the 12 M territorial sea appurtenant to Sin Cowe. Sovereignty over McKennan Reef (including Hughes Reef) therefore, vests in the State that enjoys sovereignty over Sin Cowe. Moreover, the breadth of Sin Cowe's territorial sea can be drawn using the low-water line of McKennan Reef (including Hughes Reef) as a baseline.

References

[1] *See* U.S. Hydrographic Office, *Asiatic Pilot: Sunda Straight and the Southern Approaches to China Sea with West and North Coasts of Borneo and Off-Lying Dangers*, Vol. V (1915), p. 379. SWSP, Vol. IV, Annex 395.

[2] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), pp. 37-38. MP, Vol. VIII, Annex 256.

[3] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[4] M. Valencia, et al., *Sharing the Resources of the South China Sea* (1997), p. 233. SWSP, Vol. V, Annex 448.

[5] Le Quang Minh, "Spratly Islands lighthouse job no sinecure", *Viet Nam News* (11 June 2013). SWSP, Vol. IV, Annex 428.

[6] David Jude Sta Ana, "Vietnam beefs up military garrisons in Spratlys", *The Philippine Star* (26 May 2011). SWSP, Vol. IV, Annex 417.

[7] M. Valencia, et al., *Sharing the Resources of the South China Sea* (1997), p. 233. SWSP, Vol. V, Annex 448.

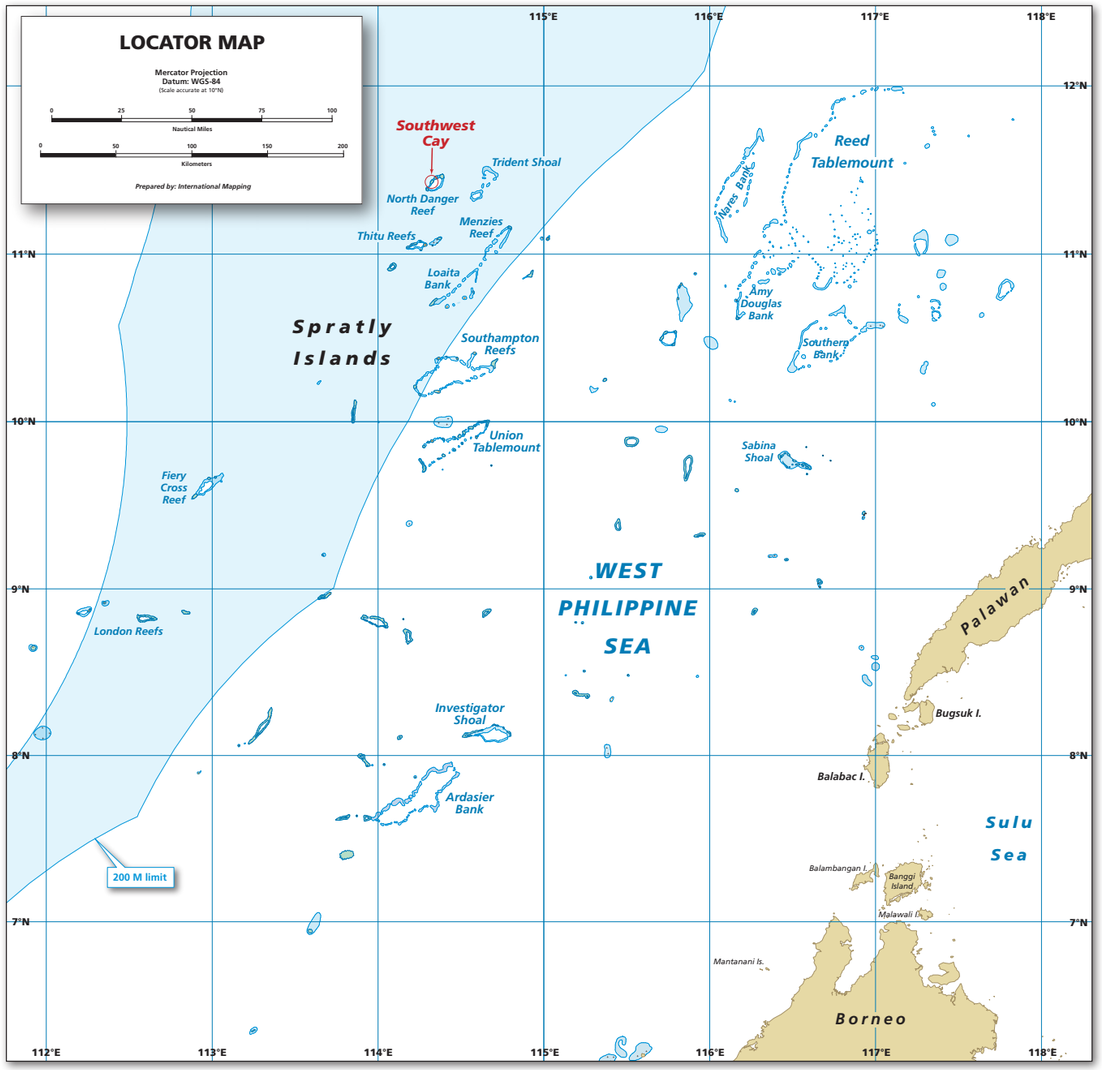
[8] *See* "McKennan Reef", SWSP, Vol. II.

SOUTHWEST CAY

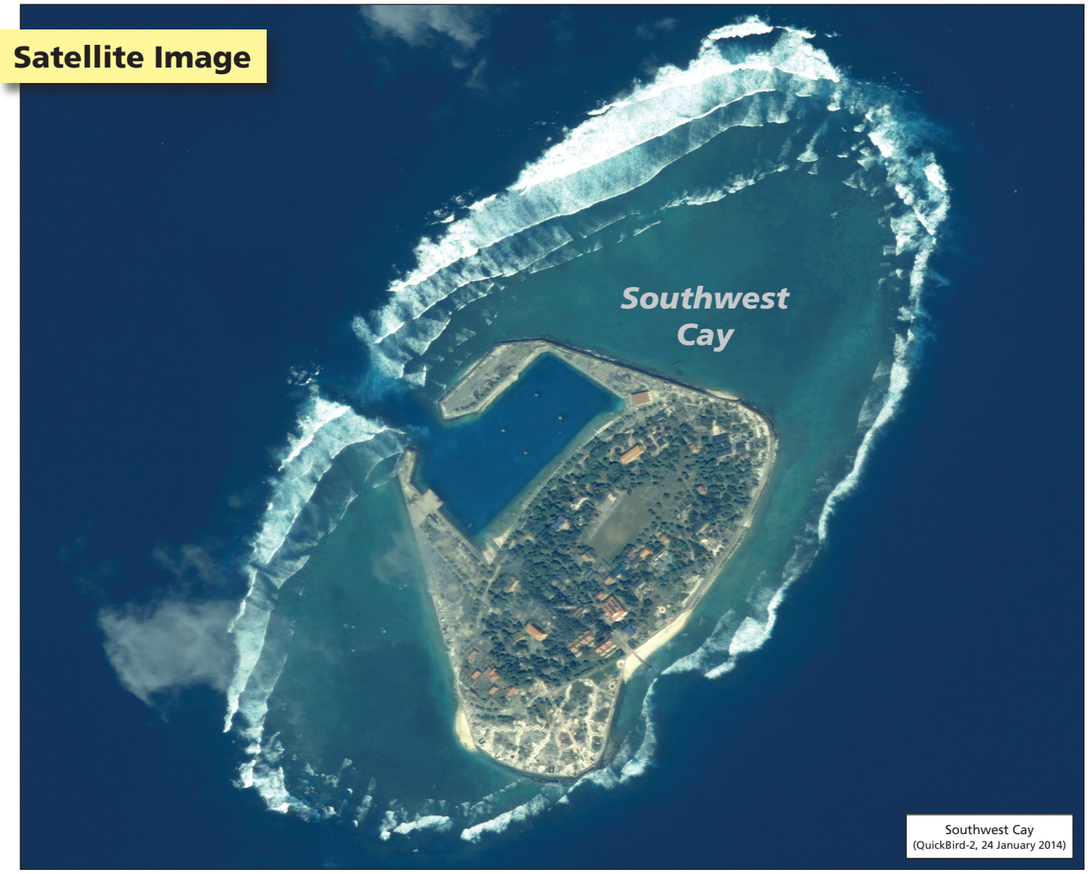
Also known as:

Chinese: Nanzi Dao (南子岛)
Philippine: Pugad

Coordinate Location: 11°25'45"N - 114°19'40"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 240.0 M
Distance to Hainan: 483.7 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Satellite Image



Southwest Cay
(QuickBird-2, 24 January 2014)

Southwest Cay

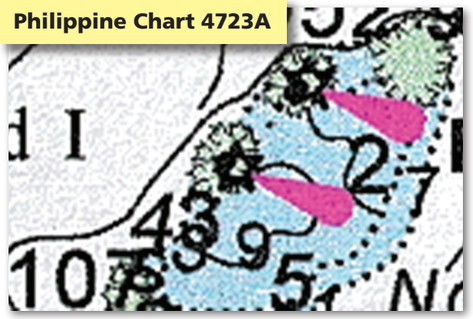
SOUTHWEST CAY

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

NORTH DANGER REEF (11°N, 114°21E) of coral formation and steep-to lies 21 miles N of Pagasa Island. The middle of the formation is remarkably flat and even, with depths of 37 meters to 47 meters (20 to 26 fms) over its quarter part except for a 14.6 meters (48ft) patch near the center of the lagoon. The Lagoon is surrounded by a shallow reef of varying width on which there are many dangers, with depths of less than 9 meters (30ft) over them. Extensive areas of this reef dry in patches at the NE and SW ends of the formation. Two islets are situated on its NW side. All the known dangers are plainly visible in good light condition. During the NE monsoon (October to March) the sea breaks heavily on the NE side at the NE end of North Danger Reef.

Philippine Chart 4723A



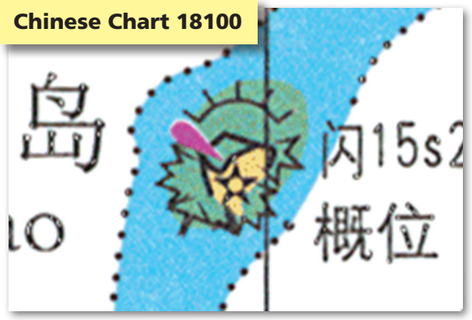
Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Nanzi Island - The island has a flat terrain, a length of approximately 670 meters, a width of approximately 283 meters, a surface area of 0.151 sq. km, and an altitude of 4.6 meters. The island is blanketed by green grass, and there are hundreds of coconut trees. The trees are approximately 9.5 meters in height. The island can usually be seen from a distance of 6 nautical miles ~ 11 nautical miles. Fishing boats can drop their anchors on all sides of the island, and the south side is especially good, where the water depth is 6 meters ~ 10 meters. The leeward side can provide shelter against level 5 ~ level 6 winds and provides a half-way point rest stop for Chinese fishermen down south. The northeast end of the island is installed with a diamond-shaped radar reflector, which functions for 15 nautical miles. Commercial ships going from Singapore to Hong Kong and Malaysia also split up here. This island is a breeding ground for seabirds, and there are many bird droppings. The island was heavily excavated for mining in the past.

Nanzi Island and Beizi Island are located approximately 1.5 nautical miles from each other. The water surface is approximately 9.4 chains in width, and there is a waterway in the middle through which general vessels can navigate. Fishing boats often moor by the island at the two sides of the waterway to take shelter from the north wind.

Chinese Chart 18100

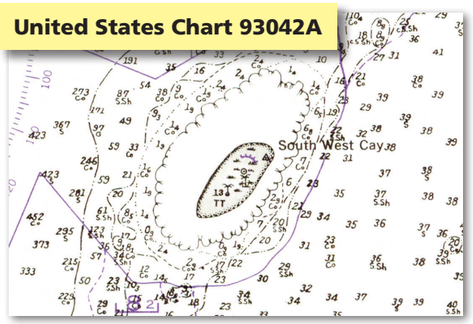


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC25

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

North Danger Reef (11°25'N., 114°21'E.) is a steep to coral formation lying to the NW of Dangerous Ground. It is about 8.5 miles long and encloses, but does not shelter, a lagoon. This lagoon is remarkably flat in the inner portions where it has been wire dragged to a depth of 18m, with the exception of an isolated coral head, wire-dragged to a depth of 14.6m, in about the center of the lagoon. The surrounding reef is shallow and variable in width. There are many dangers with depths of less than 9.2m. All known dangers are plainly visible in suitable conditions of light.

United States Chart 93042A

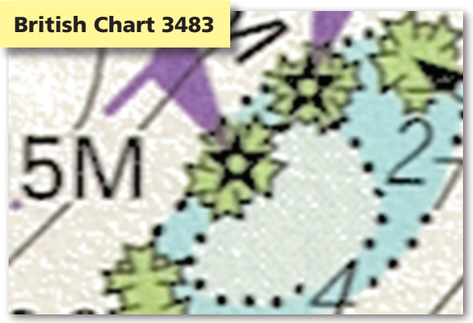


Original Map Scale 1:30,000
Complete chart reproduced as Annex NC56

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

South West Cay (11°25'·72N 114°19'·80E), thickly wooded and covered with coarse grass. It is a breeding place for sea birds, and is covered with guano. Guano has been exported from South West Cay on a considerable scale. Two wells, and a mast, 12 m in height, are situated near the centre of the SE side of the cay. The cay is surrounded by a coral reef which dries in patches, and extends up to 3 cables in places.

British Chart 3483

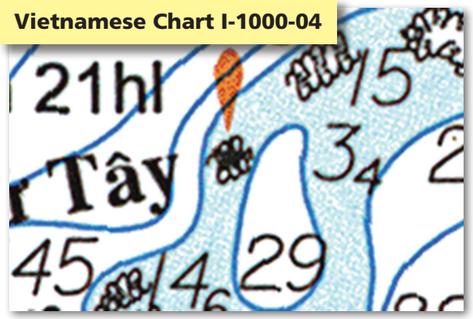


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

SOUTHWEST CAY

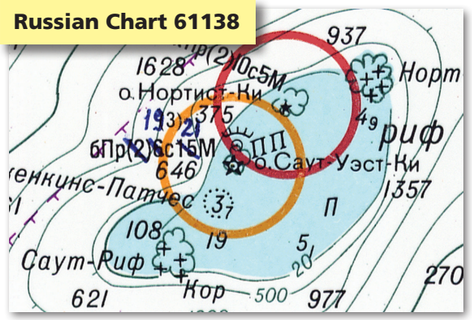
Additional Charts

Vietnamese Chart I-1000-04



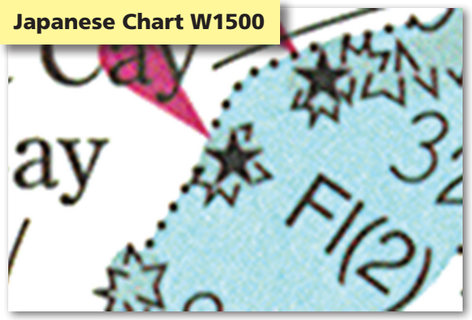
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1500



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC8

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Geographic/Hydrographic Observations by Dr. Robert Smith

Southwest Cay is surrounded by a coral reef which dries in patches. It is thickly wooded, a breeding place for birds and is covered with guano. The U.S. nautical chart depicts some vegetation on it. As seen in satellite imagery and photographs, several buildings have been constructed and a harbor has been built on its northwest side.

Historical and Anthropological Information

North Danger Reef, of which Southwest Cay is a part, was reported by the British ship *South Sea Castle* in 1762, and by the *Luoania* in 1764.[1] It was surveyed by the British in 1814, and re-surveyed by the *H.M.S. Rifleman* in 1865.[2] A description of the feature written in 1889 notes that the cay was "frequented by Chinese fishermen from Hainan, who collect biche-de-mer [and] turtle shell…".[3] In 1925, the *H.M.S. Iroquois* surveyed the area "for fleet anchorage purposes".[4]

In 1933, Southwest Cay was claimed by France[5] and attached to Baria Province.[6] Southwest Cay was surveyed by the Japanese navy in 1936.[7] British Sailing Directions from 1937 state that the "islet is a breeding place for sea birds, and is covered with guano, the export of which has, at some time, been carried out on a considerable scale".[8] A 1946 Republic of China document states that, "[a]ccording to Japanese literature, in 1921 Japanese people began a 12-year phosphorus mining effort" on Itu Aba and Southwest Cay.[9]

Southwest Cay was annexed by Japan in 1939.[10] Although the Japanese reportedly occupied and built facilities upon Danger Reef during World War II, it is unclear whether activities occurred on Southwest Cay.[11]

The Vietnamese cruisers *Van Kiep* and *Van Don* visited Southwest Cay in 1961.[12] Although the Philippines subsequently established a military garrison on the feature, Vietnamese forces took possession in 1975, when the Filipinos stationed there were on a mission to nearby Northeast Cay.[13]

North Vietnamese troops took possession of Southwest Cay after a short battle with the South Vietnamese in April 1975.[14] Since its initial occupation, "Vietnam has substantially altered the island, adding a harbour and other land features in the past 10 years".[15] Still occupied by Vietnam, Southwest Cay is reported to house "solar power generators",[16] "several gun emplacements, gun shelters, civilian buildings, military barracks, parabolic disc antennas, concrete bunkers, a light house, a football field, a helipad and many light posts".[17]

The Status of the Feature under UNCLOS

Southwest Cay is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. According to China's sailing directions, this tiny feature, which is surrounded by coral reef that dries in patches, has an area of only 0.151 km^2. With the exception of reports of its occasional use in the nineteenth and early twentieth centuries by fishermen and for guano extraction, there was no human settlement on the feature, until it was briefly occupied by the Philippines' armed forces in the early 1970s, before they were replaced by Vietnamese military forces in 1975 for the purpose of enhancing Vietnam's sovereignty claim. The Vietnamese forces there are dependent upon supplies from the outside.

References

[1] *Memorandum* from the Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom (23 Feb. 1933), p. 4. SWSP, Vol. III, Annex 364.

[2] *Id*.

[3] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), p. 593. SWSP, Vol. IV, Annex 390.

[4] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 36. MP, Vol. VIII, Annex 256.

[5] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[6] French Republic, Governor of Cochin China, *Decree* (21 Dec. 1933), *reprinted in* Monique Chemillier-Gendreau, *Sovereignty over the Paracel and Spratly Islands*. SWSP, Vol. III, Annex 352.

[7] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 47. MP, Vol. VIII, Annex 256.

[8] United Kingdom, Hydrographic Department, *China Sea Pilot*, Vol. I (1st ed., 1937), p. 119. SWSP, Vol. IV, Annex 397.

[9] *Letter* from Ministry of the Interior of the Republic of China to the Ministry of Foreign Affairs of the Republic of China (9 Oct. 1946), reprinted in *Archival Compilation on South China Sea Islands by Ministry of Foreign Affairs*, Vol. 2, Doc. No. III(1):009 (Republic of China Ministry of Foreign Affairs Research & Planning Committee, ed.) (1995), p. 771. SWSP, Vol. III, Annex 351.

[10] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[11] Bruce Elleman, "Maritime territorial disputes and their impact on maritime strategy: A historical perspective", in *Security and International Politics in the South China Sea: Towards a cooperative management regime* (S. Bateman and R. Emmers, eds., 2009), p. 48. SWSP, Vol. V, Annex 453.

[12] Republic of Vietnam, Ministry of Foreign Affairs, *White Paper on the Hoang Sa (Paracel) and Truong Sa (Spratly) Islands* (1975), p. 3. SWSP, Vol. III, Annex 353.

[13] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), pp. 102. SWSP, Vol. V, Annex 459.

[14] *Id*., pp. 102-103.

[15] "China Expands Woody Island", *Open Source Imagery & Geospatial Intelligence* (29 Aug. 2014). SWSP, Vol. V, Annex 462.

[16] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 103. SWSP, Vol. V, Annex 459.

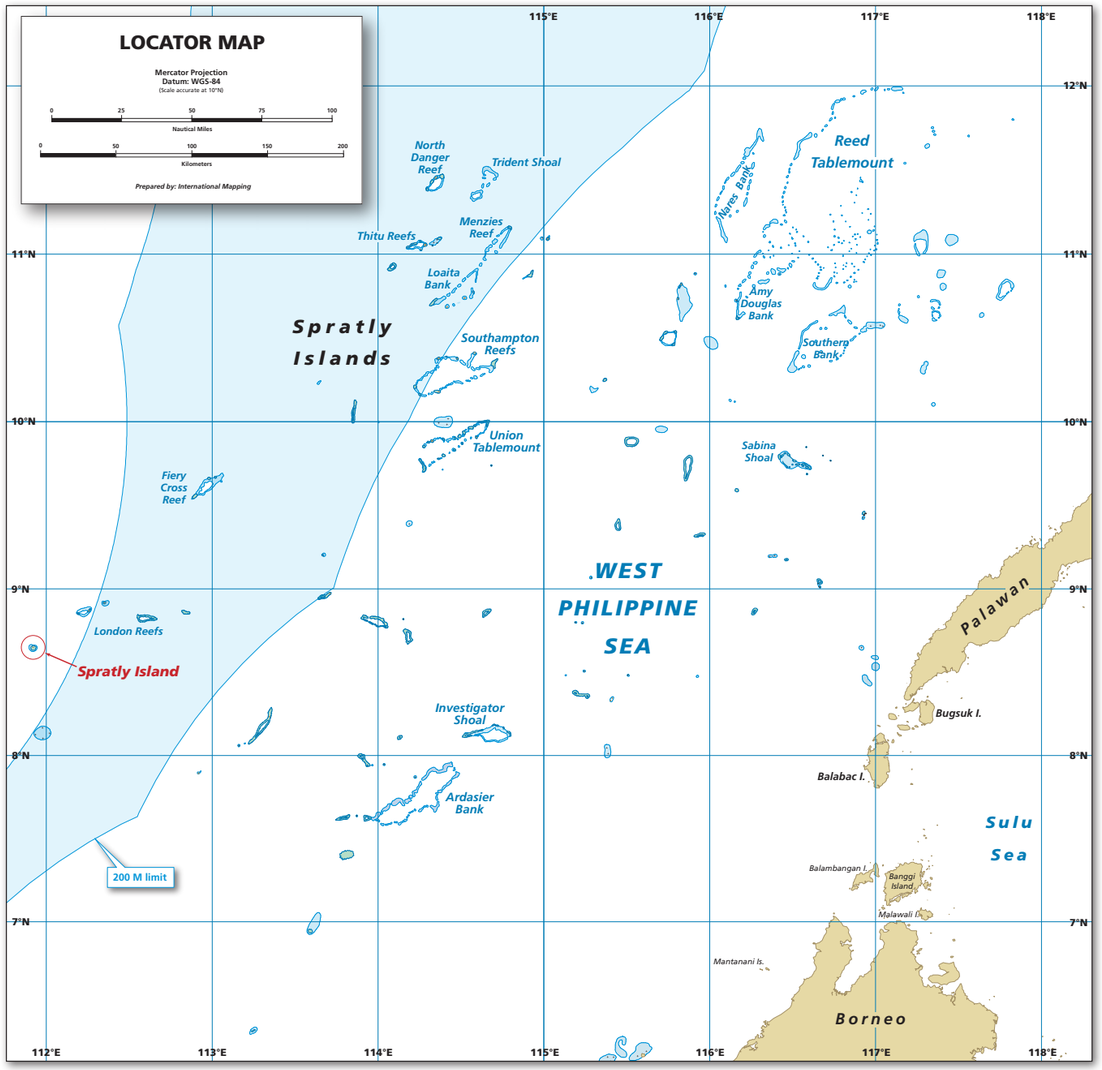
[17] Rommel C. Banlaoi, "Clash of sovereignties in the Spratlys", *The Philippine Star* (30 June 2011). SWSP, Vol. IV, Annex 420.

SPRATLY ISLAND

Also known as:

Chinese: Nánwēi dǎo (南威岛)
Philippine: Lagos Island

Coordinate Location: 08°38'30"N - 111°55'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 300.4 M
Distance to Hainan: 584.2 M
Claimed by: China, Vietnam
Occupied by: Vietnam



Satellite Image

Spratly Island
(WorldView-2, 17 September 2014)

Spratly Island Aerial View

SPRATLY ISLAND

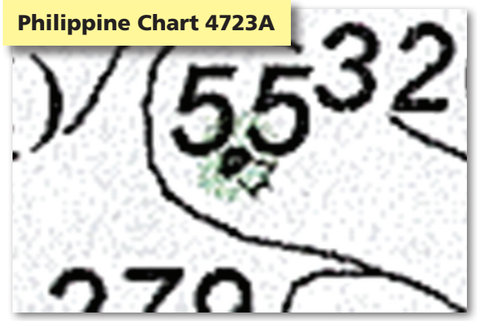
Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

LAGOS ISLAND (SPRATLEY ISLAND), (8° 39' N, 111° 55' E) is 2 meters (8ft) high and lies 45 miles N of Bombay Castle. The island is flat with white sand and broken coral. It is frequented by a large number of birds. In 1963, the island was covered with short green vegetation. An obelisk 6 meters high stands at the S point of the island. The palm trunks are conspicuous.

The island is surrounded by drying rocky ledges and coral heads; it lies on the S edge of a coral bank which is over 1 mile long and 0.9 mile wide. There are depths of less than 5.5 meters (18 ft) extending 0.5 mile from the island. The E side is steep-to with depths of 18 meters (60 ft). Depths of less than 5.5 meters (18ft) lies on the SW and W side, before the bottom falls away steeply into deep water.

Philippine Chart 4723A

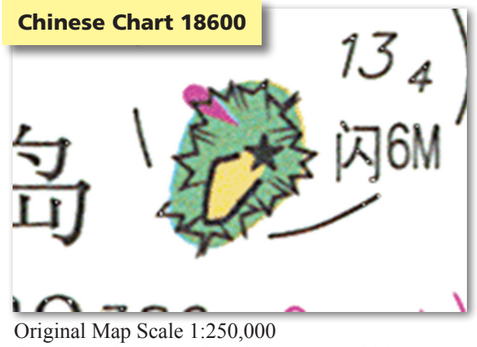


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Nanwei Island - The island is located approximately 22.5 nautical miles southwest of the West Reef of the Yinqing Reef group. The island is flat and is blanketed by weeds. During low tide, the island is approximately 390 meters in length, the width is approximately 310 meters, the surface area is 0.171 sq. km., and the height is approximately 2 meters. There are water wells on the island, and the water quality is the best in Nansha. The coast is made up of white-colored coral sand and crushed coral. There is a cairn (rock pile) erected near the center of the island's northern part, and there is a flagpole erected near the center of the island. All sides of the island are surrounded by exposed rock ledges and coral heads. Within the scope of 0.5 nautical miles from the north side of the island, the water depth is less than 5.4 meters. There are many cliffs on the east side of the island, while there are more gradual slopes on the west side.

Chinese Chart 18600



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC24

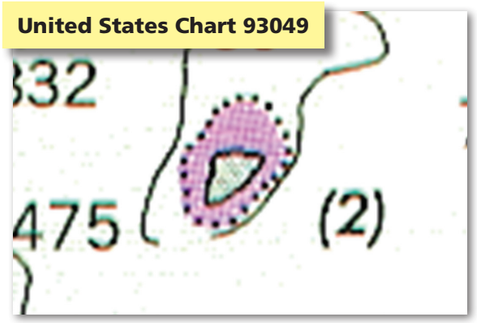
3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Spratly Island (Storm Island) (8°38'N., 111°55'E.), grass covered, 2.4m high, flat and less than 0.5 mile in extent, is located about 22 miles SW of West Reef, on the S end of a coral bank over 1 mile long.

The island has a margin of white sand and broken coral and is surrounded by drying ledges and coral heads. A cairn, 5.5m high, stands near its S point.

The E side of the island is steep-to, having depths greater than 18m when beyond 0.1 mile from shore. Depths of less than 14.6m and 5.5m extend 0.5 mile NE and N, respectively, from the island. To the W and SW, depths of less than 5.5m are found up to 0.2 mile off the island before the bottom falls away steeply.

United States Chart 93049



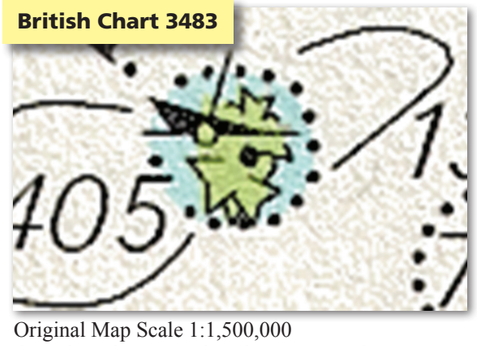
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC61

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Spratly Island (8°38'·98N 111°54'·69E) is flat, with a margin of white sand and broken coral. In 1963 the island was covered with short green vegetation. An obelisk, 6 m in height, stood at the S point of the island, and the palm trunks were conspicuous. A large number of birds frequented the island. A stranded wreck lies on the N side.

The island, which lies on the S edge of a coral bank which is more than 1 mile in length and 7 cables in width, is surrounded by drying rocky ledges and coral heads. The edges of the bank are steep- to. It is dangerous to venture into depths of less than 20 m due to the sheer and uneven nature of the bottom.

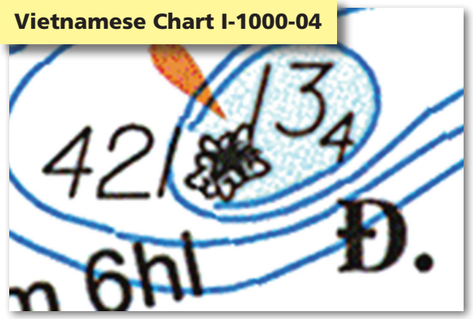
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

SPRATLY ISLAND
Additional Charts

Vietnamese Chart I-1000-04

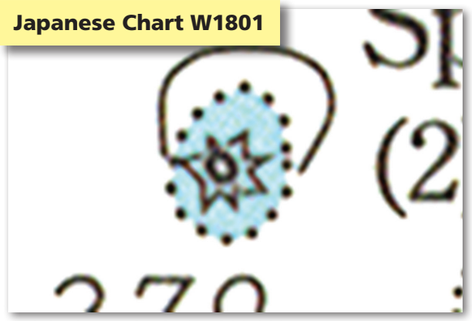


Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 60122

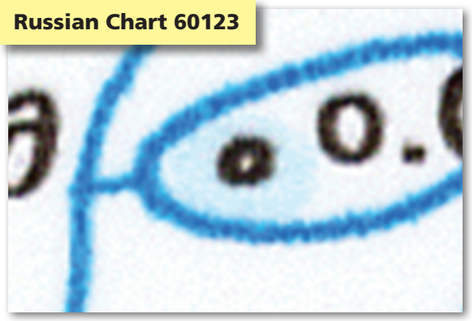
Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC35

Japanese Chart W1801



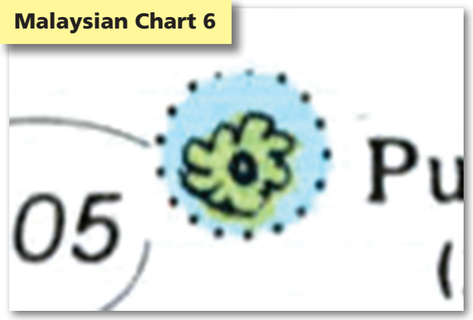
Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Russian Chart 60123



Original Map Scale 1:2,000,000
Complete chart reproduced as Annex NC36

Malaysian Chart 6



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Geographic/Hydrographic Observations by Dr. Robert Smith

Spratly Island, according to the Chinese sailing directions, is approximately 2 metres high and at low tide has an area of about 0.17 sq. km (310 metres wide and 390 metres in length). There is short green vegetation. An obelisk 6 metres high is located at its southern end. The entire "foot print" of the feature has been used to construct buildings. As may be seen in the satellite imagery and photograph, an airplane runway extends its entire length. A dock or pier has been built off the feature's southeast side.

Historical and Anthropological Information

Spratly Island takes its name from the captain of the British whaler *Cyrus*, which passed the feature on 29 March 1843.[1] There are no written records of prior sightings. A 1932 memorandum from the British Admiralty to the U.K. Foreign Office states that "it seems to be clear that Spratley Island was discovered and not re-discovered in 1843".[2] Spratly Island would come to provide "the collective name to [many of] the islands, reefs and shoals of the South China Sea".[3]

In 1864, Spratly Island was surveyed by the commander of the *H.M.S. Rifleman*. Captain Ward of the *Rifleman* reported that "not a bush or even a blade of grass [was] to be found" on the feature.[4] He "placed a beacon upon both [Spratly Island and Amboyna Cay] and also planted cocoanut trees and vegetables".[5]

By 1877, Spratly Island (and Amboyna Cay) had been visited by Messrs. James, Graham and Simpson, who discovered that the features "were entirely uninhabited, [but] that they contained considerable deposits of guano".[6] British government records note that:

> From investigations made at the Foreign Office at the time, it appeared that no foreign Government had officially claimed the sovereignty over [Spratly Island and Amboyna Cay], and that both islands were so far distant from Borneo on the one side, and the Malay Peninsula on the other, that they could not fairly be claimed as dependencies of either of these territories on the ground of contiguity and geographical position.[7]

British colonial authorities in 1878 granted permission to Messrs. James, Graham and Simpson to exploit guano on and hoist the British flag over Spratly Island,[8] making Great Britain the first to have claimed the feature.[9]

In May 1889, Spratly Island was visited by the *H.M.S. Wanderer*, which reported that it "was uninhabited and unoccupied, and that there were no remains of any kind whatever to show that anybody had ever lived upon the island or worked the guano".[10] Later that year, a 3-year licence to exploit guano on Spratly Island and Amboyna Cay was granted to the Central Borneo Company at a rent of 15 pounds per year, but "[t]here is no evidence that the Central Borneo Company ever took any action under their lease".[11]

British records suggest that the Japanese may have exploited guano on Spratly Island and the "group" of features around it between 1918 and 1929.[12] A 1939 memorandum from Japan to the United States similarly states that these features

> were no State's land until June 1921, when the Rasa Phosa Phosophate Co., a Japanese concern, having made extensive investigation of the Islands since 1917, invested a considerable amount of money in the building of permanent establishments for the development of the Islands.… In 1931, however, the Japanese settlers concerned were obliged to leave the Islands temporarily on account of business depression….[13]

In 1927, the French navy conducted hydrographic work near Spratly Island,[14] around the same time that "Taiwan based Japanese interests began large-scale guano exploitation" on the feature.[15] In 1929, France granted permission to the Phosphates Company of Tonkin to conduct phosphate mining research on Spratly Island,[16] although it is unclear whether research or phosphate extraction was ever carried out.

In April 1930, the commander of the French gunboat *Malicieuse* "took possession of Spratly Island … and the small islands belonging to the Spratly group" on behalf of France,[17] leading Britain to "discreetly revive[] its claim".[18] British archival records note that "[i]t is reported that on Spratley

Historical and Anthropological Information, cont'd

Island the French vessel discovered four marooned Chinese, who were thus saved from starvation".[19] In July 1933, a memorandum from the French Ministry of Foreign Affairs noting the *Malicieuse*'s "occupation" of Spratly Island was apparently sent to the Embassies of Britain, the United States and Japan.[20] That same year, France formally claimed Spratly Island along with several other features,[21] attaching the feature to the Baria Province.[22] A Japanese memorandum delivered to the United States suggests that France "again claimed [] sovereignty" over Spratly Island in 1937.[23]

In May 1937, the Commanding Officer of the *H.M.S. Herald* reported on its visit to Spratly Island, noting the existence of a well with "a good supply of slightly brackish water about 10 feet below the ground".[24] A 1938 report from the same ship concluded that Spratly Island was not "suitable as landing grounds for airplanes", and that such grounds could not even be constructed "with an enormous expenditure of material and labour".[25] A British naval cypher sent around the same time reported the existence of an "[u]noccupied native fishing camp" at Spratley Island, but that there was "[n]o sign of [the] Japanese having been in occupation otherwise".[26]

Spratly Island and several other features were claimed by Japan in 1939.[27] Spratly Island was "occupied by Japanese troops during March 1939",[28] who used it "as a staging post for the invasion of the Philippines".[29]

In October 1946, a French naval vessel "landed crews on Spratly Island".[30] The following year, a Chinese naval patrol erected a marker on the feature.[31]

In 1951, the British again surveyed Spratly Island.[32] The survey presented what is described as "a depressing picture of a long low island only a few feet above sea level, with some signs of war-time Japanese military occupation abandoned after a short period".[33]

A 1951 internal Dutch Ministry of Foreign Affairs report describes Spratly Island as "a pin-prick on the map that sticks out no more than 8 feet above water at high tide, likewise without [fresh] water, so that at best it would be suited as an observation post".[34] Referring to Spratly Island, among other features in the South China Sea, the same report states "[t]hat the sovereignty over these islands was never adequately established is not surprising, once it is known that they are practically uninhabitable".[35]

Minutes from a secret 1956 United States interdepartmental meeting indicate that "the Vietnamese had been to Spratly Island proper, where they had hauled down the Chinese [perhaps Taiwanese] flag and raised the Vietnamese flag and then evacuated without leaving a party".[36] The minutes do not specify when the Vietnamese visit occurred.[37]

In 1958, following the Borneo Pacific Company's expression of interest in applying for a license to exploit the feature, an internal British memorandum noted that the United Kingdom did "not acknowledge the claims of France, China and the Philippines as superior to its own", although it also did not recommend the granting of a license.[38] In August 1956, Spratly Island was visited by a South Vietnamese naval patrol.[39] South Vietnam sent military forces to Spratly Island around the time it incorporated ten Spratly features into its Phuc Tuy province in September 1973.[40] North Vietnam then took possession of Spratly Island in April 1975 during the closing weeks of the Vietnamese civil war.[41]

Describing Spratly Island as a "patch of land" whose "highest natural point is two and a half metres above sea level",[42] one commentator has observed there is "very little that's natural about Spratly Island now".[44] Although "[s]mall vegetable plots have been established behind high screens that attempt to keep out wind, sand and salt", and despite substantial government investment to "increase productivity", the feature is "hardly self-sufficient".[45]

Spratly Island is the most "heavily fortified"[46] of the features occupied by Vietnam. Although "the beach has been enclosed behind a high concrete wall intended to keep out both waves and unwanted visitors",[47] the feature reportedly contains a "runway, a pier, at least 35 building structures, around 20 storage tanks, at least 20 gun emplacements, at least 5 battle tanks and some parabolic disk antennas and a spoon rest radar".[48] Vietnam is reported to have installed "solar power generators, radar towers and an artificial harbor",[49] in addition to a "mobile phone mast" and "solar-powered floodlights".[50] Chinese Sailing Directions from 2011 claim that "[t]here are water wells on the island, and [that] the water quality is the best in Nansha".[51] However, a Vietnamese article notes that "[p]reviously, eight wells on the island were very brackish, [but that] green trees [planted] on the island helped desalinate some freshwater wells for 2-3 months a year".[52] Water must still be transported to Spratly Island from elsewhere.[53]

The Status of the Feature under UNCLOS

Spratly Island is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. This very small feature, which has an area at low tide of only 0.17 km^2, was described in 1877 as "entirely uninhabited",[54] and twelve years later as being "uninhabited and unoccupied", with "no remains of any kind whatever to show that anybody had ever lived upon the island".[55] A contemporaneous report indicated "not a bush or even a blade of grass [was] to be found" on the feature.[56] When visited in 1930, "four marooned Chinese" were discovered and "thus saved from starvation".[57] A survey undertaken in 1951 described "a depressing picture of a long low island only a few feet above sea level, with some signs of war-time Japanese military occupation abandoned after a short period".[58]

The Vietnamese military personnel stationed on the feature are dependent for their sustenance upon outside support.[59] They are there not to colonize the feature or exploit it economically, but to enhance Vietnam's sovereignty claim over it. Although some small vegetable plots are reported to exist, they must be protected by "high screens that attempt to keep out wind, sand and salt".[60] The beach itself has been "enclosed behind a high concrete wall" to keep out waves.[61] Guano extraction may have taken placed on a limited scale in the early 1900s, but proved economically unviable. No other economic activity appears to have been attempted on the feature. None takes place there now.

References

[1] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 15. MP, Vol. VIII, Annex 256.

[2] *Letter* from Secretary of the Admiralty, United Kingdom, to Secretary of State for Foreign Affairs, United Kingdom, No. M.02075/32 (14 Nov. 1932), para. 3 (emphasis in original). SWSP, Vol. III, Annex 362.

[3] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 14. MP, Vol. VIII, Annex 256.

[4]Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), pp. 585-586. SWSP, Vol. IV, Annex 390. *See also* D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic

Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 39. MP, Vol. VIII, Annex 256. ("Spratly Island had been accurately surveyed in 1864 by *Rifleman* under Commander John Ward".). *See also* United Kingdom, Hydrographic Department, *The China Sea Directory*, Vol. II (1879), p. 61. SWSP, Vol. IV, Annex 389.

[5] *Letter* from Foreign Office, United Kingdom, to the Law Officers of the Crown, United Kingdom (29 July 1932), p. 1. SWSP, Vol. III, Annex 361.

[6] *Id.*

[7] *Id.*

[8] *Id*., p. 2.

[9] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 92. SWSP, Vol. V, Annex 459. ("The idea that this patch of land, just 750 metres long and 350 metres wide, could actually 'belong' to anyone didn't arise until 1877. It was, unsurprisingly, Great Britain that first claimed it".).

[10] *See Letter* from Foreign Office, United Kingdom, to the Law Officers of the Crown, United Kingdom (29 July 1932), p. 3. SWSP, Vol. III, Annex 361.

[11] *Id*., p. 4.

[12] *Telegram* Secretary of State for the Colonies, United Kingdom, to Officer Administering the Government of Hong Kong (14 Jan. 1956). SWSP, Vol. III, Annex 384.

[13] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[14] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 58. MP, Vol. VIII, Annex 256.

[15] *Id*.

[16] *See Memorandum* from Minister of Foreign Affairs, French Republic, to French Embassies in London, Washington, Tokyo, The Hague and Manila (17 Apr. 1929). SWSP, Vol. III, Annex 357. ("Following consultations between officers of the Department and the ministries of the Navy and the Colonies, some of which you are aware of, it was decided that the mining research permit sought by the Phosphates Company of Tonkin would be granted to it by the Government of Cochinchina, with the understanding that the permit was being issued at the risk of the interested parties, this qualification being aimed at the possibility that some power might present valid claims over the group of islets to which Spratly Island belongs".).

[17] French Republic, Indochina Hydrographic Mission, *Procès-Verbal* (13 Apr. 1930). SWSP, Vol. III, Annex 358.

[18] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 94. SWSP, Vol. V, Annex 459.

[19] *Letter* from Foreign Office, United Kingdom, to the Law Officers of the Crown, United Kingdom (29 July 1932), p. 5. SWSP, Vol. III, Annex 361.

[20] *Draft Note Verbale* from the Ministry of Foreign Affairs of the French Republic to the Embassies of the United Kingdom, Japan, and the United States in Paris (17 July 1933). SWSP, Vol. III, Annex 369.

[21] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), p. 7837. MP, Vol. VI, Annex 159.

[22] French Republic, Governor of Cochin China, *Decree* (21 Dec. 1933), *reprinted in* Monique Chemillier-Gendreau, *Sovereignty over the Paracel and Spratly Islands*, Art. 1. SWSP, Vol. III, Annex 352.

[23] *Memorandum* from Japan to the United States (31 Mar. 1939), p. 2. SWSP, Vol. III, Annex 381.

[24] *Memorandum* from Commanding Officer, H.M.S. "Herald", to Commander-in-Chief, China Station, British Royal Navy (3 May 1937), p. 4. SWSP, Vol. III, Annex 370.

[25] W.C. Jenk., H.M.S. Herald, United Kingdom, *Report on Suitability of Islands in China Sea for Landing Grounds* (18 Apr. 1938), p. 1. SWSP, Vol. III, Annex 374.

[26] *Message* from H.M.S. "Herald", United Kingdom, to Commander-in-Chief, China Station, British Royal Navy (25 Apr. 1938). SWSP, Vol. III, Annex 375.

[27] *Memorandum* from Japan to the United States (31 Mar. 1939). SWSP, Vol. III, Annex 381.

[28] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 58. MP, Vol. VIII, Annex 256.

[29] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 10. SWSP, Vol. V, Annex 445.

[30] *Id*.

[31] *Id*.

[32] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 39. MP, Vol. VIII, Annex 256.

[33] *Telegram* Secretary of State for the Colonies, United Kingdom, to Officer Administering the Government of Hong Kong (14 Jan. 1956), para. 2. SWSP, Vol. III, Annex 384.

[34] *Memorandum* from Consul-General of the Netherlands in Beijing to the Minister of Foreign Affairs of the Netherlands, No. 2928/G-913/513 (4 Sept. 1951). SWSP, Vol. III, Annex 383.

[35] *Id*.

[36] *Record of Meeting* (United States National Archives Document) (19 Sept. 1956), p. 1. SWSP, Vol. III, Annex 385.

[37] *Id*.

[38] *Telegram* Secretary of State for the Colonies, United Kingdom, to Officer Administering the Government of Hong Kong (14 Jan. 1956). SWSP, Vol. III, Annex 384.

[39] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 17. SWSP, Vol. V, Annex 445.

[40] *Id*., p. 19.

[41] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), pp. 102-103. SWSP, Vol. V, Annex 459.

[42] *Id*., pp. 29, 9.

[43] *Id*., p. 99.

[44] *Id*., p. 100.

[45] Rommel C. Banlaoi, "Clash of sovereignties in the Spratlys", *The Philippine Star* (30 June 2011), p.

References, cont'd

1. SWSP, Vol. IV, Annex 420.

[46] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 99. SWSP, Vol. V, Annex 459.

[47] Rommel C. Banlaoi, "Clash of sovereignties in the Spratlys", *The Philippine Star* (30 June 2011). SWSP, Vol. IV, Annex 420.

[48] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 103. SWSP, Vol. V, Annex 459.

[49] *Id*., p. 99.

[50] Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea (A103)* (2011), p. 178. MP, Vol. VII, Annex 232.

[51] "Greening Trường Sa [Spratly Islands]", *Tuoitre Online* (4 June 2014). SWSP, Vol. IV, Annex 434.

[52] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), pp. 100-101. SWSP, Vol. V, Annex 459.

[53] *Letter* from Foreign Office, United Kingdom, to the Law Officers of the Crown, United Kingdom (29 July 1932), p. 1. SWSP, Vol. III, Annex 361.

[54] *Id.*, p. 3.

[55] Alexander George Findlay, *A Directory for the Navigation of the Indian Archipelago, and the Coast of China* (3rd ed., 1889), pp. 585-586. SWSP, Vol. IV, Annex 390. *See also* D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 39. MP, Vol. VIII, Annex 256. ("Spratly Island had been accurately surveyed in 1864 by *Rifleman* under Commander John Ward".).

[56] *Letter* from Consul General of the United Kingdom, Saigon, to Secretary of State for Foreign Affairs, United Kingdom, No. W 4148/178/17 (9 Mar. 1932), p. 14. SWSP, Vol. III, Annex 360.

[57] *Telegram* Secretary of State for the Colonies, United Kingdom, to Officer Administering the Government of Hong Kong (14 Jan. 1956), p. 1. SWSP, Vol. III, Annex 384.

[58] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), pp. 100-101. SWSP, Vol. V, Annex 459.

[59] *Id.*, p. 100.

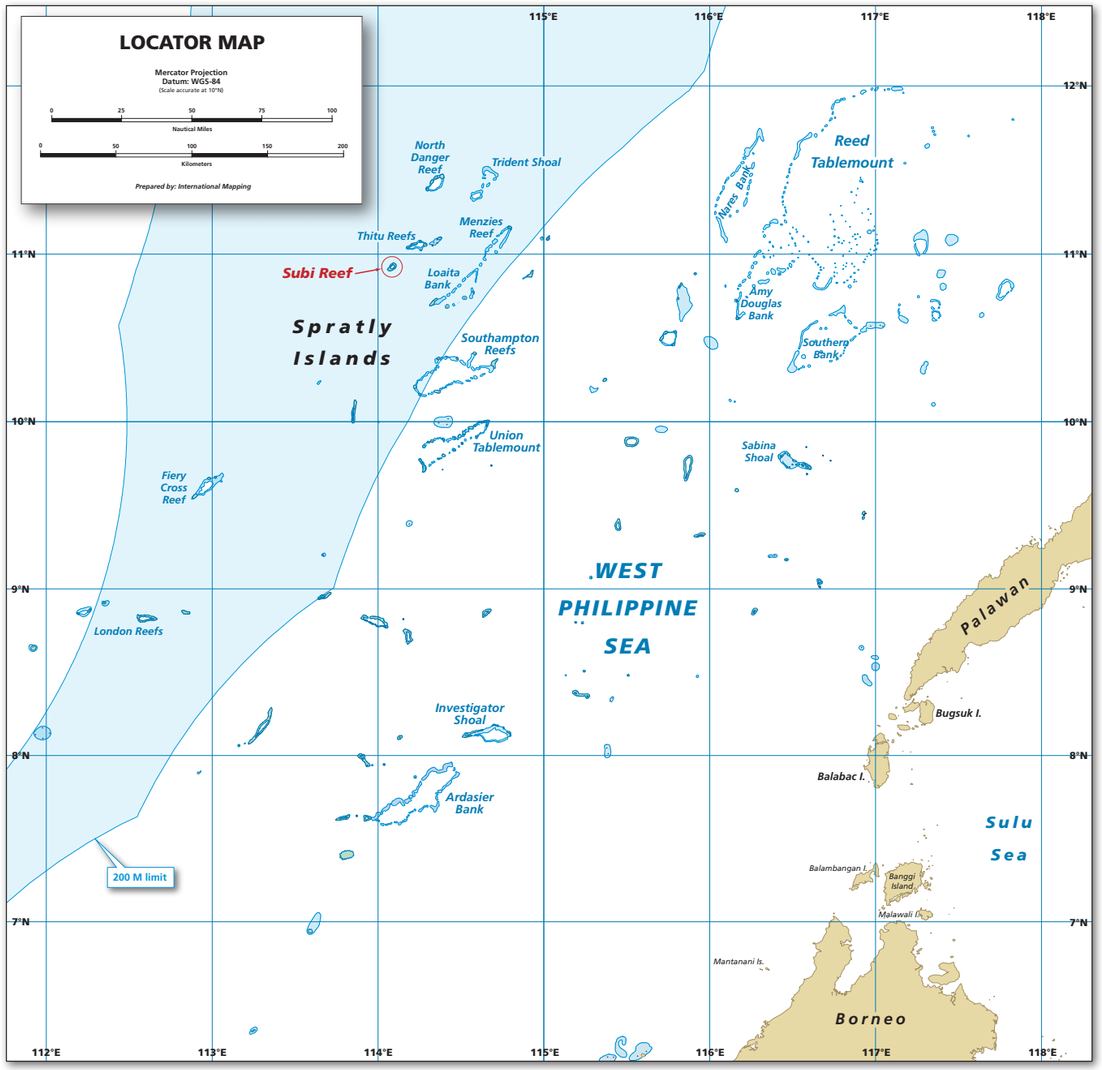
[60] *Id.*, 99.

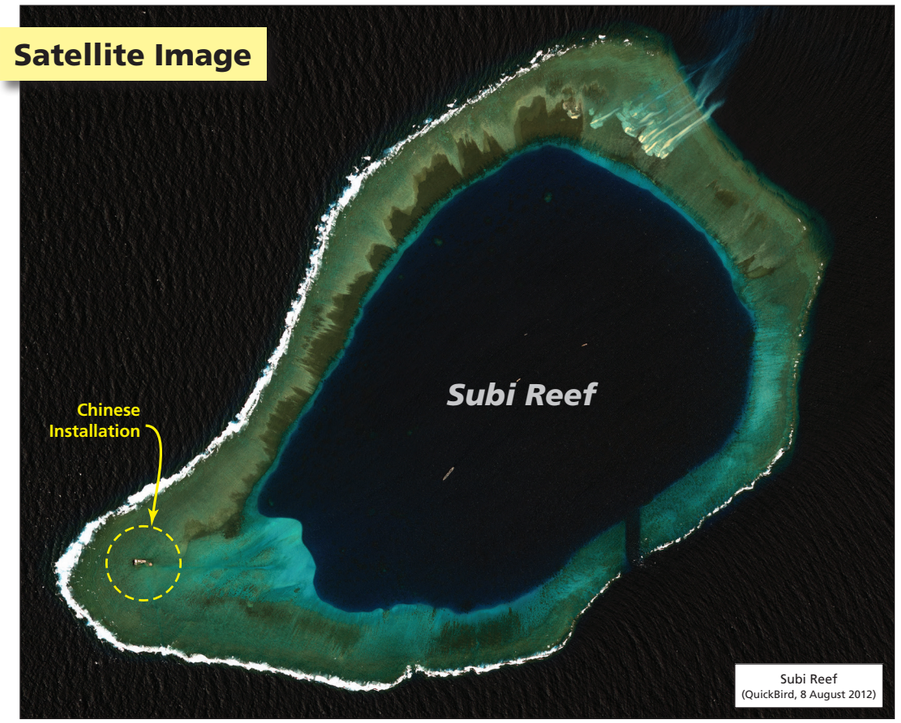
SUBI REEF

Also known as:

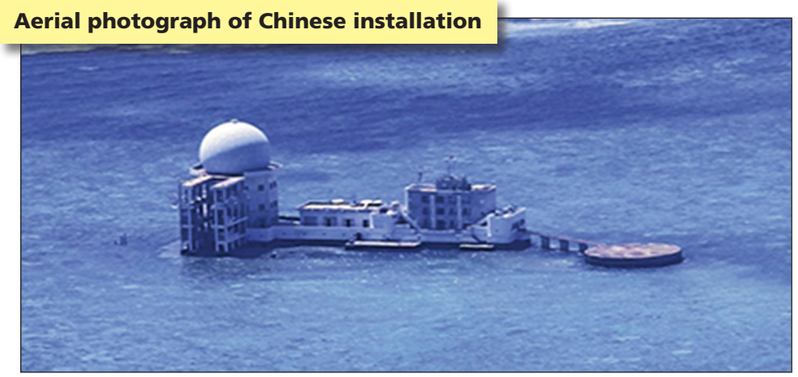
Chinese: Zhubi Jiao (渚碧礁)
Philippine: Zamora Reef

Coordinate Location: 10°55'30"N - 114°05'00"E
Nearest High Tide Feature: Thitu Island, 12.2 M
Distance to Palawan: 231.8 M
Distance to Hainan: 502.1 M
Claimed by: China, Philippines, Vietnam
Occupied by: China





Aerial photograph of Chinese installation



Installation photographed from sea

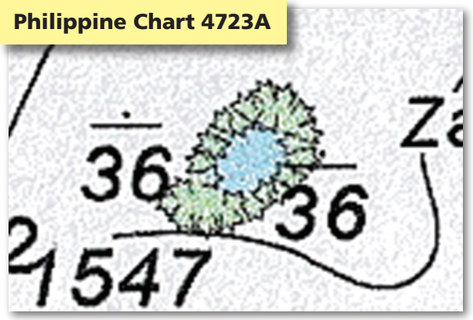
SUBI REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

ZAMORA REEF (10˚ 54’ N, 114˚ 06’ E) which usually breaks and is steep-to, lies 14 miles of SW of Pagasa Island. The reef is composed of coral which dries and surrounds a lagoon into which there appears no passage.

Philippine Chart 4723A

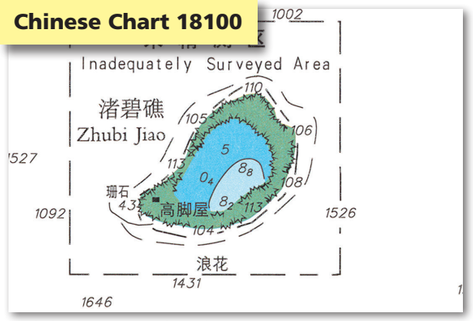


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Not included.

Chinese Chart 18100

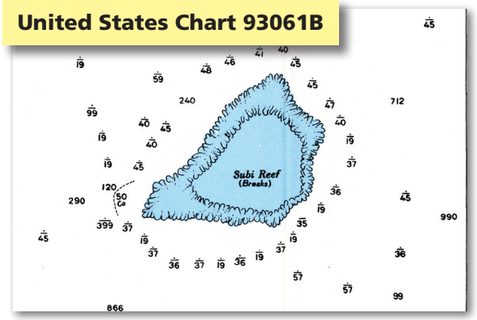


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC25

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Subi Reef (10°54'N., 114°06'E.) is located 14 miles SW of Thitu Island. It dries, surrounds a lagoon, is steep-to, and usually breaks. There is no apparent entrance into the lagoon.

United States Chart 93061B

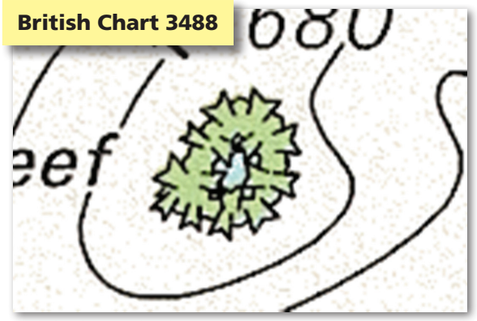


Original Map Scale 1:117,840
Complete chart reproduced as Annex NC50

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Subi Reef (10°54’.23N 114°06’.23E.), which dries, and upon which the sea usually breaks, is steep-to. It is composed of coral and surrounds a lagoon with no apparent entrance.

British Chart 3488

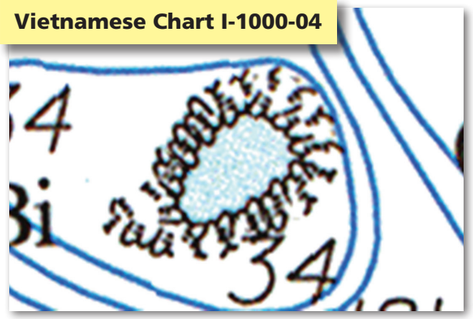


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC45

SUBI REEF

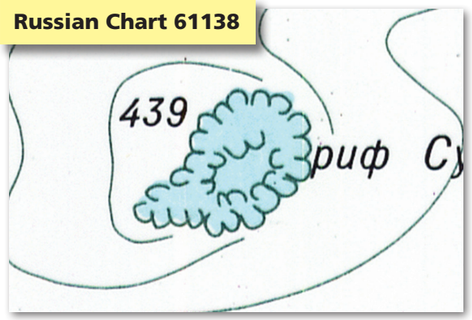
Additional Charts

Vietnamese Chart I-1000-04



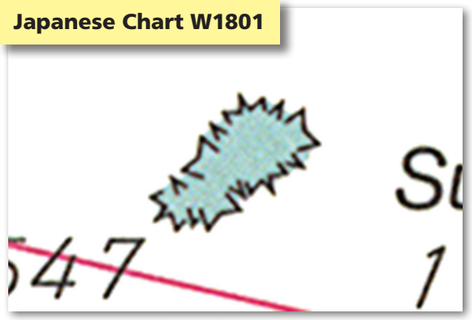
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage
stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Subi Reef is composed of coral that dries at low tide There is no entrance into the lagoon. Only the Chinese nautical chart shows a black rectangular symbol at the southwest part of the reef. This likely represents a building. Satellite imagery and photographs show this structure, which has been built on the drying reef and in the shallow lagoon.

The Status of the Feature under UNCLOS

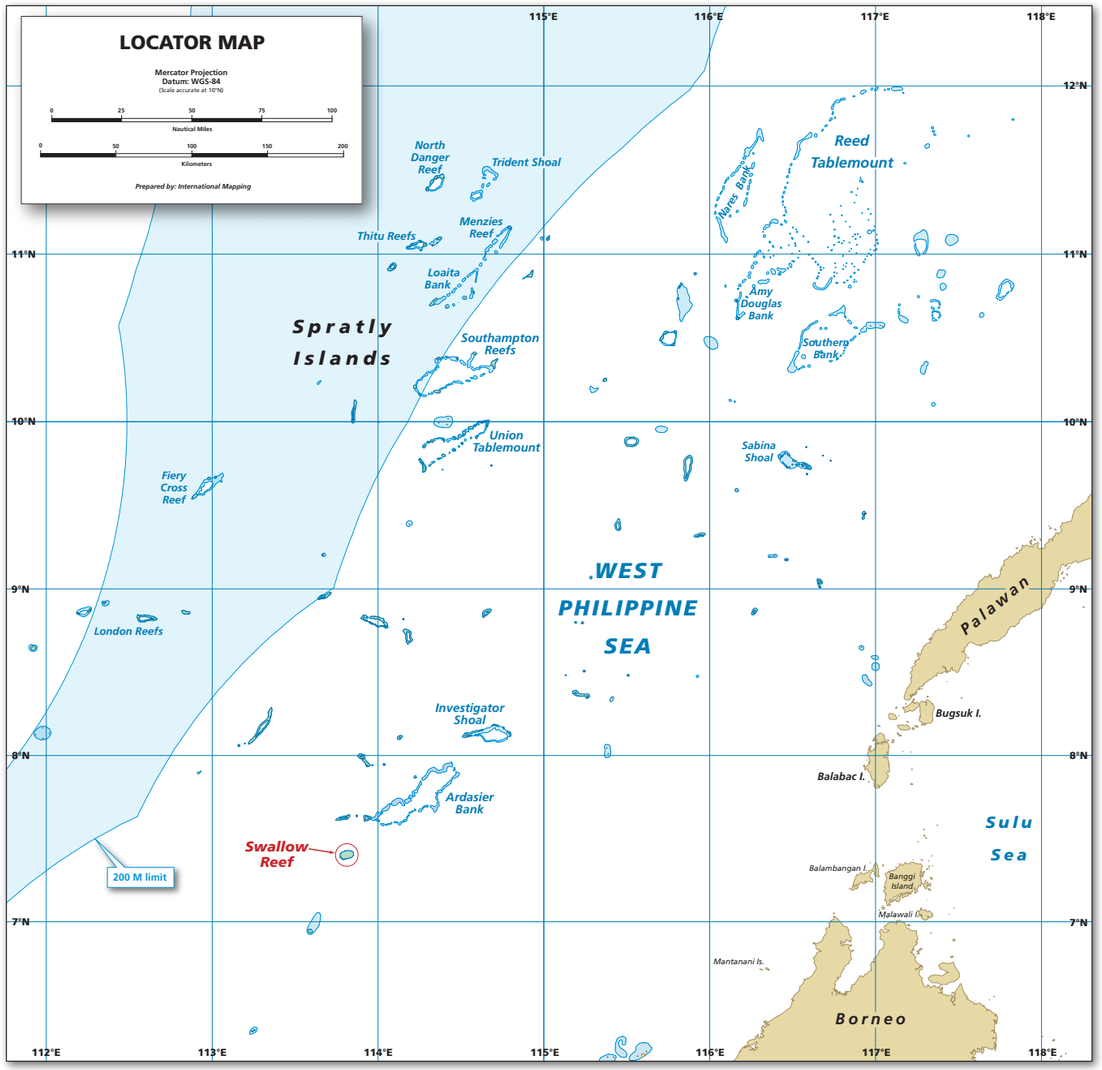
Subi Reef is a low-tide elevation under Article 13. As detailed in paragraphs 5.73-5.75 of the Memorial, Subi Reef is below water at high tide. The charts of the Philippines, China, the U.S., the U.K., Vietnam, Russia and Japan show that it dries at low tide. Subi Reef is within 231.8 M of Palawan, and is 12.2 M from the nearest high-tide feature (Thitu).

SWALLOW REEF

Also known as:

Chinese: Danwan Jiao (弹丸礁)
Philippine: Celerio

Coordinate Location: 07°23'00"N - 113°48'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 186.0 M
Distance to Hainan: 688.9 M
Claimed by: China, Malaysia
Occupied by: Malaysia



Satellite Image

Enlargement of Malaysian installation

Aerial photograph of Swallow Reef

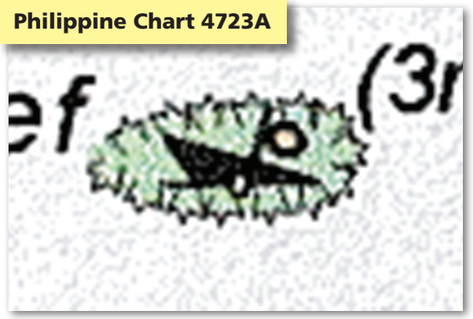
SWALLOW REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

SWALLOW REEF lies 14 miles S of Dallas Reef and is marked by breakers formed by a narrow belt of coral surrounding a shallow basin. Rocks from above-water to 3 meters (10 ft) high dotted its SE to E sides. A stranded wreck lies near the W end of the reef. A light is exhibited from a gray triangular concrete tower.

Philippine Chart 4723A



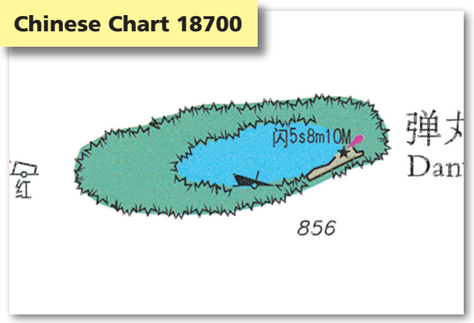
Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Danwan Reef - Located approximately 35 nautical miles south of Nanhai Reef, it is an atoll with a length of approximately 7,500 meters, a width of 2,300 meters, and a height of approximately 3 meters. The water in the lagoon is very deep. There is a noticeable solitary rock to the northeast of the atoll, which is usually exposed. On its southwest end, there is a ship that is exposed above the surface of the water.

Approximately 14 nautical miles to the north and east of Danwan Reef are Guangxing Reef, Guangxing Zi, and Andu Bank. Located to its northeast, Andu Bank is an underwater reef flat that is trending northeast-to-southwest and has a length of approximately 38 nautical miles and at its widest is 18 nautical miles. The water depth above it is 4 meters ~ 16.4 meters. The shallowest section is located at the northeast end of the reef flat. The southern edge of the reef flat is very steep, and the north side has an underwater submerged reef: Polang Reef. Guangxing Zi Reef is located at the southwest end of the reef flat, and it is an exposed coral bank. Guangxing Reef is approximately 8 nautical miles west of Guangxing Zi Reef, and between them, there is an underwater submerged shoal.

Chinese Chart 18700

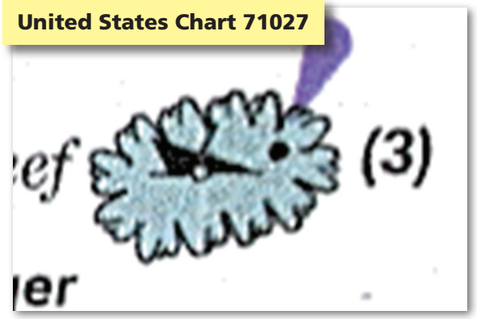


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC28

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Swallow Reef, 60 miles SE of Amboyna Cay and formed of a belt of coral surrounding a shallow lagoon, is 3.8 miles in length, E and W, and 1.2 miles in width. At its E and SE part are some rocks 1.5 to 3m high, the highest of which is in position 7°23'N, 113°49'E. Breakers usually mark the reef; a wreck lies stranded (1959) on its W end. By day, Swallow Reef has been sighted at 8 miles. Swallow Reef is reported (1986) to have extended in area.

United States Chart 71027



Original Map Scale 1:1,091,700
Complete chart reproduced as Annex NC62

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

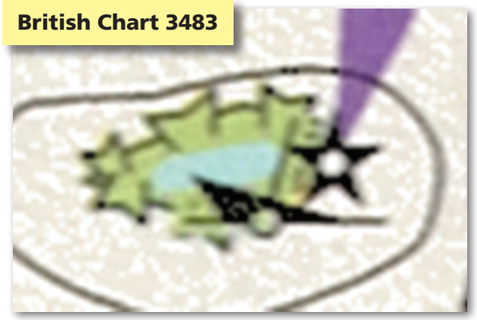
Swallow Reef (7°22'·95N 113°48'·84E), known to the Malaysians as Pulau Layang-Layang, lies close S of the S border of Dangerous Ground. It is formed by a narrow belt of coral surrounding a lagoon with 2 entrances on the S side. At the E end of the reef lie Batuan Rocks, 2 to 3 m high, and a light (grey triangular concrete tower).

On the SE side of the reef, an artificial island, 6 ½ cables in length, has been constructed. An airport runway, the buildings of a tourist resort and a naval base are situated on the island.

Terusan Timur, the E entrance into the lagoon, is close W of the island It is ½ cable wide, with depths of 4·8 to 7 m, and marked by light beacons (lateral). The alignment (000°) of leading lights on the N reef leads through Terusan Timur. A light buoy (port hand) is moored off W edge of reef.

... In 1986 the reef was reported to be larger in area than charted; it is marked by breakers.

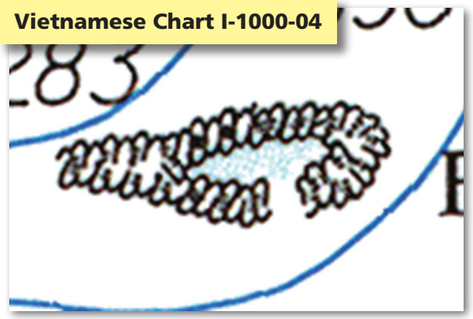
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

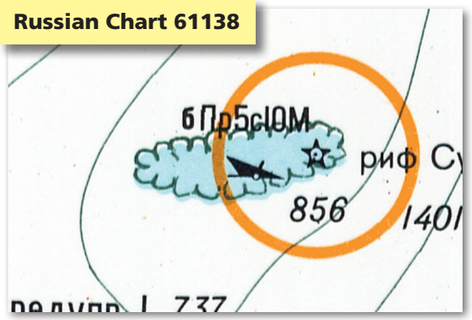
SWALLOW REEF
Additional Charts

Vietnamese Chart I-1000-04



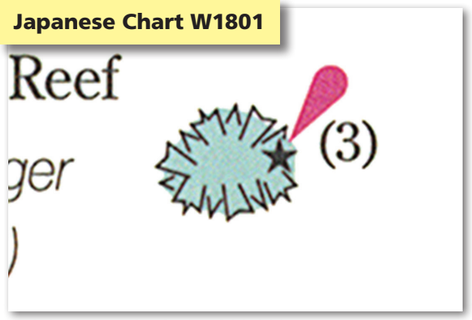
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



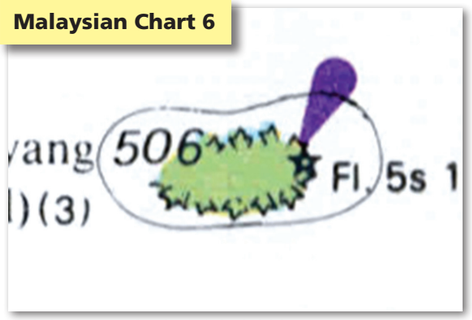
Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



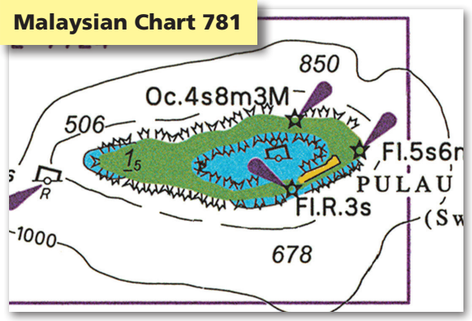
Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart 6



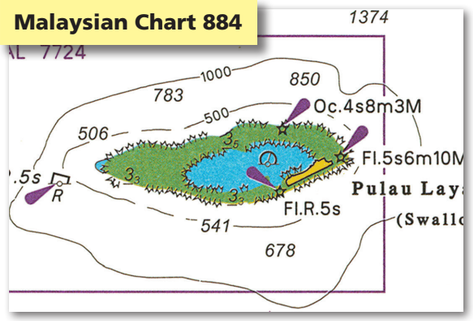
Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC13

Malaysian Chart 781



Original Map Scale 1:300,000
Complete chart reproduced as Annex NC14

Malaysian Chart 884



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC16

Geographic/Hydrographic Observations by Dr. Robert Smith

Swallow Reef is located near the southern extremity of Dangerous Ground. It is a belt of coral surrounding a shallow lagoon that has two entrances on the south side. The reef is 3.8 M in length, in an east-west direction, and 1.2 M wide. Batuan Rocks, with a height of 2-3 metres, are located at the eastern tip of the reef. These may be visible adjacent to the artificial installation in the aerial photograph. According to the British sailing directions, the man-made island which has been constructed on the southeast part of the reef is 6.5 cables, or 0.77 M, in length. The Chinese chart shows a brown feature that is likely the artificial structure. The Philippine chart shows a feature that has brown tint; given its location, it is unclear whether this symbol represents the rocks or the man-made installation. The artificial island includes an airport runway, buildings of a tourist resort, and a naval base. Satellite imagery and photographs show these man-made structures, located on the eastern rim of the reef.

Historical and Anthropological Information

The Philippines has been unable to locate any records regarding Swallow Cay prior to the early 1930s when it was claimed by France.[1] The British Admiralty rejected the claim, concluding it had "no basis in international law and calls for a strong protest without any further delay".[2] In opposing France's claim, the Admiralty observed that "Great Britain has not claimed ownership of these remote islands and reefs because of their uninhabitable character, but that in any case we cannot acquiesce in any such whole-sale annexation in an area in which we have for long been specially interested and have carried out much dangerous survey work".[3]

Swallow Reef was mentioned in the British sailing directions in 1936,[4] which suggested that the feature had likely been surveyed previously. A 1937 British memorandum states that the feature was "unlikely to be of any value whatsoever except possibly to seaplanes and flying boats".[5]

Malaysia claimed Swallow Reef in 1980.[6] In so doing, it claimed a territorial sea, but not an Exclusive Economic Zone. Swallow Reef was occupied by Malaysia in 1983,[7] and subsequently surveyed by it in 1987.[8]

Malaysia has undertaken "substantial reclamation efforts" to transform Swallow Reef.[9] By 1996, Malaysia had "dredged materials to expand Swallow Reef into a cay of 6 hectares".[10]

Now described as a "man-made island",[11] Swallow Reef is a "premier dive destination" for "visiting scuba divers".[12]

The Status of the Feature under UNCLOS

Swallow Reef is a rock as defined in Article 121(3), because it cannot sustain human habitation or economic life of its own. This feature, which consists only of a belt of coral surrounding a shallow lagoon and 2-3 metre high rocks, has an area of just 0.3572 km^2. The Philippines has identified no references to Swallow Reef prior to the 1930s, when it was claimed by France[13] and mentioned in British sailing directions.[14] Around that time, the UK concluded it was "uninhabitable"[15] and "unlikely to be of any value whatsoever except possibly to seaplanes and flying boats".[16] Malaysia, which has occupied Swallow Reef since 1983, has undertaken "substantial reclamation efforts",[17] converting it into what has been described as a "man-made island"[18] that is used as both a military facility and for tourism.

SWALLOW REEF

References

[1] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), para. 11. SWSP, Vol. III, Annex 363.

[2] *Id*.

[3] *Id*., para. 12.

[4] United Kingdom, Hydrographic Department, *China Sea Pilot*, Vol. II (1st ed., 1936), p. 90. SWSP, Vol. IV, Annex 396.

[5] United Kingdom, Hydrographer, "Probable Utility of Features as Landing Grounds for Air-Craft" (28 Oct. 1937), para. 5. SWSP, Vol. III, Annex 371.

[6] Jorge R. Coquia, "Maritime Boundary Problems in the South China Sea", *University of British Columbia Law Review*, Vol. 24 (1990), p. 119. SWSP, Vol. V, Annex 443.

[7] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 20. SWSP, Vol. V, Annex 445.

[8] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 48. MP, Vol. VIII, Annex 256.

[9] A. Erickson & A. Strange, "Pandora's Sandbox", *Foreign Affairs* (13 July 2014), p. 3. SWSP, Vol. V, Annex 458.

[10] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 21. SWSP, Vol. V, Annex 445.

[11] "Layang - Layang Island", *Sabah Tourist & Travel Guide*, *available at* http://sabah.attractionsinmalaysia.com/Layang-layang-Island.php (accessed 19 Feb. 2015). SWSP, Vol. V, Annex 464.

[12] "Spratly Islands Conflicting Claims", *Global Security*, *available at* http://www.globalsecurity.org/military/world/war/spratly-conflict.htm (accessed 3 Mar. 2015). SWSP, Vol. V, Annex 465.

[13] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), pp. 297-98. SWSP, Vol. III, Annex 363.

[14] United Kingdom, Hydrographic Department, *China Sea Pilot*, Vol. II (1st ed., 1936), p. 90. SWSP, Vol. IV, Annex 396.

[15] *Letter* from Secretary of the Admiralty, United Kingdom, to Undersecretary of State, Foreign Office, United Kingdom (8 Feb. 1933), p. 298. SWSP, Vol. III, Annex 363.

[16] United Kingdom, Hydrographer, "Probable Utility of Features as Landing Grounds for Air-Craft" (28 Oct. 1937), p. 2. SWSP, Vol. III, Annex 371.

[17] A. Erickson & A. Strange, "Pandora's Sandbox", *Foreign Affairs* (13 July 2014), p. 2. SWSP, Vol. V, Annex 458. ("Meanwhile, Malaysia's Naval Station Lima on Swallow Reef is the result of substantial reclamation efforts after Kuala Lumpur's occupation of the atoll in 1983".).

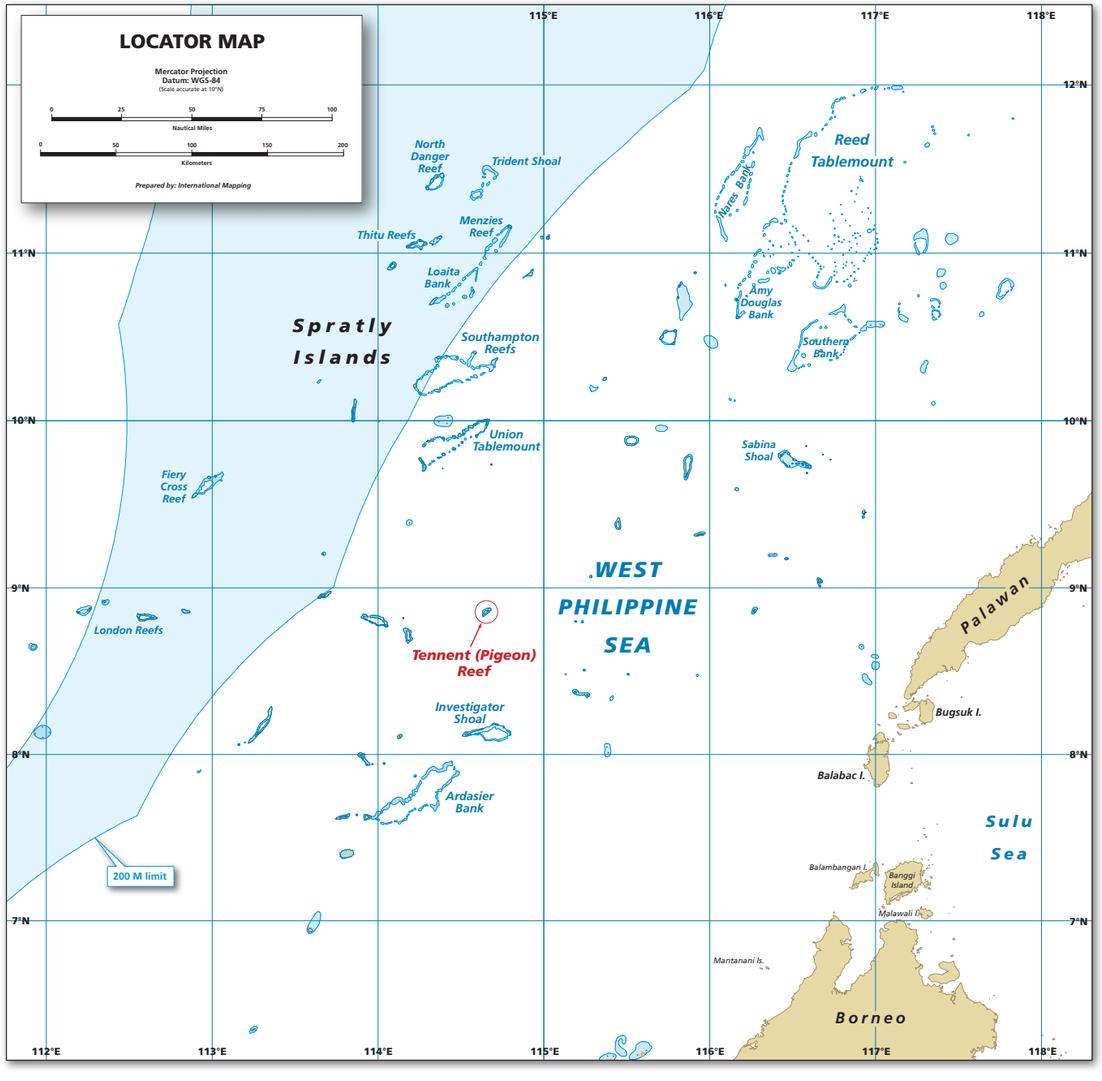
[18] "Layang - Layang Island", *Sabah Tourist & Travel Guide*, *available at* http://sabah.attractionsinmalaysia.com/Layang-layang-Island.php (accessed 19 Feb. 2015), p. 1. SWSP, Vol. V, Annex 464.

TENNENT REEF

Also known as:

Chinese: Wumie Jiao (无乜礁)
Philippine: Lopez-Jaena

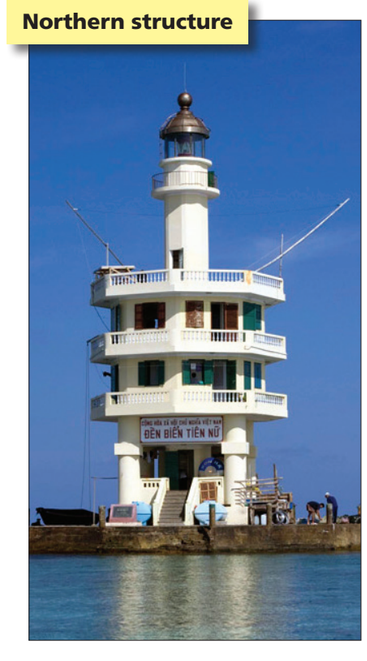
Coordinate Location: 08°51'50"N - 114°39'10"E
Nearest High Tide Feature: Commodore Reef, 44.7 M
Distance to Palawan: 144.2 M
Distance to Hainan: 626.9 M
Claimed by: China, Philippines, Vietnam
Occupied by: Vietnam



Satellite Image

Tennent Reef
(WorldView-2, 9 March 2014)

Northern structure



Southern structure on Tennent Reef

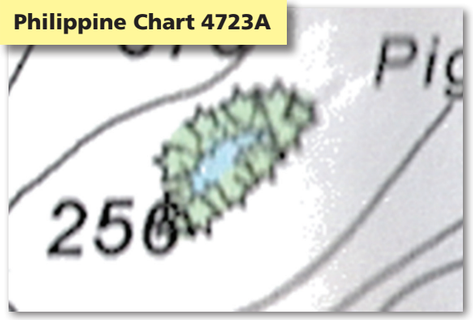
TENNENT REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

TENNENT REEF, which dries is situated with its SW extremity (8° 50' N, 114° 36' E) 25 miles ENE of Osmeña Reef. There are numerous above-water rocks on the reef which encloses a lagoon. The lagoon may be accessible to boats at HW.

Philippine Chart 4723A

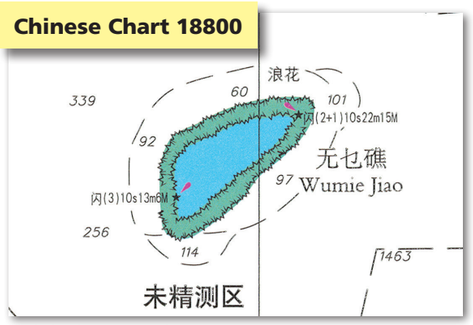


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Not included.

Chinese Chart 18800

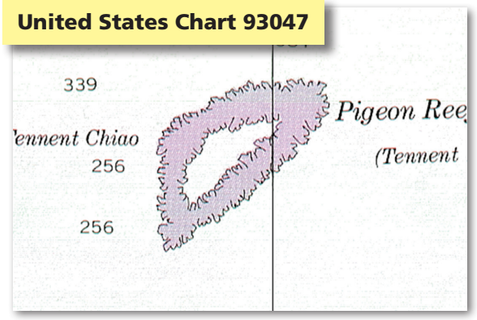


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC29

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Pigeon Reef (Tennent Reef) (8°52'N., 114°38'E,.), marked by a light, is a triangular-shaped drying atoll completely enclosing a lagoon which is accessible to boats at HW. There is no entrance. The reef is brown in color and of volcanic origin with a lining of white coral around the inside of the rim.

United States Chart 93047

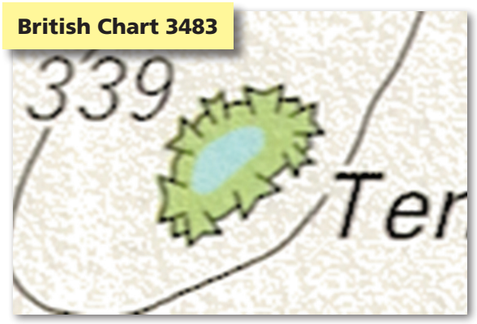


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC55

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Tennent Reef (8°52'·00N 114°39'·00E), which dries, has numerous above- water rocks on it. The reef encloses a lagoon to which there appears to be no entrance, but it is probably accessible to boats at HW. A light (2.54) is exhibited from Tennent Reef.

British Chart 3483

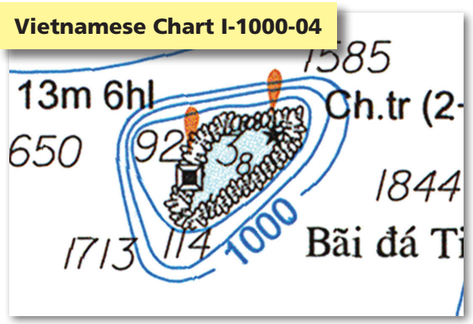


Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

TENNENT REEF

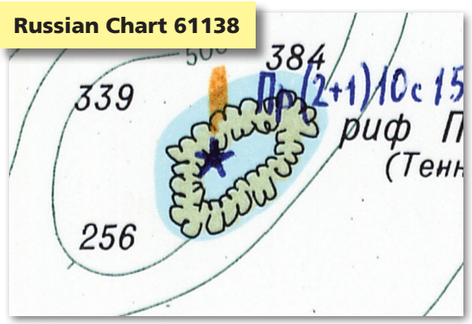
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801

Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Tennent Reef dries at low water. It encloses a lagoon to which there is no entrance but likely is accessible to boats at high water. Although the Philippine and British sailing directions reference "above-water rocks", they do not indicate whether these are above water at high tide. All the nautical charts show this feature as a drying reef. There is a man-made structure, including a light tower, on the reef. The Vietnamese and Japanese nautical charts each show a black square on the west edge of the reef that likely represents one of the man-made installations that has been built on the reef. Satellite imagery and photographs show two installations, the second of which is located northeast corner of the reef.

Historical and Anthropological Information

No record has been found of any human habitation at Tennent Reef, also known as Pigeon Reef, before it was occupied by Vietnamese military forces in 1988.[1] A Philippine plane was shot at by Vietnamese troops during a flyover of the reef in 1999.[2]

The Status of the Feature under UNCLOS

Tennent Reef is a low-tide elevation under Article 13. All of the nautical charts indicate that Tennent Reef is a drying reef and lack any indication of a naturally formed area of land that is above water at high tide. It is 144.2 M from Palawan and 44.7 M from the nearest high-tide elevation, Commodore Reef.

References

[1] Yann-huei Song, "United States and Territorial Disputes in the South China Sea: A Study of Ocean Law and Politics", *Maryland Series in Contemporary Asian Studies*, No. 1 (2002), p. 52. SWSP, Vol. V, Annex 450; Cynthia D. Balana, "Philippines behind other Spratlys claimants in building defensive structures", *Philippine Daily Enquirer* (16 June 2011). SWSP, Vol. IV, Annex 418.

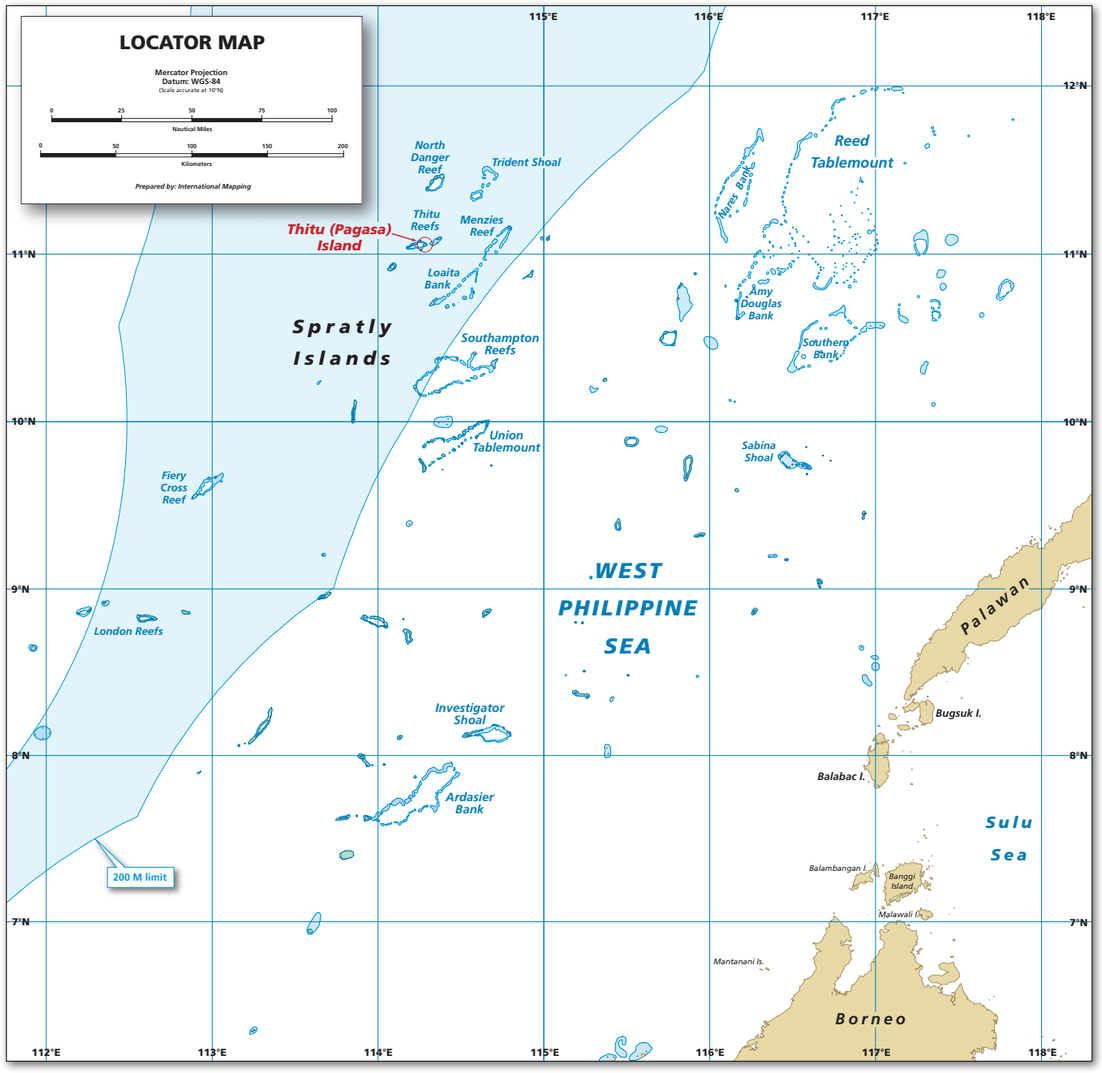
[2] Bruce Elleman, "Maritime territorial disputes and their impact on maritime strategy: A historical perspective", in *Security and International Politics in the South China Sea: Towards a cooperative management regime* (S. Bateman and R. Emmers, eds., 2009), p. 72. SWSP, Vol. V, Annex 453.

THITU (PAGASA) ISLAND

Also known as:

Chinese: Zhongye Dao (中业岛)
Philippine: Pagasa Island

Coordinate Location: 11°02'00"N - 114°16'00"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 227.5 M
Distance to Hainan: 501.5 M
Claimed by: China, Philippines, Vietnam
Occupied by: Philippines



Satellite Image

Thitu (Pagasa) Island
(QuickBird, 24 August 2008)

Aerial view of Thitu Island

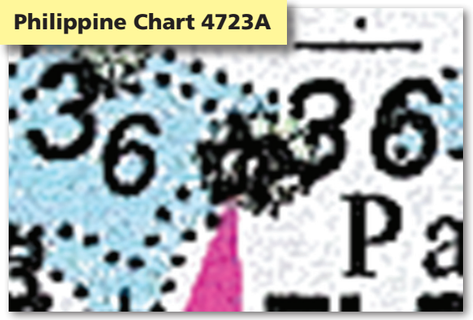
THITU (PAGASA) ISLAND

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Pagasa Island (11°03' N, 114°17' E), 3 meters (11 ft) high lies 24 miles NNW of Kota Island. It is situated near the E end of the most W of two coral banks, separated by a narrow and deep channel, and consists of several dangerous patches. The island is surrounded by a drying reef which extends up to 0.5 mile from its NE side. It is covered with grass and scrub, up to 18 meters high except at a palm grove at its SW end. A well, with brackish but drinkable water exists near the beach through the palm grove. Pagasa Island light (11°02.3' N, 114°16.9' E) displayed atop a, structure exhibits Flashing White every 5 seconds.

Philippine Chart 4723A



Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

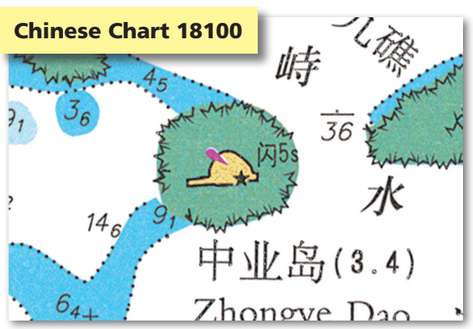
2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Zhongye Island - Located at the eastern end of the Zhongye Reefs' western side reef basin, approximately 710 meters in length, approximately 570 meters in width, and with a surface area of 0.415 sq. km. The southwest end of the island has over 100 palm trees, it is approximately 5 meters ~ 7 meters high, and it can be sighted from seven nautical miles ~ eight nautical miles away. The rest is a growth of shrubs and weeds approximately 1.8 meters in length. Coral shoal extends on all sides of the island, and the shoal edge on the northeast side is approximately five chains away from shore.

The western side reef basin extends from Zhongye Island to the west approximately six nautical miles. Aside from some exposed reef on all sides of the shoal, it is all shallow shoals with irregular water depths. The Tiexiandong Reef lies approximately 1.5 nautical miles northwest of Zhongye Island. The water depth between this reef and Zhongye Island is 4.5 meters ~ 14.6 meters. Approximately 1.3 nautical miles southwest of this coral reef lies Tiexianzhong Reef, and on top of it is a sandbar. The opening to the lagoon lies between these two reefs. Approximately two nautical miles southwest of Zhongye Island is an underwater reef.

The eastern side reef basin lies approximately 1.2 nautical miles east of Zhongye Island. It is comprised of a large group of reef and shoal patches. Its western end is located approximately seven chains east of reef extending from Zhongye Island. It expands approximately 4.5 nautical miles from the western end to the northeast direction. Tiezhi Reef lies at its eastern end.

Chinese Chart 18100



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC25

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Thitu Island (11°03'N., 114°17'E.) lies near the SW part of a drying reef on the E end of the W of the two coral banks. It is 4m high and overgrown with grass and scrub brush.

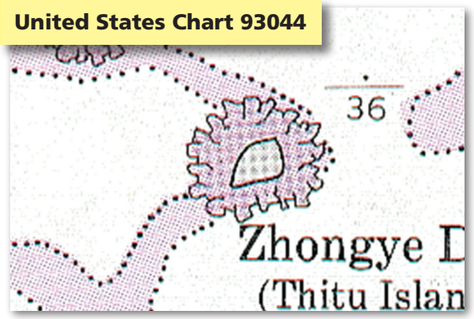
A light is shown from the SW end of the island near a palm grove and a well is found near the beach through the palms. Occasionally, fishermen inhabit the island as it is possible to effect a landing during the Northeast Monsoon in the middle of the W side where there is an opening in the fringing reef.

...

The W reefs of Thitu Island are composed of several drying reefs and shoal patches. A sand cay lies on one of these drying reefs about 3.5 miles W of the island. Entrance to the lagoon can be taken through the passage to the E of the sand cay, with a least depth of 9m in the center of the channel. Many of the surrounding reefs are marked by breakers.

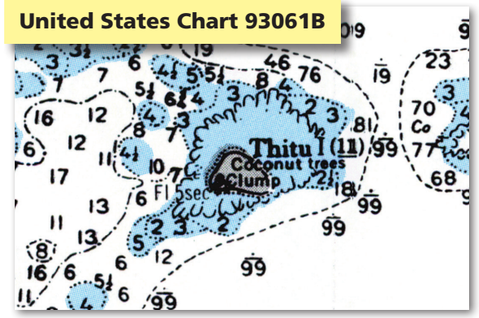
The E reef, its W edge lying about 0.7 mile E of Thitu Island, is a mass of drying coral and shoal water. This reef extends about 4.5 miles in a NE direction.

United States Chart 93044



Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

United States Chart 93061B



Original Map Scale 1:117,840
Complete chart reproduced as Annex NC50

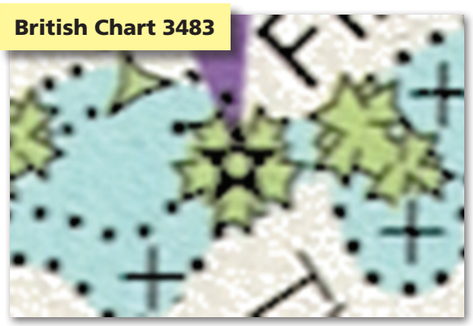
4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Thitu Island (11°03'·46N 114°16'·77E) and its associated reefs are situated on two adjacent coral banks separated by a narrow, deep channel.

Thitu Island lies near the E end of the W bank. It is low and covered with grass and scrub, except for a palm grove at its SW end. The island is surrounded by a drying reef which extends up to 5 cables from its NE side.

A light (metal structure) is exhibited from the W side of the island.

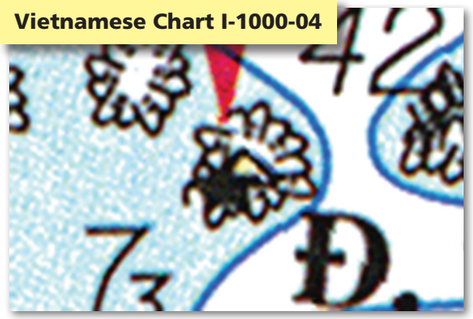
British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

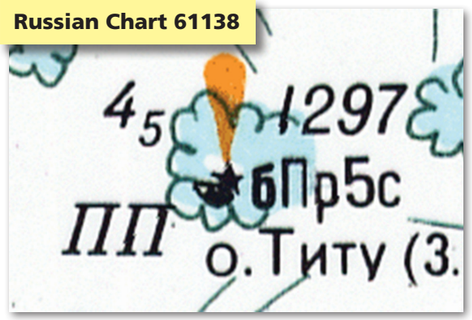
THITU (PAGASA) ISLAND
Additional Charts

Vietnamese Chart I-1000-04



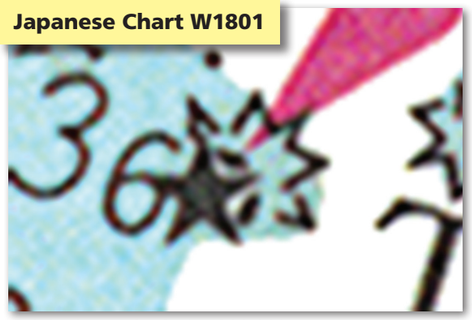
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Thitu (Pagasa) Island is 4 metres high and has an area of about 0.4 km^2. The feature is surrounded by a reef that dries at low water and extends up to 0.5 M from its northeast side. The feature is covered with grass and scrub. The U.S., Chinese, Japanese, and Vietnamese nautical charts show an island sitting on the reef. Satellite imagery and aerial photographs show that buildings that have been constructed. A runway has been built along the entire side of the feature, and extended beyond, on top of the reef.

Historical and Anthropological Information

Thitu is the second-largest insular feature in the Spratly Islands.[1] Only slightly smaller than Itu Aba; it comprises approximately 0.4 km^2, as compared to Itu Aba's 0.43 km^2. Thitu was reported by British ships in 1762, and subsequently surveyed by the *H.M.S. Rifleman* in 1867.[2] In the same year, *The Nautical Magazine and Naval Chronicle for 1867* noted the existence of "some low bushes and two stunted cocoa-nut trees, near which is a small well and a few plantain trees".[3] No human habitation or settlement was reported. The well appears to have been dug by fishermen on temporary sojourn, although none were sighted at the time.

French archival records indicate that in April 1933, the commander of the French survey ship *Alerte* "took possession" of Thitu on behalf of France.[4] That same year, France claimed sovereignty over Thitu.[5] A contemporaneous *New York Times* article suggested that Thitu was "part of a large group of dots on the ocean which are fragments of coral reefs and rise not more than eight feet above the sea".[6] It cited U.S. State Department officials as stating at the time "that they had never even heard of the islands [claimed by France] until mention of them was made in press dispatches".[7]

On 27 August 1933, *The New York Times* reported that Thitu, as well as Loaita and Itu Aba, "belonged to no one until the captain of the *Astrolabe* formally claimed them for France on April 7 and buried below a carved stone on each of them a bottle containing an account of how they passed into French possession". These features were:

> almost entirely uninhabited, except for a few Chinese engaged in turtle fishing, although the Japanese claim they have for some time been engaged in exploiting a superficial layer of phosphate on some of the islands.[8]

British Sailing Directions from 1937 state that Thitu "was inhabited by 5 Chinese in 1933".[9] A 1937 memorandum from the Commanding Officer of the *H.M.S. Herald* reporting on its visit to Thitu stated that, with the exception of a palm grove, the feature was covered by "scrubby grass and almost impenetrable bush creepers". He also noted:

> The only sign of human habitation was in the palm grove, where fisherman had landed to burn 'joss' as is their custom before fishing. There is a well with brackish but drinkable water ... and a thin concrete base about 6 feet square marks what had apparently once been the foundation of a small hut. ... There is also a concrete block, which might have been a gravestone or an observation stone.[10]

A memorandum by an officer of the *H.M.S. Herald* the following year, which had been commissioned to report on the suitability of several islands as landing grounds for aircraft, reported that a single Japanese fishing boat had been sighted at Thitu. He concluded:

> None of these islands are suitable as landing grounds for airplanes and only in the case of Thi Tu and Itu Aba islands might such grounds be constructed, with an enormous expenditure of material and labour.[11]

The memorandum observed that the feature contained "a Chinese shrine with joss sticks, signs of fishermen's occupation — not necessarily recent — a well, and a concrete post in a clearing bearing characters".[12]

A naval cypher sent on 27 April 1938 stated that the islands visited were not suitable for landing ground or for construction of ground, indicating that:

> Itu Aba and Thi Tu Islands [are] considered by R.A.F. Officers barely sufficient in extent for aircraft to take off.... Surface even if levelled incapable of bearing weight required

> without foundation being laid over whole island for which no material or labour available locally. ... These islands only sandy cays consolidated by growth of trees and scrub.[13]

A 1939 Japanese memorandum delivered to the United States suggests that France "again claimed [] sovereignty" over Thitu in 1937.[14] Thitu and several other features were annexed by Japan in 1939.[15]

In 1956, Thitu was occupied and supplied by individuals associated with the Philippine private citizen Tomas Cloma,[16] who declared the establishment of the "Free Territory of Freedomland"[17] the same year. Facing objections from several States[18] as well as Taiwan, which sent reconnaissance patrols into the Spratly Islands,[19] Cloma purported to "cede[] his claim" to the Philippines.[20] In 1971, Philippine armed forces landed on Thitu,[21] which has remained under Philippine administration ever since.

Thitu hosts a small military garrison, the size of which varies but which is generally not more than 50 personnel, who receive "loneliness pay".[22] Although "[o]fficially, according to the 2010 census, [Thitu] has a population of 222[,] [i]n reality, only around 60 live there at any one time. This is because the central government subsidy only feeds that many people, and because "it requires a particularly tough constitution to stick out the conditions" on Thitu.[23]

Structures on the feature include a "few dozen houses on sandy tracks",[24] a guest house "for guests of the Armed Forces of the Philippines",[25] a multipurpose building,[26] a municipal building, a community hall, a communications tower, a water plant,[27] and a health centre with a capacity for five patients.[28] In 2012, Thitu opened a "school building with one teacher, three nursery children and five kindergarten pupils", although "[i]t was just a single room with borrowed furniture".[29] Residents must return to the mainland for secondary education, as none is available on Thitu.[30] The feature does not have a harbour or jetty for larger ships, "so supplies have to be loaded onto small boats and ferried to shore".[31]

Thitu has a potable ground water source.[32] The water was described in 1995 as "brackish but drinkable".[33] Although there is a water plant, there is no running water, and the only power on the island comes from generators[34] and solar units.[35] While Thitu has an airstrip,[36] it is used "mainly by military aircraft" for "resupply" purposes.[37] Repairs to the airstrip, which is in poor condition, would require "the dredging of an anchorage area to allow the entry of vessels with construction materials".[38] Supplies arrive by sea: "Almost everything" is imported by boat.[39]

Because the "sandy characteristics" of Thitu's soil make the growing of crops difficult, "planting soil" is transported from mainland Palawan. Since no rice or grain is produced on the island, there is a "basic commodity subsidy" provided by the municipal authorities. The "basic commodities" are "imported from mainland Palawan and subsidized by the local government".[40]

The Status of the Feature under UNCLOS

Thitu is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. This very small feature, which is only 0.4 km^2, is virtually the same size as Itu Aba, the largest of the Spratly features. In 1933, Thitu, along with Itu Aba, was described as a "deserted coral reef[]".[41] As detailed in paragraphs 5.98-5.99 and 5.102-5.114 of the Memorial, Thitu is unable to sustain the military personnel and civilians who have been transplanted and maintained there by the Philippines since 2001 without supply from the outside. There was no human settlement on the feature previously. Although some food is grown on Thitu using soil transported from Palawan,[42] the yields are insufficient to sustain even its minimal human population, which is dependent upon the arrival of supplies from Palawan.[43]

References

[1] C. Thayer, "What If China Did Invade Pag-asa Island?", *The Diplomat* (16 Jan. 2014), p. 1. SWSP, Vol. IV, Annex 431.

[2] United Kingdom, Foreign Office, *List of Islands and Reefs in the Area Claimed by France* (undated), p. 1. SWSP, Vol. III, Annex 354.

[3] "Navigation in the China Sea", *Nautical Magazine and Naval Chronicle for 1867* (21 Sept. 1867), p. 700. SWSP, Vol. IV, Annex 388.

[4] French Republic, Indochina Hydrographic Mission, *Procès-Verbal of Taking Possession of Thi-Tu Island* (12 Apr. 1933). SWSP, Vol. III, Annex 368.

[5] Republic of France, Ministry of Foreign Affairs, "Notice relating to the occupation of certain islands by French naval units", *Official Journal of the French Republic* (26 July 1933), at 7837. MP, Vol. VI, Annex 159.

[6] [Untitled Article], *New York Times* (30 July 1933). SWSP, Vol. IV, Annex 400.

[7] *Id.*

[8] P.J. Philip, "Barren Coral Isles in Pacific Cause International Dispute", *New York Times* (27 Aug. 1933). SWSP, Vol. IV, Annex 401.

[9] United Kingdom, Hydrographic Department, *China Sea Pilot*, Vol. I (1st ed., 1937), p. 118. SWSP, Vol. IV, Annex 397.

[10] *Memorandum* from Commanding Officer, H.M.S. "Herald", to Commander-in-Chief, China Station, British Royal Navy (3 May 1937), pp. 1-2. SWSP, Vol. III, Annex 370.

[11] W.C. Jenk., H.M.S. Herald, United Kingdom, *Report on Suitability of Islands in China Sea for Landing Grounds* (18 Apr. 1938), p. 1. SWSP, Vol. III, Annex 374.

[12] *Id*., p. 2

[13] *Memorandum* from H.M.S. Herald, United Kingdom, to British Admiralty (27 Apr. 1938). SWSP, Vol. III, Annex 379.

[14] *Memorandum* from Japan to the United States (31 Mar. 1939), p. 2. SWSP, Vol. III, Annex 381.

[15] *Id*., p. 1.

[16] Marwyn S. Samuels, *Contest for the South China Sea* (1982), p. 84. SWSP, Vol. V, Annex 246(bis).

[17] Republic of the Philippines, Municipality of Kalayaan, "Historical Background", *available at* http://kalayaanpalawan.gov.ph/about_the_municipality/historical_background.html (accessed 2 Feb. 2015). SWSP, Vol. III, Annex 348.

[18] *See generally* Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 67. SWSP, Vol. V, Annex 459.

[19] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 19. SWSP, Vol. V, Annex 445.

[20] Republic of the Philippines, Municipality of Kalayaan, "Historical Background", *available at* http://kalayaanpalawan.gov.ph/about_the_municipality/historical_background.html (accessed 2 Feb. 2015). SWSP, Vol. III, Annex 348.

THITU (PAGASA) ISLAND
References, cont'd

[21] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 69. SWSP, Vol. V, Annex 459.

[22] J. M. Glionna, "Squatters in paradise say it's job from hell", *Los Angeles Times* (26 July 2009), p. 1. SWSP, Vol. IV, Annex 416.

[23] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 105. SWSP, Vol. V, Annex 459.

[24] E. Campbell, "Reef Madness", *Australian Broadcasting Corporation* (20 May 2014), p. 5. SWSP, Vol. IV, Annex 432.

[25] Republic of the Philippines, Municipality of Kalayaan, "Municipal Background", *available at* http://www.kalayaanpalawan.gov.ph/about_the_municipality/municipal_background.html (accessed 2 Mar. 2015). SWSP, Vol. III, Annex 350.

[26] Republic of the Philippines, Municipality of Kalayaan, "The First 100 Days: Accomplishment Report of Mayor Eugenio B. Bito-Onon, Jr.", p. 37. SWSP, Vol. III, Annex 345.

[27] C. Thayer, "What If China Did Invade Pag-asa Island?", *The Diplomat* (16 Jan. 2014). SWSP, Vol. IV, Annex 431.

[28] Republic of the Philippines, Municipality of Kalayaan, *The Comprehensive Development Plan 2010-2016* (5 Apr. 2013), p. 9. SWSP, Vol. III, Annex 92(bis).

[29] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 105. SWSP, Vol. V, Annex 459.

[30] Republic of the Philippines, Municipality of Kalayaan, *The Comprehensive Development Plan 2010-2016* (5 Apr. 2013), p. 4. SWSP, Vol. III, Annex 92(bis).

[31] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 104. SWSP, Vol. V, Annex 459.

[32] Republic of the Philippines, Municipality of Kalayaan, *The Comprehensive Development Plan 2010-2016* (5 Apr. 2013), p. 11. SWSP, Vol. III, Annex 92(bis).

[33] Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995), p. 16-74. MP, Vol. VII, Annex 230.

[34] E. Campbell, "Reef Madness", *Australian Broadcasting Corporation* (20 May 2014), p. 5. SWSP, Vol. IV, Annex 432.

[35] Republic of the Philippines, Municipality of Kalayaan, "The First 100 Days: Accomplishment Report of Mayor Eugenio B. Bito-Onon, Jr.", p. 52-53. SWSP, Vol. III, Annex 345.

[36] Republic of the Philippines, Municipality of Kalayaan, *Brochure: Municipality of Kalayaan, Palawan, Philippines*, p. 1. SWSP, Vol. III, Annex 346.

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[41] P.J. Philip, "Barren Coral Isles in Pacific Cause International Dispute", *New York Times* (27 Aug. 1933). SWSP, Vol. IV, Annex 401.

[42] Republic of the Philippines, Municipality of Kalayaan, "Municipal Background", *available at* http://www.kalayaanpalawan.gov.ph/about_the_municipality/municipal_background.html (accessed 2 Mar. 2015), pp. 2-3. SWSP, Vol. III, Annex 350.

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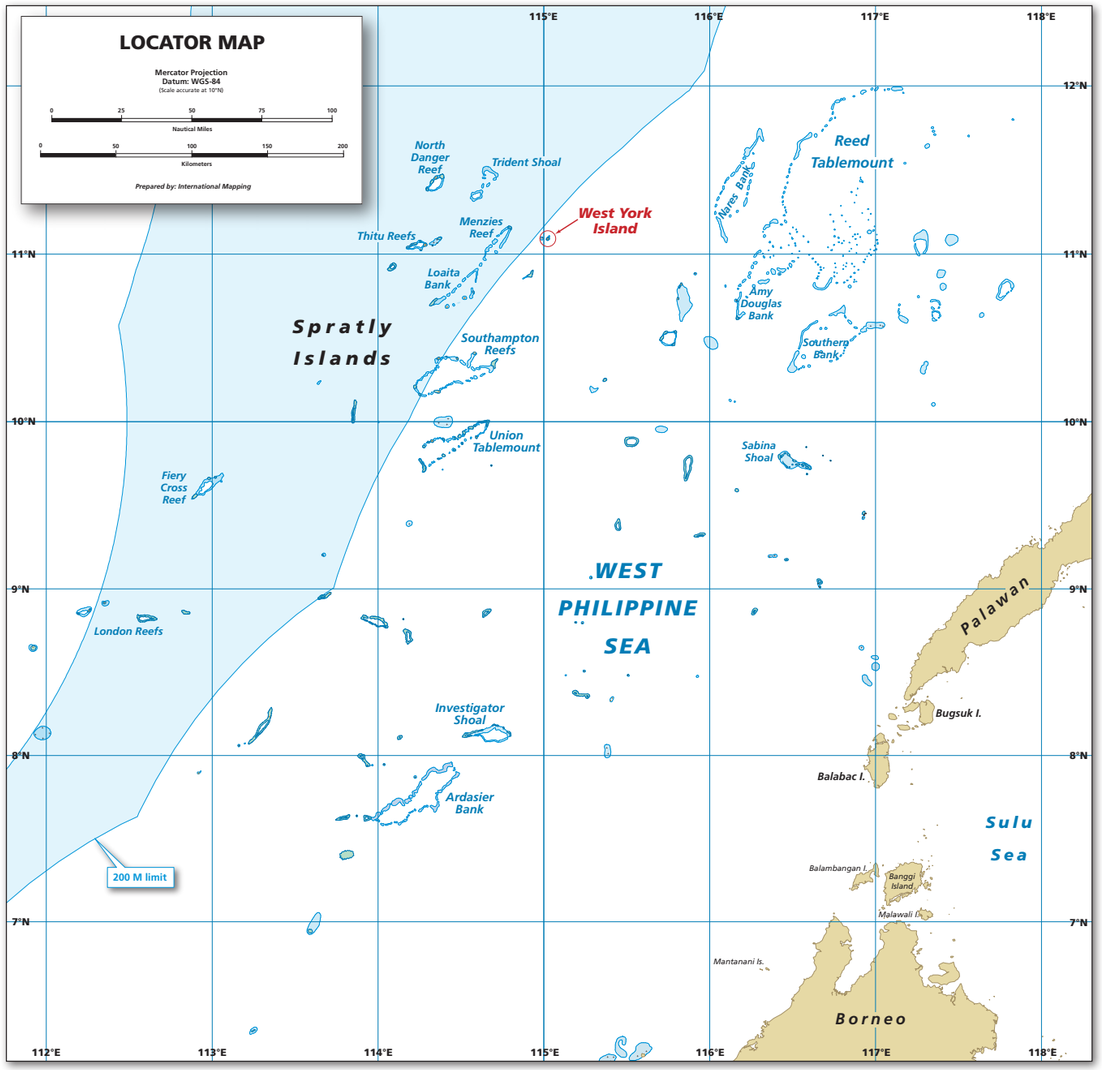
WEST YORK ISLAND

Also known as:

Chinese: Xiyue Dao (西月岛)
Philippine: Likas Island

Coordinate Location: 11°05'30"N - 115°01'30"E
Nearest High Tide Feature: This is a high tide feature
Distance to Palawan: 195.6 M
Distance to Hainan: 522.9 M
Claimed by: China, Philippines, Vietnam
Occupied by: Philippines



Satellite Image

West York Island
(QuickBird, 11 April 2011)

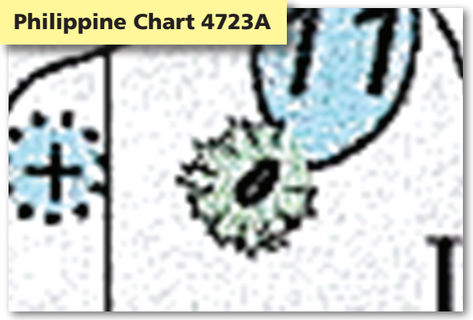
WEST YORK ISLAND

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

Likas Island (11°05' N, 115°0.1' E) situated 13 miles NNE of Irving Reef, is covered with trees and bushes. It has some tall coconut trees at the E end. A reef with a depth of less than 1.8 meters (6 ft) extends 2 miles N from the island.

Philippine Chart 4723A

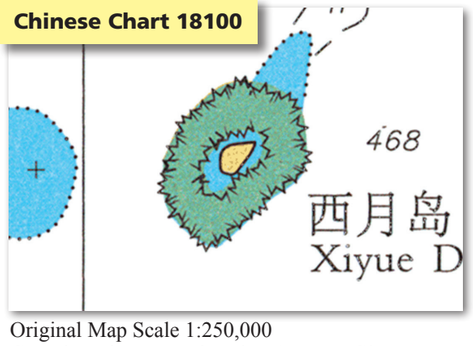


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

Xiyue Island - Located east of Zhongye Reefs, it is a solitary island in the middle of the reef, with a length of 720 meters, a width of 440 meters, and a surface area of approximately 0.21 sq. km. The island is around three meters high and is formed by sandy grounds. There are lush trees on the island, there are over 10 coconut trees with a height of 25 meters that can be seen from a distance of eight nautical miles ~ 10 nautical miles. The island is surrounded by a white sand cay. Outside the sand cay, there is a coral reef basin, on top of which there are boulders and a number of rocks. Exposed during low tide, the water is deeper on the outside of the reef basin. There is a submerged shoal, and the water depth on it is less than two meters. The reef extends two nautical miles toward the northern part of the island. According to fisherman responses, the island shore is located approximately 160 meters ~ 200 meters from the edge of the reef. All sides of the island have anchoring grounds that are available to general vessels to drop anchors. There is a small bay southeast of the island that can provide shelter from the northeast wind.

Chinese Chart 18100



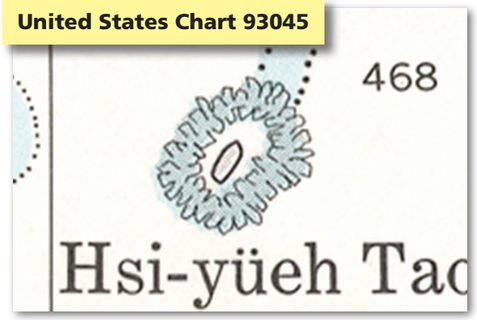
Original Map Scale 1:250,000
Complete chart reproduced as Annex NC25

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

West York Island (11°05'N., 115°00'E.) is covered with trees and bushes and has some tall coconut palms on its S end.

The reef fringing the island extends 1.25 miles farther off the N side than elsewhere.

United States Chart 93045

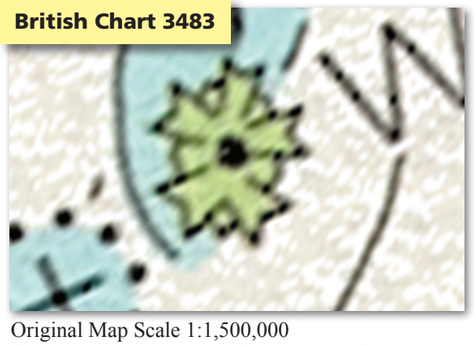


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC54

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

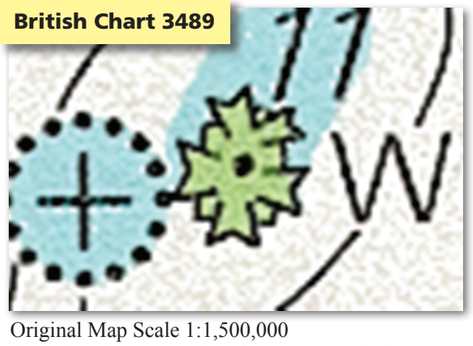
West York Island (11°05'· 75N 115°01'·24E) is covered with trees and bushes. It has some tall coconuts palms on its S end. A reef, with isolated dangerous rocks and depths of less than 2 m, extends 2 miles N and 3 miles W from the island.

British Chart 3483



Original Map Scale 1:1,500,000
Complete chart reproduced as Annex NC1

British Chart 3489



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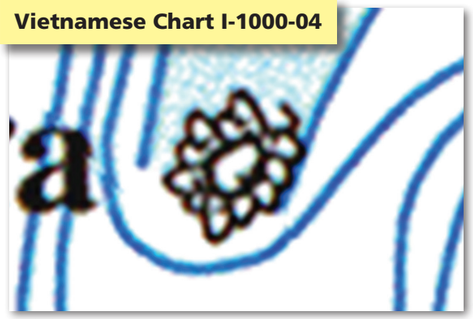
Complete chart reproduced as Annex NC46

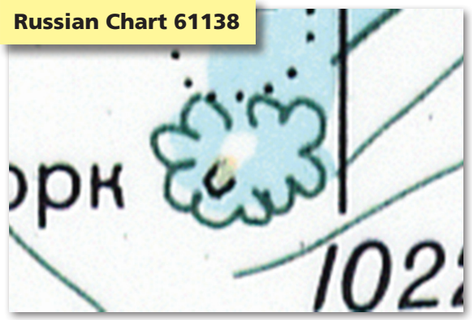
WEST YORK ISLAND
Additional Charts

Vietnamese Chart I-1000-04



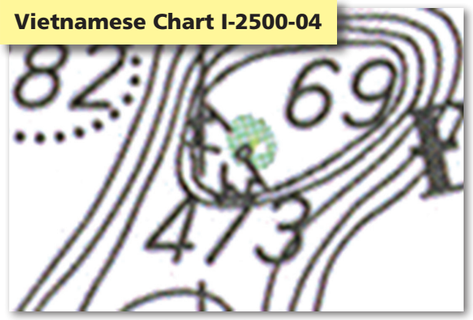
Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



Original Map Scale 1:500,000
Complete chart reproduced as Annex NC40

Vietnamese Chart I-2500-04

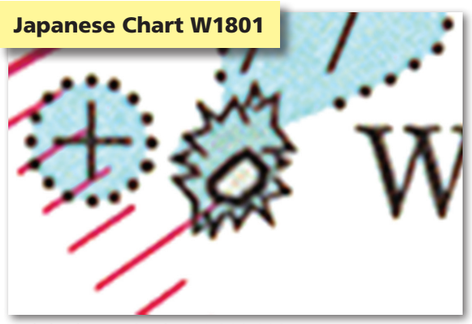


Original Map Scale 1:2,500,000
Complete chart reproduced as Annex NC66

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Geographic/Hydrographic Observations by Dr. Robert Smith

West York Island is a solitary island in the middle of a reef that extends 2 M to the north and 3 M to the west. According to the Chinese sailing directions, it is 720 metres long and 440 metres wide, and it has an area of approximately 0.21 km^2. West York is covered with trees and bushes, with some tall coconut palms at the southern end. All the nautical charts show an island on the reef. Satellite imagery and photographs show a man-made structure at the southern edge of the feature.

Historical and Anthropological Information

West York was named for a vessel that wrecked on it in 1905. Ten years later, the Hydrographic Office of the United States Navy reported that "Chinese fishermen from Hainan appear to frequent [West York] during the latter part of the northeast monsoon to gather [sea cucumbers], [and] as a josshouse". The same publication notes that three graves, an "old iron cannon", and "some remains of wrecks" had been seen.[1] There was no report of indigenous human habitation or settlement. The feature appears to have been visited only by fishermen on temporary sojourn.

A 1938 report from the British vessel *H.M.S. Herald* concluded that West York was not "suitable as landing grounds for airplanes", and that such grounds could not even be constructed "with an enormous expenditure of material and labour". It noted that the feature had "a dried up well" and "[n]o signs of occupation".[2]

West York was annexed by Japan in 1939.[3] In or around December 1947, the Republic of China "reportedly erected markers" on West York.[4] In 1956, the Philippine adventurer Tomas Cloma and members of his expedition reportedly landed on West York,[5] which was ultimately occupied by the Philippines military in April 1971.[6]

West York remains occupied by the Philippine armed forces, which have stationed 7 military personnel there.[7] It is only accessible by sea.[8] The Philippines has built "only a few simple structures" on West York.[9] The feature does not have a harbour or jetty for larger ships, "so supplies have to be loaded onto small boats and ferried to shore".[10]

There is no groundwater supply suitable for drinking on West York.[11]

The Status of the Feature under UNCLOS

West York is a rock as defined in Article 121(3), because it cannot support human habitation or economic life of its own. As detailed in paragraphs 5.100-5.101 and 5.102-5.114 of the Memorial, this tiny feature comprises only 0.21 km^2. It lacks a natural source of potable water.[12] It has never had a permanent human population, and at present is occupied only by 7 Philippine military personnel,[13] who are dependent upon supplies from the outside. West York's soil characteristics make agriculture impossible.[14] No economic activity occurs on the feature.

References

[1] U.S. Hydrographic Office, *Asiatic Pilot: Sunda Straight and the Southern Approaches to China Sea with West and North Coasts of Borneo and Off-Lying Dangers*, Vol. V (1915), p. 378. SWSP, Vol. IV, Annex 395.

[2] W.C. Jenk., H.M.S. Herald, United Kingdom, *Report on Suitability of Islands in China Sea for Landing Grounds* (18 Apr. 1938), p. 2. SWSP, Vol. III, Annex 374.

[3] *Memorandum* from Japan to the United States (31 Mar. 1939), p. 1. SWSP, Vol. III, Annex 381.

[4] D. J. Dzurek, "The Spratly Islands Dispute: Who's on First?", *IBRU Maritime Briefing*, Vol. 2, No. 1 (1996), p. 10. SWSP, Vol. V, Annex 445.

[5] Zhang Liangfu, *Let the History Tell the Future: The Chronicle of a Century of China's Jurisdiction over South China Sea Islands* (2011), p. 124. SWSP, Vol. V, Annex 455.

[6] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

[7] *Id*.

[8] J. Laude, "Strong waves prevent delivery of goods to troops in Spratlys", *The Philippine Star* (25 Dec. 2014). SWSP, Vol. IV, Annex 441.

[9] "South China Sea rivals compared by Global Times", *Want China Times* (19 Dec. 2014), p. 3. SWSP, Vol. IV, Annex 440.

[10] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 104. SWSP, Vol. V, Annex 459.

[11] Republic of the Philippines, Municipality of Kalayaan, *Brochure: Municipality of Kalayaan, Palawan, Philippines*, p. 1. SWSP, Vol. III, Annex 346.

[12] Republic of the Philippines, Municipality of Kalayaan, *Brochure: Municipality of Kalayaan, Palawan, Philippines*, p. 1. SWSP, Vol. III, Annex 346.

[13] *Letter* from Rear Adm. Roberto B. Enriquez, Philippines Navy, to Asst. Secretary Benito B. Valeriano, Department of Foreign Affairs, Republic of the Philippines (27 Feb. 2015), p. 2. SWSP, Vol. III, Annex 349.

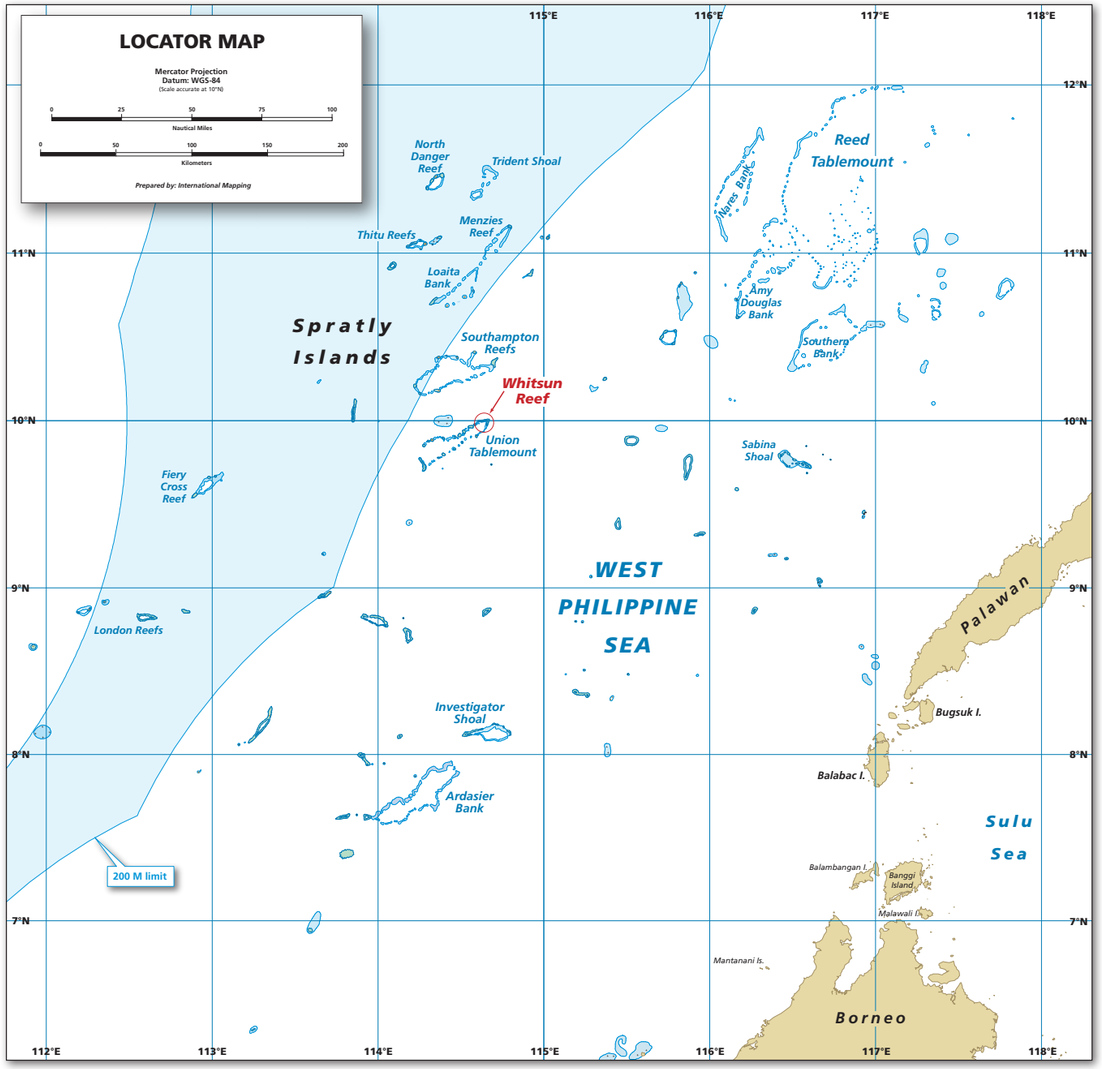
[14] *See* Memorial, para. 5.104.

WHITSUN REEF

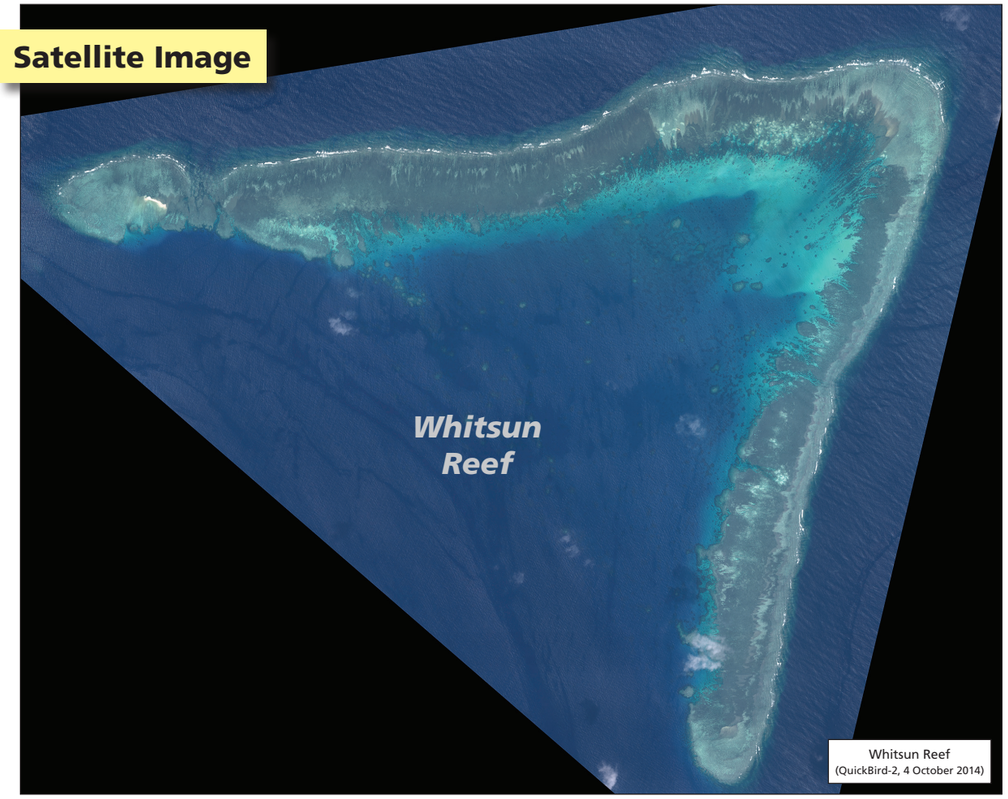
Also known as:

Chinese: Niu'e Jiao (牛轭礁)
Philippine: Juan Felipe Reef

Coordinate Location: 10°00'00"N - 114°35'00"E
Nearest High Tide Feature: Grierson Reef, 6.2 M
Distance to Palawan: 173.5 M
Distance to Hainan: 566.5 M
Claimed by: China, Philippines, Vietnam
Occupied by: Unoccupied



Satellite Image



Whitsun Reef
(QuickBird-2, 4 October 2014)

Aerial view of Whitsun Reef and Union Tablemount

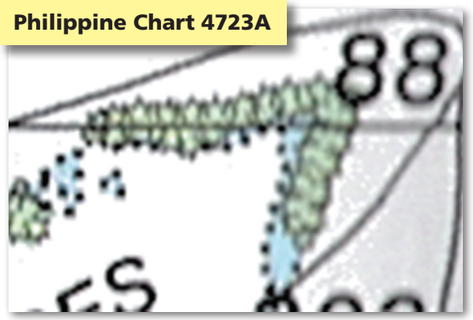
WHITSUN REEF

Sailing Directions and Charts

1) Philippine National Mapping and Resource Information Agency, *Philippine Coast Pilot* (6th ed., 1995) (MP, Annex 231)

[In relation to] RUROK ISLAND (9° 53' N, 114° 20' E), 4 meters (12ft) high, lies on the W side of the banks, 9 miles N of Johnson Reef. Whitson Reef lies at the NE extremity of the banks and reefs; Holiday Reef lies 6 miles WSW of the NE extremity of Whitson Reef. A drying reef, with a drying cay on it lies 3 miles S of Holiday Reef.

Philippine Chart 4723A

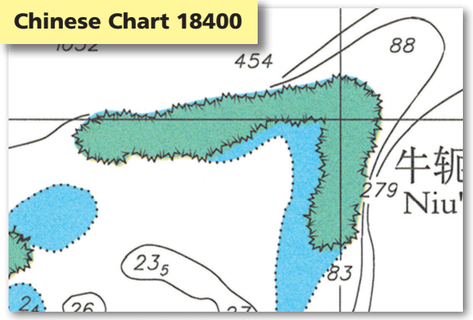


Original Map Scale 1:1,250,000
Complete chart reproduced as Annex NC5

2) Navigation Guarantee Department of the Chinese Navy Headquarters, *China Sailing Directions: South China Sea* (A103) (2011) (SWSP, Annex 232(bis))

[In relation to] Jiuzhang reef group includes in total 20 individual reef flats. Among these, there are 2 islands (Jinghong Island, Ranqing Sandbank), and 18 reefs. In clockwise order starting from the western end of the reefs, they are Chigua Reef, Guihan Reef, Hua Reef, Jiyang Reef, Jinghong Reef, Nanmen Reef, Ximen Reef, Dongmen Reef, Anle Reef, Changxian Reef, Zhuquan Reef, Niu'e Reef, Ranqingdong Reef, Ranqing Sandbank, Longxia Reef, Bianshen Reef, Jiuzhang Unnamed Reef (to be named), Zhangxi Reef, Quyuan Reef, and Qiong Reef.

Chinese Chart 18400

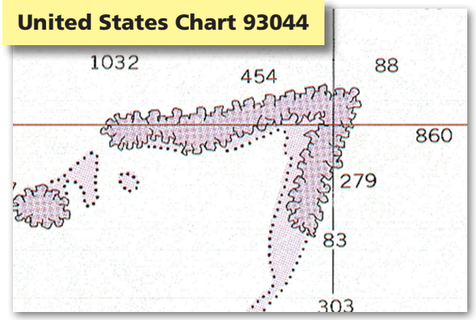


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC17

3) United States National Geospatial-Intelligence Agency, Pub. 161 Sailing Directions (Enroute), *South China Sea and The Gulf of Thailand* (13th ed., 2011) (MP, Annex 233)

Whitsun Reef (9°58'N., 114°39'E.) is triangular in outline and lies at the NE end of Union Atoll. Rocks on the reef uncover at LW and the reef is marked by breakers in winds of moderate force.

United States Chart 93044

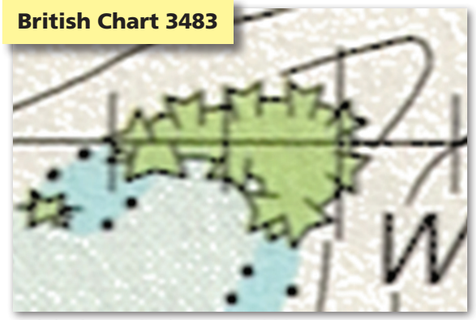


Original Map Scale 1:250,000
Complete chart reproduced as Annex NC6

4) United Kingdom Hydrographic Office, *Admiralty Sailing Directions: China Sea Pilot (NP31)*, Vol. 2 (10th ed., 2012) (MP, Annex 235)

Whitsun Reef (9°59'·67N 114°39'·09E), which lies near the NE extremity of the banks and reefs.

British Chart 3483



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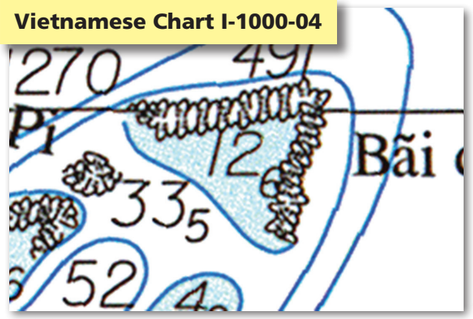
Complete chart reproduced as Annex NC1

WHITSUN REEF

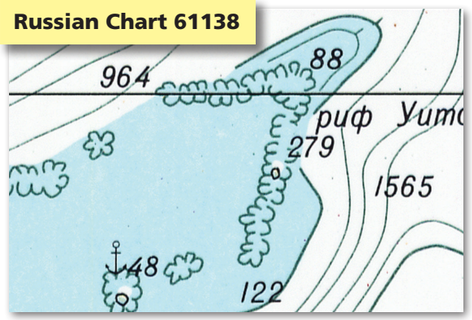
Additional Charts

Vietnamese Chart I-1000-04



Original Map Scale 1:1,000,000
Complete chart reproduced as Annex NC64

Russian Chart 61138



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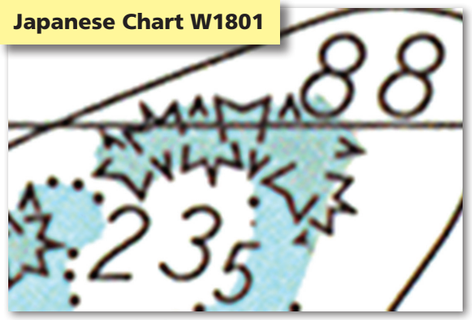
Japanese Chart W1801



Original Map Scale 1:1,200,000
Complete chart reproduced as Annex NC11

Malaysian Chart

Malaysian chart coverage stops at 8°50' N

Geographic/Hydrographic Observations by Dr. Robert Smith

Whitsun Reef is a "V" shaped feature that lies at the northeast end of Union Atoll. Rocks on the reef uncover at low water. Except for the Russian nautical chart, which shows what may be an island on the reef, all the nautical charts depict the feature as a drying reef. Satellite imagery and aerial photographs indicate that no part of the reef is above water at high water.

Historical and Anthropological Information

Union Bank and Reefs, of which Whitsun (or Whitson) Reef forms a part:

> were surveyed by HM surveying ship *Herald* in April and May 1931 and all names of features are derived from names of surveying officers aboard *Herald*… or the church calendar. The *Herald* survey of Union Bank and Reefs has never been published by the Hydrographer of the Navy.[1]

The *Herald*'s survey was conducted "to investigate probable areas for seaplane operations in time of war".[2] Japanese hydrographers subsequently made "sketch" surveys of several features, including Union Bank, during 1936 and 1937.[3]

The Status of the Feature under UNCLOS

Whitsun Reef is a low-tide elevation under Article 13. Rocks on the reef uncover at low water. All nautical charts depict this feature as a drying reef. The only exception is the Russian chart. The sailing directions also indicate that this is a drying reef. The satellite imagery and aerial photographs confirm that no part of the reef is above water at high tide. It is 173.5 M from Palawan and 6.2 M from the nearest high-tide elevation, Grierson Reef.

References

[1] D. Hancox and V. Prescott, "A Geographical Description of the Spratly Islands and an Account of Hydrographic Surveys Amongst Those Islands", *IBRU Maritime Briefing*, Vol. 1, No. 6 (1995), p. 10 n.1. MP, Vol. VIII, Annex 256.

[2] *Id*., p. 37.

[3] *Id*., pp. 37-38.

[4] Bill Hayton, *The South China Sea: The Struggle for Power in Asia* (2014), p. 106. SWSP, Vol. V, Annex 459.