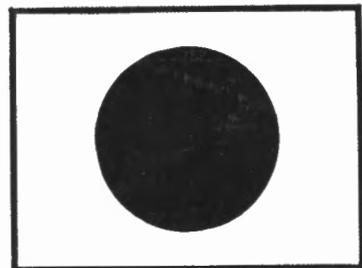


DECLASSIFIED



DECLASSIFIED IAW DOD MEMO OF 3 MAY 1977, SUBJ:
DECLASSIFICATION OF WWII RECORDS

STANDARD CLASSES of JAPANESE MERCHANT SHIPS

Contains drawings, characteristics, and names of merchant vessels being constructed in quantity by the Japanese.

ONI 208-J (Revised)
Supplement 3

Division of Naval Intelligence

January 1945

May be incorporated in the basic manual
provided classification is maintained

DECLASSIFIED

JAPANESE STANDARD MERCHANT SHIP CONSTRUCTION

In the latter part of 1943 and during 1944, a quantity of new and unknown Japanese merchant ships have been observed, many of them radically different in design from the fast, modern vessels of the pre-war era. Sufficient numbers of the same type of ship have been noted to permit the formation of definite conclusions as to the amount and character of standardization accomplished in Japanese wartime merchant ship construction. In addition, recent captured documents have listed the types adopted as standard and outlined sufficient characteristics to make possible the identification of individual classes.

Pre-war Construction

The unusual features of these new vessels can best be illustrated by comparison with the character of pre-war shipbuilding in Japan. Prior to 1941, no actual and effective standardization had been accomplished; for, while shipbuilding was subsidized by the government, design was largely determined by the shipping concerns or builders. The nature of Japan's merchant marine activities before the war dictated specifications in ship design which resulted in a standardization of general types as opposed to the adoption of an individual design. This has made possible the formulation of the JMST system of reporting Japanese vessels, a method which recognizes the similarity in characteristics of vessels within a given tonnage range. Freighter design on the whole was concentrated in Diesel-powered ships averaging 6,000 gross tons, with streamlined superstructure amidships, cruiser sterns, and with hulls built for speed. Few engines-aft cargo carriers were constructed outside of the AMAKASU MARU NO. 1 class of 1,900 gross tons, of which about 40 were built before the war. Tanker design tended to 10,000-ton ships with speeds of 17 knots normal cruising and 20 knots maximum—mostly fitted with Diesel engines. It is interesting to note that in the 6 years prior to the outbreak of war approximately 330 ships of over 1,000 tons were built, involving over 100 different classes; 18 of these classes were composed of 5 or more ships, but in only 2 were more than 10 built. At variance with this

pre-war record is the tendency in new construction to adopt a few individual designs and to produce as great a quantity of these as construction facilities and possible use of mass production methods will allow.

Wartime Design

With her sea lanes enormously extended soon after the outbreak of war, and with the successful activity of United States submarine patrols becoming obvious, Japan must have foreseen the inroads which would be made upon her supply of merchant vessels. Since approximately 2 years are required to design and initiate construction on standard types of ships, work was apparently begun on the radically new designs early in 1942; for it is believed that they did not begin coming off the ways until the early spring of 1944. Between the fall of 1941 and the start of construction on the new types shipbuilding is thought to have continued along the lines of the older designs; for, of the nine standard classes so far identified, two are almost identical with pre-war design, and two, although never before observed, show no radical change in design characteristics. It should also be remembered that between 7 December 1941, and 1 July 1944, approximately 125 ships of non-standard construction totaling 430,000 gross tons have been built. Construction of vessels of individual design will undoubtedly continue, to a limited extent, in the future.

In the preparation of designs for new ships, especially standard designs from which vessels are to be built in quantity, consideration must be given the requirements of the ship itself, such as speed, cargo capacity, range, etc., and the wartime facilities for construction including speed of construction, availability of various types of engines, facilities for casting or forging parts, and the like. In the new Japanese designs, cargo capacity and speed of construction have been given paramount consideration at a considerable sacrifice in the speed of the ships themselves.

A glance at the drawings included in the discussion of individual types which follows will show the emphasis which has been placed on *engines-aft design*.

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All but two of the standard classes so far identified are of engines-aft construction. While this is a logical type for economical operation, it may also indicate a shortage of facilities for forging the longer propeller shafts needed in vessels with engines amidship.

Typical of the new hull design is its *angularity* and its *broad beam in relation to length*. The latter is particularly apparent when compared with vessels of the pre-war period, and again is an indication of the need for large carrying capacity at a sacrifice in speed. The hull shape suggests the adoption of flat as opposed to curved surfaces throughout the vessel, which increase the rapidity and ease of construction, even by inexperienced builders. This design can easily be noted in the photograph which accompanies the description of Type E being mass-produced at Wakamatsu. In the discussion of individual types which follows, the word "economy" has been adopted as descriptive of this shape of hull.

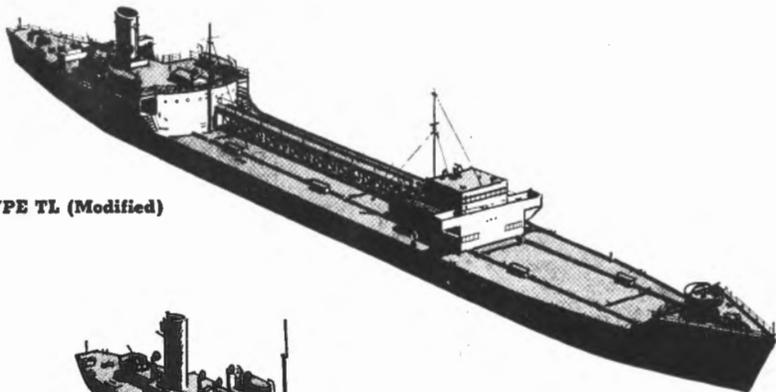
It is interesting to note that in all cases where captured statistical data can be ascribed with relative certainty to observed design, the term "Modified" has applied to vessels with "economy" hull shapes. Cruising speeds specified for the various types are a further indication, since those for the regular types are consistently 2 to 3 knots higher than those for the Modified classes. From this it may be assumed that the designs for Types A, B, C, D, E, TL, TM, and TS are of normal construction. Designs with economy hulls have been identified for Type A (Modified), D (Modified), E (Modified), and TM (Modified). Additional "economy" designs have been observed which closely approximate most specifications for Types B and TS. These are, in all probability, later modifications which were either in the experimental stage or not as yet adopted at the time the captured statistics were issued by the Japanese.

The general use of *steam turbine and reciprocating engines* instead of Diesel, which were in common use before the war, is another noteworthy feature of the standard types. In all probability this indicates a shortage of facilities for building the more complicated Diesel engine, and also denotes foresight on the part of the Japanese in that they may in the future be forced to depend on coal rather than oil for fuel. Among the standard types, Diesels are being used only in vessels under 1,000 gross tons (Types E and F).

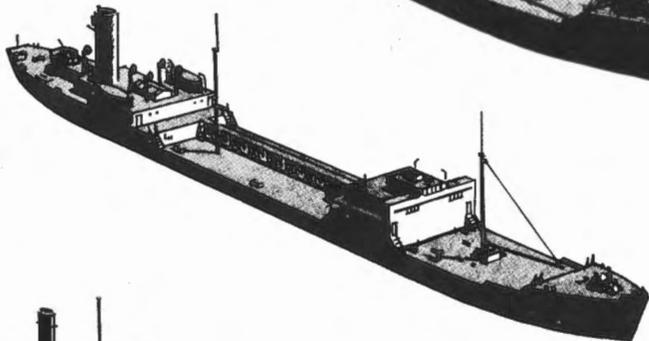
Individual Types

The standard types outlined on the following pages include profile drawings and photographs where they can be assigned, notes on distinctive features which will lead to rapid identification, all known statistical information, and, where possible, names of vessels belonging to the class. Some of the types have not, as yet, been identified; it is possible that certain of the classes, such as Type A (Cargo) and TL (Tanker) were never placed in quantity production. Several of the profiles have been drawn from vertical photographs only and should be considered tentative. Note also that ship names listed for standard types include vessels built up to 1 July 1944, and have been selected from known construction on the basis of types, tonnage, and year built. Their assignment, therefore, should not be considered positive. In addition to the statistical data included under each type, all classes above 1,000 gross tons are believed to carry four depth charges. Profile drawings have been graded A, B, C, and D to indicate their evaluated accuracy.

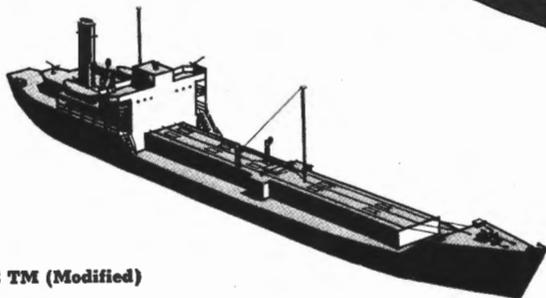
This summary has been prepared by the Division of Naval Intelligence. Extensive use has been made of "Weekly Intelligence" Bulletin No. 12 published by CINCPAC-CINCPAA, and of Shipping Report No. 11 prepared by the Shipping Center, U. S. Naval Unit, 14th Air Force.



TYPE TL (Modified)



TYPE TM



TYPE TM (Modified)

STANDARD CLASSES OF JAPANESE MERCHANT SHIPS

TYPE A (Modified) Sugar Baker Love

Gross tonnage: 6,670
Length, o. a.: 445'
Beam: 64'

TYPE C Fox Tare Charlie

Gross tonnage: 2,700
Length, o. a.: 321'
Beam: 45'

TYPE D Sugar Baker Sugar

Gross tonnage: 1,900
Length, o. a.: 295'
Beam: 44'

TYPE D (Modified) Sugar Charlie Love

Gross tonnage: 2,300
Length, o. a.: 310'
Beam: 49'

TYPE E Sugar Charlie Sugar

Gross tonnage: 830
Length, o. a.: 210'
Beam: 36'

TYPE K, Ore Carrier Fox Tare Charlie

Gross tonnage: 5,300
Length, o. a.: 410'
Beam: 59'

TYPE TL (Modified) Sugar Able Love

Gross tonnage: 10,000
Length, o. a.: 517'
Beam: 67'

TYPE TM Sugar Able Item

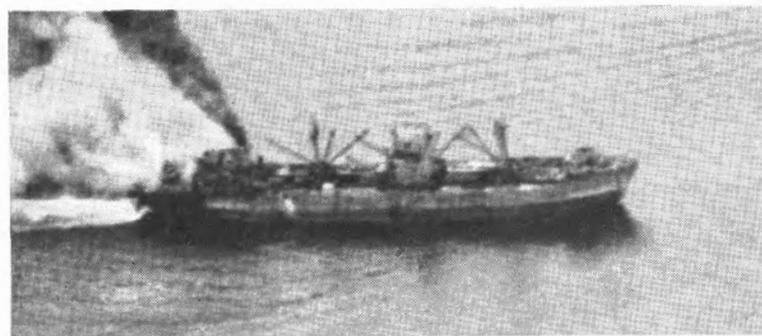
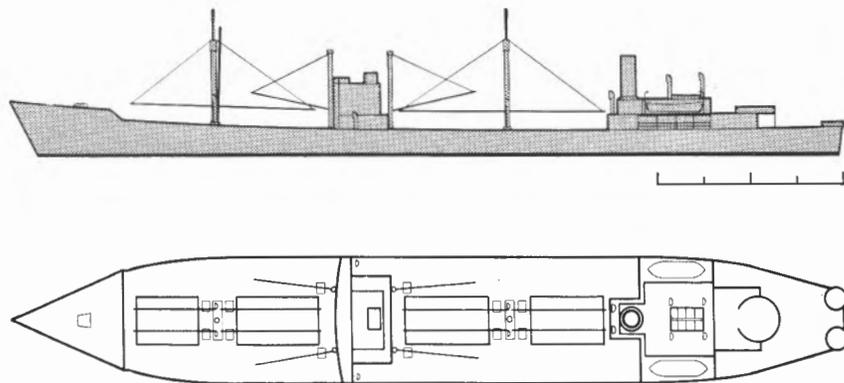
Gross tonnage: 5,200
Length, o. a.: 410'
Beam: 59'

TYPE TM (Modified) Sugar Able Sugar

Gross tonnage: 2,800
Length, o. a.: 325'
Beam: 50'

TYPE A (Modified)**45-MKKMF****Sugar Baker Love**

B



▲ Type A (Modified)

Large engines-aft cargo vessel with pronounced "economy" hull. Note kingposts against bridge which is located almost amidships, small stack, and heavy stick masts centered in fore and after wells. One observed variation has wide cargo hatches extending three-fourths the beam of the ship. Ships of this class are under construction at Tokyo and have been observed being built near Nagasaki. No prefabrication of hull sections is apparent. Jap Merchant Ship Card No. S 1007.

Approximately 24 Type A and A (Modified) had been built by July 1944. The following are believed to belong to one of these classes:

Batopaha Maru	5953	Oigawa Maru	6493
Getsuyo Maru	6440	Taiten Maru	6442
Koyo Maru	6435	Tatebu Maru	6816
Kyokuzan Maru	6300	Tatsunan Maru	6417
Mitsuki Maru	6440	Tatsu-ura Maru	6420
Nichiyo Maru	6300	Uyo Maru	6376
Nichizui Maru	6584	Yosan Maru	6487
Nikkyu Maru	6529	Yosho Maru	6300
Nissho Maru	6008	Yowa Maru	6435
Nisshun Maru	6380	Yuzan Maru	6380

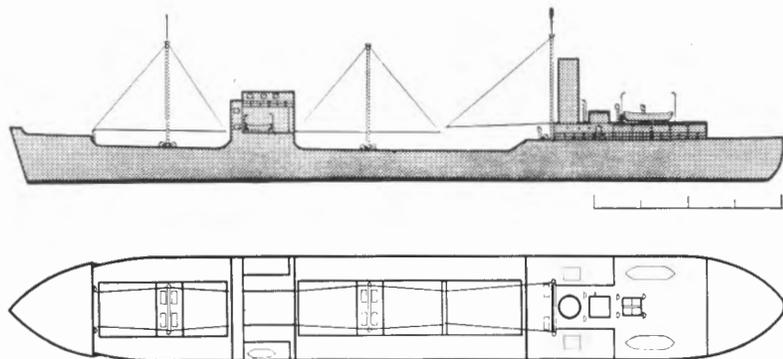
TYPE A

Gross tonnage: 6,670 Speed, normal cr.: 10 kts.
 Disp. tonnage loaded: 9,720 Machinery: Steam turbine
 Length, o. a.: 445' SHP: 2,500 (oil)
 Beam: 64' 2,000 (coal)
 Draft, loaded: 25.5' Cargo booms: Twelve 5-ton
 One 30-ton

Gross tonnage: 6,400 Speed, normal cr.: 12 kts.
 Disp. tonnage loaded: 9,300 Machinery: Reciprocating
 Length, o. a.: 445' (?) IHP: 3,300
 Beam: 58' Cargo booms: Eight 10-ton
 Draft, loaded: 25.5' Eight 15-ton
 Two 25-ton

NOTE.—Early reports indicated use of steam turbine and Diesel engines in this class.

B



Approximately 30 ships of the class are believed to have been built, including the following, some of which are possibly of engines amidship construction.

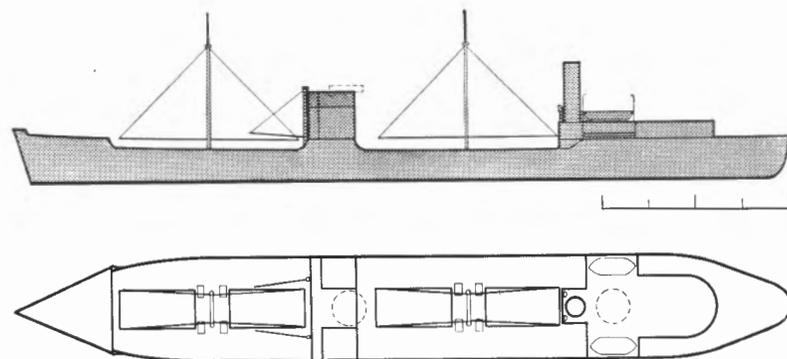
Anbo Maru	4,523	Sankisan Maru	4,776
Bichu Maru	4,667	Shiranesan Maru	4,739
Bizen Maru	4,667	Shiroganesan Maru	4,739
Chiyo Maru	4,700	Shoun Maru	4,399
Fujishima Maru	4,930	Shoyu Maru	4,408
Kokuyo Maru	4,667	Tatebe Maru	4,519
Konan Maru #1	4,558	Toyu Maru	4,532
Naruo Maru	4,823	Yamamiya Maru	4,440
Sainei Maru	4,916	Yukigawa Maru	4,502

45-MKMF

TYPE B

Sugar Baker Love

D

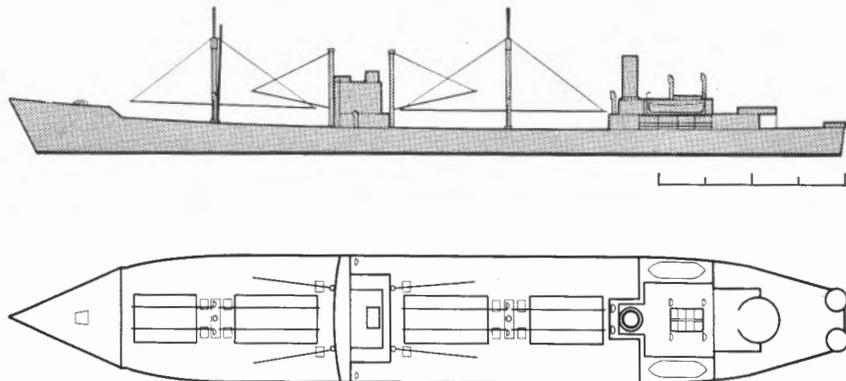


Two new ships, one with a pronounced angular hull shape, fall within the probable length range for this class. No other sightings have been observed.

Gross tonnage:	4,400	Speed, normal cr.:	12 kts.
Disp. tonnage loaded:	7,100	Machinery:	Steam turbine
Length, o. a.:	410' (approx.)	SHP:	2,400
Beam:	--	Cargo booms:	Six 5-ton
Draft, loaded:	24.3'		Four 10-ton
			One 30-ton

TYPE A (Modified)**45-MKKMF****Sugar Baker Love**

B



▲ Type A (Modified)

Large engines-aft cargo vessel with pronounced "economy" hull. Note kingposts against bridge which is located almost amidships, small stack, and heavy stick masts centered in fore and after wells. One observed variation has wide cargo hatches extending three-fourths the beam of the ship. Ships of this class are under construction at Tokyo and have been observed being built near Nagasaki. No prefabrication of hull sections is apparent. Jap Merchant Ship Card No. S 1007.

TYPE A (Modified)

Gross tonnage:	6,670	Speed, normal cr.:	10 kts.
Disp. tonnage loaded:	9,720	Machinery:	Steam turbine
Length, o. a.:	445'	SHP:	2,500 (oil)
Beam:	64'		2,000 (coal)
Draft, loaded:	25.5'	Cargo booms:	Twelve 5-ton One 30-ton

Approximately 24 Type A and A (Modified) had been built by July 1944. The following are believed to belong to one of these classes:

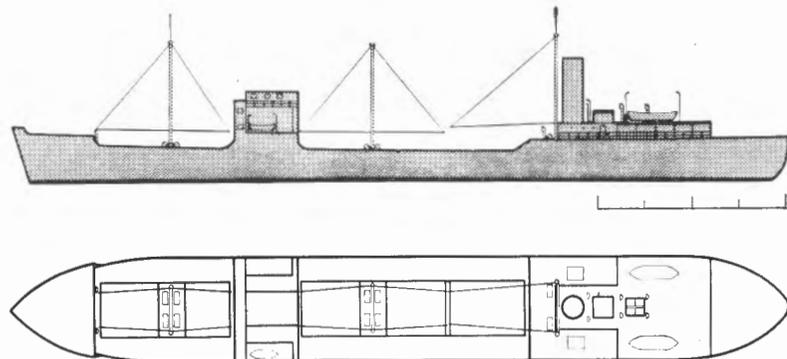
Batopaha Maru	5953	Oigawa Maru	6493
Getsuyo Maru	6440	Taiten Maru	6442
Koyo Maru	6435	Tatebu Maru	6816
Kyokuzan Maru	6300	Tatsunan Maru	6417
Mitsuki Maru	6440	Tatsu-ura Maru	6420
Nichiyo Maru	6300	Uyo Maru	6376
Nichizui Maru	6584	Yosan Maru	6487
Nikkyu Maru	6529	Yosho Maru	6300
Nissho Maru	6008	Yowa Maru	6435
Nisshun Maru	6380	Yuzan Maru	6380

TYPE A

Gross tonnage:	6,400	Speed, normal cr.:	12 kts.
Disp. tonnage loaded:	9,300	Machinery:	Reciprocating
Length, o. a.:	445' (?)	IHP:	3,300
Beam:	58'	Cargo booms:	Eight 10-ton Eight 15-ton Two 25-ton
Draft, loaded:	25.5'		

NOTE.—Early reports indicated use of steam turbine and Diesel engines in this class.

B



Approximately 30 ships of the class are believed to have been built, including the following, some of which are possibly of engines amidship construction.

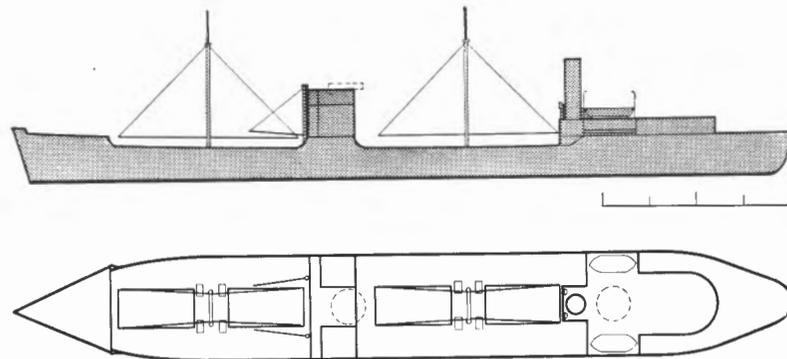
Anbo Maru	4,523	Sankisan Maru	4,776
Bichu Maru	4,667	Shiranesan Maru	4,739
Bizen Maru	4,667	Shiroganesan Maru	4,739
Chiyo Maru	4,700	Shoun Maru	4,399
Fujishima Maru	4,930	Shoyu Maru	4,408
Kokuyo Maru	4,667	Tatebe Maru	4,519
Konan Maru #1	4,558	Toyu Maru	4,532
Naruo Maru	4,823	Yamamiya Maru	4,440
Sainei Maru	4,916	Yukigawa Maru	4,502

45-MKMF

TYPE B

Sugar Baker Love

D

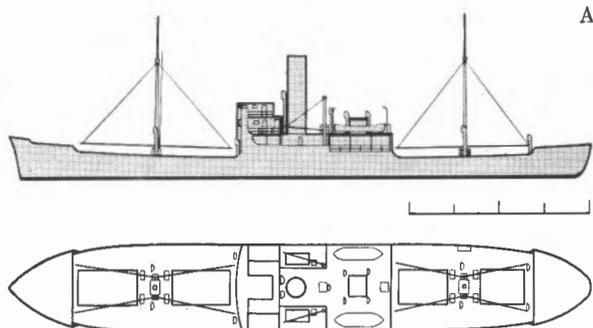


Two new ships, one with a pronounced angular hull shape, fall within the probable length range for this class. No other sightings have been observed.

Gross tonnage:	4,400	Speed, normal cr.:	12 kts.
Disp. tonnage loaded:	7,100	Machinery:	Steam turbine
Length, o. a.:	410'	SHP:	2,400
	(approx.)		
Beam:	--	Cargo booms:	Six 5-ton
Draft, loaded:	24.3'		Four 10-ton
			One 30-ton

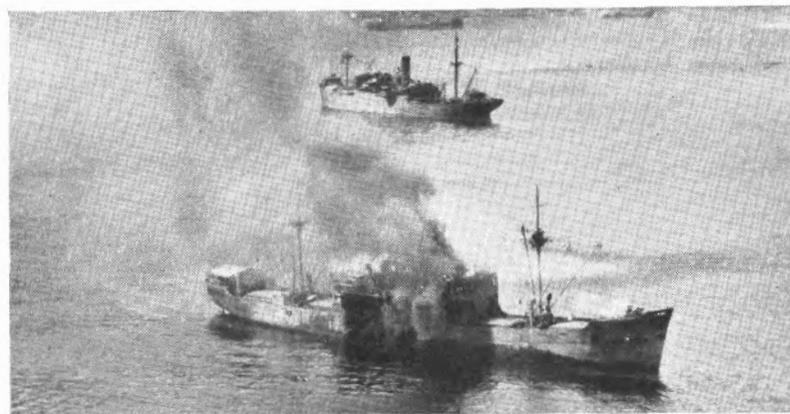
TYPE C
Fox Tare Charlie

23-MFM



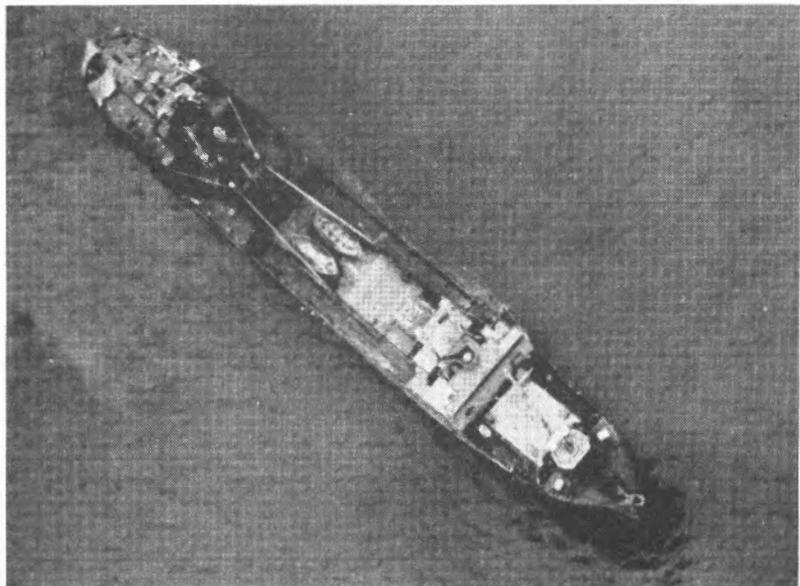
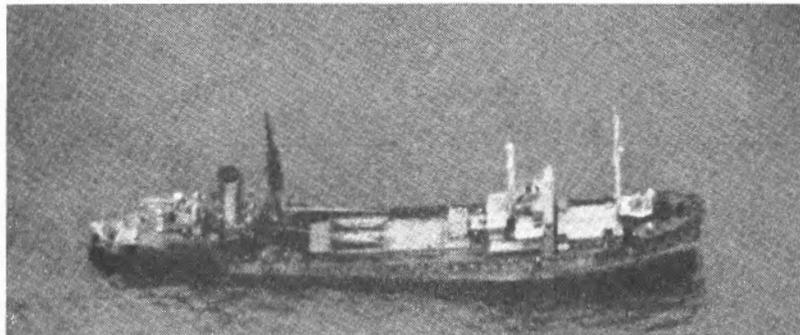
This engines-amidship freighter is closely similar to the AKAGANE MARU and the ANSHU MARU classes shown on pp. 104-5 of ONI 208-J (Revised). Note superstructure slightly aft of amidships, mast centered in fore and after wells, and stack close to bridge. Variations may appear with goal-post masts. Identification of this class has been based on the large number produced before the war, tonnage, length, and the fact that the number of cargo booms correspond with captured statistics. Assignment of this design should not be considered positive.

Gross tonnage:	2,700	Machinery:	Reciprocating
Disp. tonnage loaded:	4,300	Screws:	1
Length, o. a.:	321' (?)	IHP:	1,800
Beam:	45'	Fuel:	Coal
Draft, loaded:	20.7'	Cargo booms:	Two 2-ton
light:	7'-8'		Four 5-ton
Speed, normal cr.:	11 kts.		Four 10-ton
maximum:	13 kts.		One 20-ton



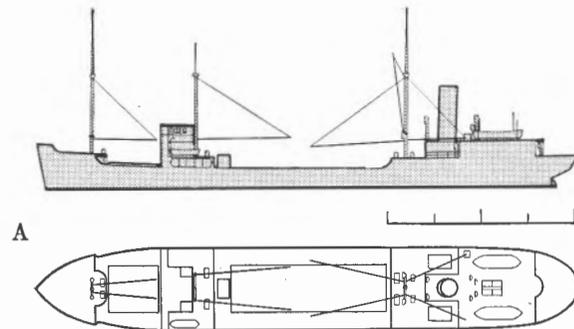
Approximately 30 are believed to have been built between 1941 and 1 July 1944.

Aiyo Maru	2,746	Nikkoku Maru	2,728
Atsuta Maru	2,750	Nitsei Maru	2,728
Dai-Akita Maru	2,704	Ryuko Maru	2,764
Daiho Maru	2,720	Shinkoku Maru	2,746
Hagikawa Maru	2,800	Shoei Maru	2,764
Hisajima Maru	2,742	Taishi Maru	2,800
Inari Maru	2,759	Tamon Maru #8	2,750
Kaito Maru	2,745	Tattai Maru	2,800
Masajima Maru	2,742	Unkai Maru #12	2,745
Meiwa Maru	2,721	Wayo Maru	2,726
Mutsuyo Maru	2,726	Yutaka Maru	2,704
Nichinan Maru	2,732	Zuikai Maru	2,700



46-MKMF

TYPE D
Sugar Baker Sugar



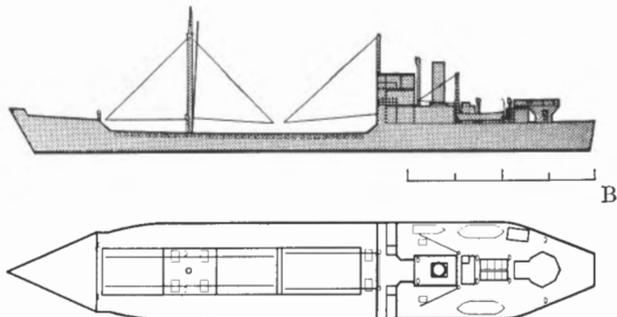
This type is the AMAKASU MARU NO. 1 class, shown on page 270 of ONI 208-J (Revised), some 40 of which were built before the war. The engines-aft design with bridge well forward, masts at forecandle and poop, and kingposts on the bridge, are characteristic features.

Gross tonnage:	1,900	Constructed:	1936-1944
Disp. tonnage loaded:	2,850	Machinery:	Reciprocating
Length, o. a.:	295'	Screws:	1
b. p.:	271'-273'	IHP:	1,100
Beam:	40'-44'	Fuel:	Coal
Draft, loaded:	17.5'	Cargo booms:	Two 3-ton
light:	7'		Four 8-ton
Speed, normal cr.:	10.5 kts.		Two 10-ton
maximum:	13 kts.		One 30-ton

It has been impossible to separate the ships of this type from those in the D (Modified) category; for this reason a combined list of ships in both types is included on the following page.

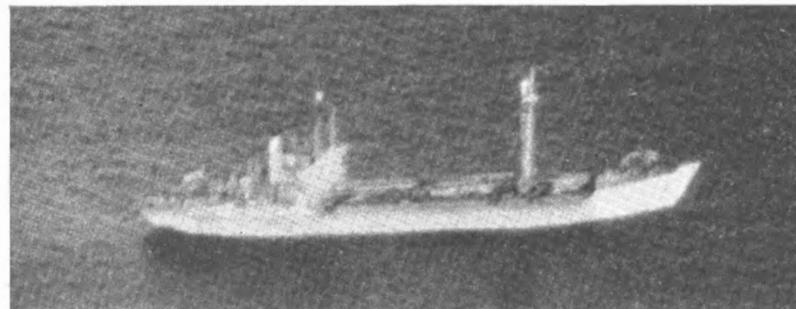
TYPE D (Modified)
Sugar Charlie Love

47-MKF



Slightly longer than the Type D, this ship retains the engines-aft design, but adopts the "economy" hull typical of new Japanese construction. Note the long superstructure with bridge, aft with closely-spaced stack, kingpost at forward edge of bridge, and stick mast far forward in the well but not on forecastle. This type has been observed under construction at Fusan, Korea. Jap Merchant Ship Card No. S 1008.

Gross tonnage:	2,300	Speed, normal cr.:	9 kts.
Disp. tonnage loaded:	3,870	Machinery:	Reciprocating
Length, o. a.:	310'-315'	IHP:	900
Beam:	49'	Cargo booms:	Eight 5-ton
Draft, loaded:	19.2'		One 30-ton



Approximately 80 of Types D and D (Modified) have been built since the start of the war.

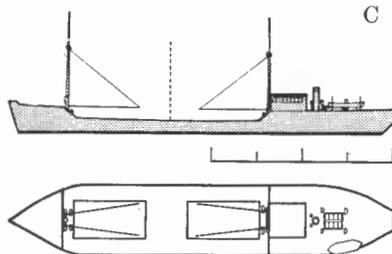
Akeshima Maru	1,993	Nissho Maru #18	1,990
Asayama Maru	1,917	Otori Maru	2,105
Bunzan Maru	1,990	Reirin Maru	1,936
Busan Maru	1,990	Seika Maru	2,087
Chinsai Maru	1,999	Shinwa Maru	1,915
Chuyo Maru	1,900	Shinyo Maru #8	1,959
Daigen Maru #10	2,110	Shobu Maru	2,005
Dowa Maru	1,916	Shojin Maru	1,942
Fuyo Maru	1,900	Shoryu Maru	1,916
Gyokusan Maru	1,970	Sugi Maru #5	1,983
Hachijin Maru	1,918	Taichu Maru	1,906
Hachirogata Maru	1,999	Tainan Maru	1,989
Heiwa Maru	1,958	Tairin Maru	1,920
Hinode Maru	1,916	Taisei Maru	1,948
Hoshi Maru #11	1,944	Taisei Maru	1,957
Imaji Maru	1,986	Tatsuju Maru	1,944
Kaika Maru	2,087	Tatsutagawa Maru	1,923
Kennichi Maru	1,938	Temposan Maru	1,970
Kiyokawa Maru	1,990	Tetsuyo Maru	2,130
Kizugawa Maru	1,915	Toan Maru	1,990
Kosei Maru	1,920	Toshin Maru	1,953
Kyowa Maru	1,915	Toun Maru	1,915
Matsutan Maru	1,999	Toyama Maru	1,972
Miyashima Maru	2,000	Toyo Maru	1,916
Narita Maru	1,915	Ujina Maru	2,218

DECLASSIFICATION OF WWII RECORDS

ONI 208-J Supplement 3

Division of Naval Intelligence

47-MMF

TYPE E, E (Modified)
Sugar Charlie Sugar**TYPE E-1 (Modified)**

Gross tonnage: 860
 Disp. tonnage loaded: 1,636
 Length, o. a.: 210'
 Beam: 36'
 Draft, loaded: 14.7'
 Speed, normal cr.: 7 kts.
 Machinery: Diesel
 Screws: 1
 SHP: 370-430
 Cargo booms: Four 3 ton

TYPE E

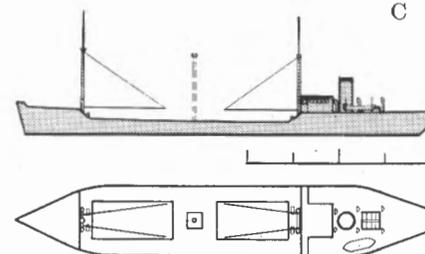
Gross tonnage: 830
 Disp. tonnage loaded: 1,270
 Length, o. a.: -----
 Beam: -----
 Draft, loaded: 14.7'
 Speed, normal cr.: 10 kts.
 Machinery: Diesel
 Screws: 1
 SHP: 750
 Cargo booms: Three 3-ton
 Two 5-ton

Numerous variations appear in this small ore carrier and general cargo ship, which is being mass-produced at Wakamatsu and near Nagasaki. Differences occur in superstructure, bridge, hull shape, and masts and kingposts. The 210' vessel, with small funnel indicating the use of diesel motors and without the center-kingpost, is believed to be the E-1 (Modified) version. It is probable that the basic Type E is not of "economy" design and may be of engine amidship construction. While the range of these ships is believed to be small, large numbers have been observed as far south as Takao and Manila. Approximately 200 ships of the Type E class have been built.

TYPE F

Appearance of this class is closely similar to that of the Type E, but sightings have been so indistinct as to prohibit detailed drawings. Eighteen or 20 are reported to have been built at Hong Kong.

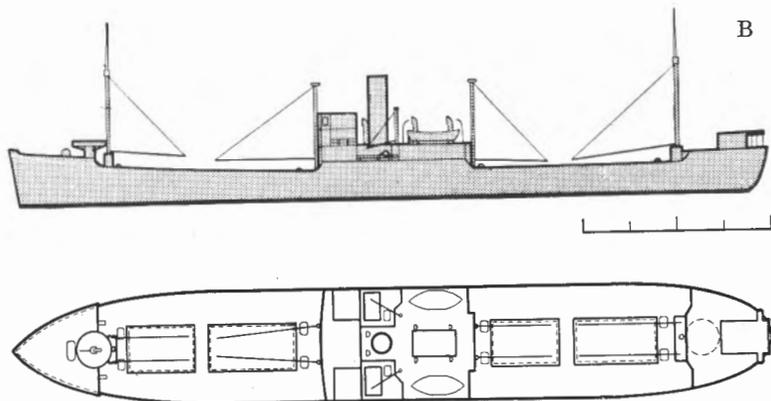
Gross tonnage: 495 Speed, normal cr.: 10 kts.
 Disp. tonnage loaded: 730 Machinery: Diesel
 Length, o. a.: -- SHP: 600
 Beam: -- Cargo booms: Four 5-ton
 Draft, loaded: 12.5'

**TYPE E-2 (Modified)**

Gross tonnage: 880
 Disp. tonnage loaded: 1,586
 Length, o. a.: 226'
 (approx.)
 Beam: 36'
 (approx.)
 Draft, loaded: 14.7'
 Speed, normal cr.: 7 kts.
 Machinery: Reciprocating
 Screws: 1
 IHP: 400



Stern construction, Type E (Modified)▶

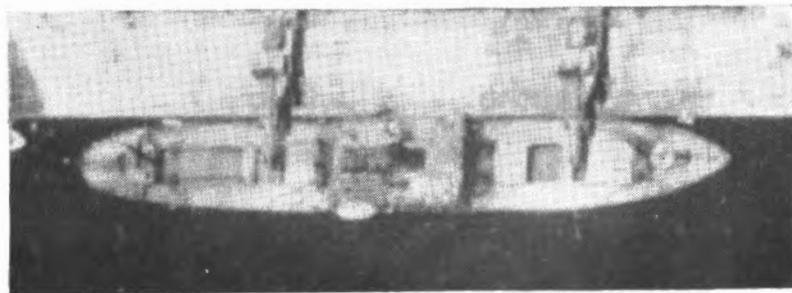
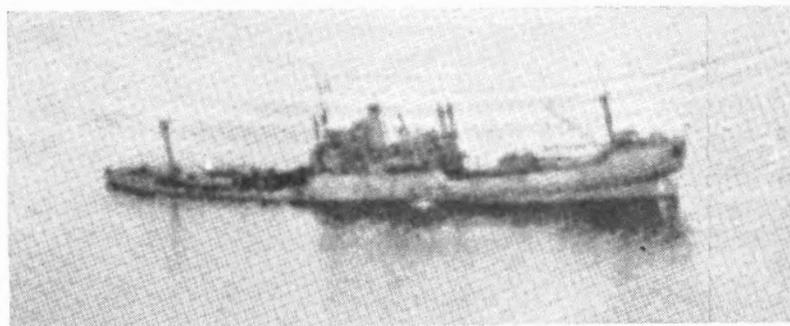
TYPE K Ore Carrier**23-MKFKM****Fox Tare Charlie**

Gross tonnage:	5,300	Speed, normal cr.:	10.5 kts.
Disp. tonnage loaded:	7,900	Machinery:	Reciprocating
Length, o. a.:	410'	IHP:	2,100
Beam:	59'	Cargo booms:	Two 2-ton
Draft, loaded:	24.5'		Eight 5-ton

Approximately 30 constructed.

Akama Maru	5,600	Kazan Maru	5,333
Daizen Maru	5,396	Kokko Maru	5,486
Gyokurei Maru	5,588	Meisan Maru	5,480
Hakuyo Maru	5,742	Nichirei Maru	5,396
Heiwa Maru	5,578	Nikkyo Maru	5,484
Hida Maru	5,320	Seinan Maru	5,401
Hidaka Maru	5,486	Shonan Maru	5,401
Higane Maru	5,320	Tainan Maru	5,407
Hioki Maru	5,320	Takashima Maru	5,633
Hiwa Maru	5,320	Tatsubato Maru	5,396
Honan Maru	5,401	Tennan Maru	5,407
Horei Maru	5,588		

This class, with the medium tanker, Type TM, represents the first standardization for wartime construction. The two classes of vessels are almost identical in length, beam, and hull shape. Distinctive features of the Ore Carrier are its engines-amidship design, with kingposts against the superstructure, and masts against the poop and forecastle. Occasionally ships may appear with a single kingpost instead of a mast forward and a topmast on the kingpost against the bridge. Jap Merchant Ship Card Nos. FT 1010 FT 1015, FT 1023 (similar).



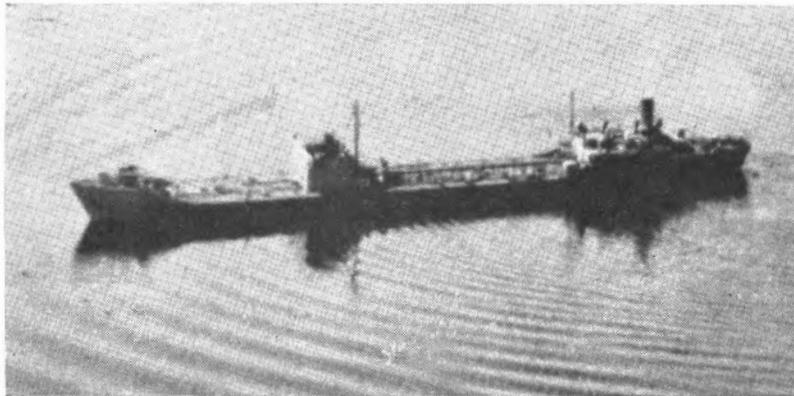
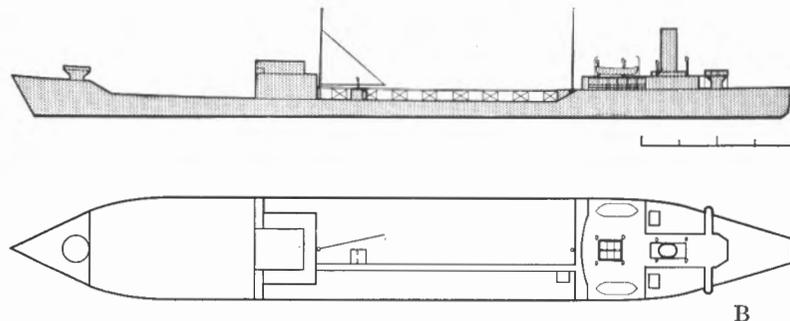
DECLASSIFICATION OF WWII RECORDS

ONI 208-J Supplement 3
Division of Naval Intelligence**TYPE TL**

Design unknown, but probably closely similar to the AKATSUKI MARU, GENYO MARU, KOYOKUTO MARU, and OMUROSAN MARU classes of tankers built from 1937 to 1939.

Gross tonnage:	10,000
Disp. tonnage loaded:	14,500
Draft, loaded:	29.7'
Length, o. a.:	--
Beam:	--
Speed, normal cr.:	16.5 kts.
Machinery:	Steam turbine
SHP:	9,500
Cargo booms:	One 2-ton Five 3-ton
Capacity:	105,000 bbls.

▼ TL (Modified)

**54-MMF****TYPE TL (Modified)****Sugar Able Love****TYPE TL (Modified)**

Characteristics of this tanker are its prominent "economy" hull shape, long, almost pointed stern, and absence of catwalk forward of bridge. Note the location of foremast, which is peculiar to this class alone.

Gross tonnage:	10,000	Speed, normal cr.:	13 kts.
Disp. tonnage loaded:	14,500	Machinery:	Steam turbine
Length, o. a.:	517	SHP:	5,000
Beam:	67'	Cargo booms:	One 2-ton
Draft, loaded:	29.7'	Capacity:	105,000 bbls.

Approximately 12-15 of the Type TL and TL (Modified) had been built by 1 July 1944.

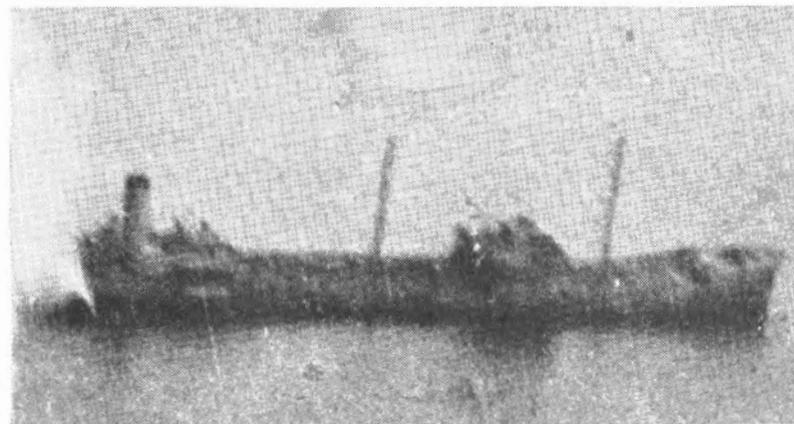
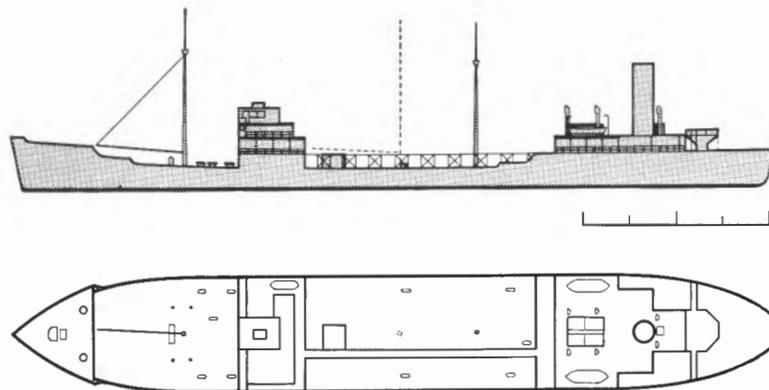
Amatsu Maru	10,567
Kyokuei Maru	10,570
Kyuei Maru	10,171
Mirii Maru	10,564
Nanpo Maru	10,033
Okigawa Maru	10,043

TYPE TM

Sugar Able Item

55-MMF

B



Closely similar to the Ore Carrier (Type K) in length and beam, this tanker has been produced in quantity. It will generally appear without catwalk forward of the bridge, but on occasion this has been observed. Variations in superstructure may occur. Jap Merchant Ship Card Nos. S 1005, S 1004 (catwalk forward).

Gross tonnage:	5,200	Speed, normal cr.:	12.5 kts.
Disp. tonnage loaded:	7,000	Machinery:	Steam turbine
Length, o. a.:	410'	SHP:	3,600
Beam:	59'	Cargo booms:	Two 2-ton
Draft, loaded:	24'	Capacity:	54,000 bbls.

Approximately 40 had been built by 1 July 1944.

Asashio Maru	5,111	Ryuei Maru	5,144
Bokuei Maru	5,135	Sarawak Maru	5,135
Eiho Maru	5,068	Seishin Maru	5,240
Ichiyo Maru	5,106	Tarakan Maru	5,135
Kokuei Maru	5,154	Yamamizu Maru	5,154
Nichinan Maru	5,175	Yamamizu Maru #2	5,154
Nichirin Maru	5,163	Yamamizu Maru #3	5,244
Ogurasan Maru	5,069	Yuho Maru	5,226
Otorisan Maru	5,280	Zuiho Maru	5,135
Palembang Maru	5,236		

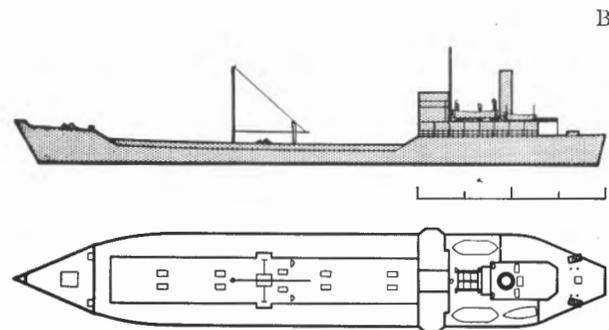


This small tanker is closely similar to Type D (Modified) and, at a distance, distinction between the two classes will be difficult. Characteristic features of the tanker, however, are the trunked deck, short superstructure, stack well aft of bridge, slender foremast almost amidships, and thin mainmast at after edge of bridge. Observers should also keep in mind that the tanker will lack the many heavy booms characteristic of cargo vessels. Distinction between TM (Modified) and the TS types on page 14 will also be difficult, since the few distinguishing features are apparent only on close observation.

47-MMF

TYPE TM (Modified)

Sugar Able Sugar



B

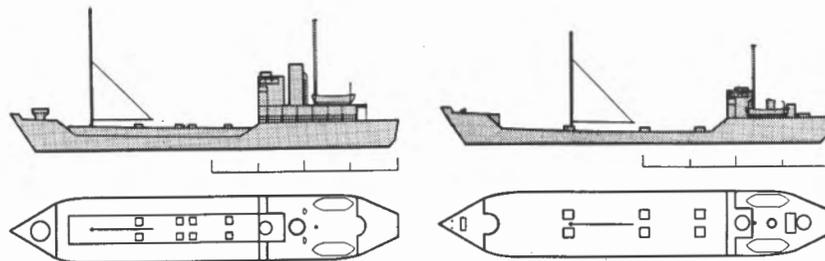
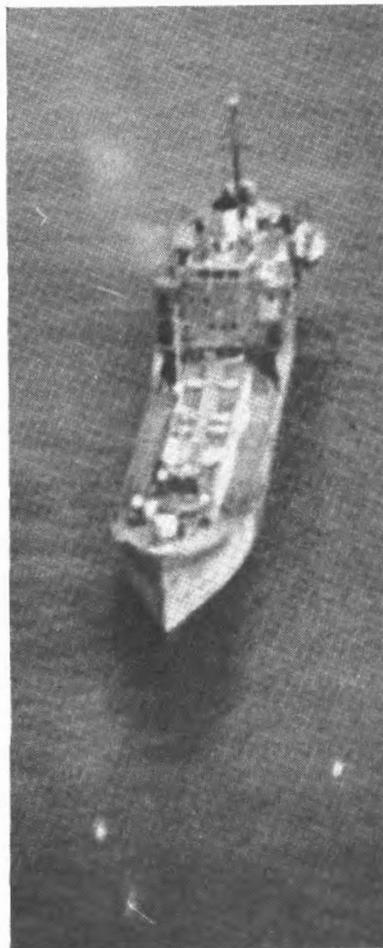
Gross tonnage:	2,800	Speed, normal cr.:	8 kts.
Disp. tonnage loaded:	4,300	Machinery:	Reciprocating
Length, o. a.:	325' (approx.)	IHP:	1,100
Beam:	50' (approx.)	Cargo booms:	One 2-ton
Draft, loaded:	19.7'	Capacity:	28,000 bbls.

Approximately 12 have been built, four of which are listed below—

Kanetsu Maru	2,867	Toka Maru	2,759
Nittatsu Maru	2,859	Ukai Maru #5	2,841

TYPE TS, Sugar Able Sugar

47-MMF



Two versions of small tankers with "economy" hull designs have been observed in quantity, both closely similar to the Type E, Cargo, in dimensions and in general design features. The trunked deck version, since it burns coal (note large stack), more nearly fits the given specifications for the TS Type, while the second design is, in all probability, a later modification. However, in most cases so far identified, use of the "economy" hull design has been indicated by the term "Modified". Moreover, both types shown here are more nearly of 850 than 1000 gross tons, which is the captured figure for the TS vessel. There is a strong possibility, therefore, that the designation TS belongs to a design at present unidentified and of which few were produced, and that both versions illustrated here are later adaptations. Classification for both drawings of Type TS is B.

Gross tonnage:	1,000	Speed, normal cr.:	10 kts.
Disp. tonnage loaded:	1,250	Machinery:	Reciprocating
Length, o. a.:	210' (?)	IHP:	950
Beam:	33.5' (?)	Cargo booms:	One 1-ton
Draft, loaded:	15.5'	Capacity:	11,000 bbls.

Approximately 20-25 have been built including the following units—

Koryu Maru	974	Kyoei Maru #6	1,178
Koshin Maru	975	Kyoei Maru #7	1,160
Kotai Maru	975	Kyoryoku Maru	1,009
Kyoei Maru #3	1,189	Shonan Maru	1,029
Kyoei Maru #5	1,186	Takasago Maru	1,116

