INTERIM REPORT

OF THE

WORKING GROUP

OF THE

NATIONAL PETROLEUM COUNCIL'S

COMMITTEE ON TANKER REQUIREMENTS

December 14, 1956

CHAIRMAN OF THE COMMITTEE: B. Brewster Jennings

Interim Report of the Working Group Appointed by The Tanker Requirements Committee, National Petroleum Council

As of November 1, 1956, there were 2,509 ships of 43,195,426 deadweight tons (6,000 deadweight tons and over) in the world fleet, including government and military tankers and excluding those flying the flag of Russia and its satellite countries. These tankers expressed in equivalent T-2 carrying capacity (16,000 dwt, 14.6 knots) total 2,544 T-2's. Prior to the closure of the Suez Canal and loss of certain Middle East pipelines, there were only three over-age tankers (1.2 T-2) in tie-up which leads the Working Group to believe that the tanker requirements just balanced availability at that time.

As of November 1, in tankers of 6,000 dwt and over, there were 814 ships of 23,352,200 deadweight tons (estimated equivalent to 1,545 T-2's) on order or under construction for which contracts had been definitely signed. This information was obtained from Maritime Administration sources and does not include a number of tankers which the Committee feels has reached a firm point in negotiations between shipowners and shipyards and, therefore, should be added to the Maritime Administration list.

Therefore, the Working Group, through preliminary investigations of their own, show an indication of 5,570,400 deadweight tons, equivalent to 382 T-2's, of tankers on order or planned over and above the 23,352,200 dwt indicated in the preceding paragraph. Letters have been sent to major shipowners, worldwide, requesting their plans for tankers to be delivered before the end of 1965, and an analysis of

their replies will be reported in the final report of the Working Group.

Statement "A" attached, shows a breakdown by size categories of the 23,352,200 dwt definitely on order or under construction as of November 1, 1956, plus the 5,570,400 dwt additional indicated on order or planned. It is interesting to note on Statement "A" the number of large sized tankers definitely on order or under construction over the next several years.

The Working Group feels that the tanker construction capacity of the world shipyards is about 300 equivalent T-2's per year, broken down 275 in free foreign yards and 25 in U. S. yards. This indication of shipyard capacity has been arrived at by analyzing building performance of the world shipyards and assessing total shipbuilding capacity vis-a-vis ways available for tanker construction. In view of the present indicated steel shortage over the next few years, it is felt that the assessed shipyard capacity is probably a maximum figure.

It will be noted on Statement "B" that the last two months of 1956 and the years 1957 and 1958 indicate tanker deliveries in excess of this assessed shipyard capacity but it is felt that slippages in delivery dates will bring these deliveries in line with estimated yard capacity.

It is recognized that the combined effects of tanker scrappage, conversions to dry cargo and other non-petroleum services plus any marine losses, will partially offset the estimated future construction mentioned above. However, the Working Group feels these reductions will be only nominal (approximately 25 T-2's annually) during the 1957-1961

period. On this basis it appears that the world fleet will be increased 54% between now and 1961 by tankers now under construction or on order for which contracts have been signed based on Maritime Administration figures only; this amounts to a compounded annual growth rate of 9% for the next five years. This rate of growth should continue through 1962 when considering those tankers (5,570,400 dwt) which as yet have not been contracted for but are, to the knowledge of the Working Group, definitely planned.

It is difficult to estimate the number of tankers now on order or under construction which could be increased in size although it is felt that an increase would be possible in certain particular yards for those tankers scheduled for delivery from 1959 onwards. A very rough estimate under these conditions would indicate about 25/50 ships could be enlarged to the 60,000 ton or over category. However, the exact amount of additional tonnage that could be gained by enlarging individual vessels over the size now ordered or planned is a somewhat academic figure since increasing the size of each tanker would cause a delay in its completion and thus only accomplish building big ships at the expense of reducing the number delivered. Furthermore, even with larger ships delivered, the shipyard capacities would not be appreciably increased above the approximate annual 300 T-2 equivalents mentioned previously, particularly in view of anticipated short supply of ship steel.

The Working Group feels that its preliminary report would not be complete without mentioning the apparent shortage of drydocks, world-

wide, in which repairs could be made to tankers of 60,000 dwt and over. A list of drydocks available, worldwide, to handle ships in excess of 102' beam (about 50,000 dwt) is attached, from which it will be noted that the United States East Coast is woefully lacking in these facilities.

A statement showing salient characteristics of typical tankers of various sizes is also attached, and attention is particularly directed to the beam and draft of these large tankers. In general, the tankers of 45,000 dwt and over can only be utilized efficiently in certain specific long-haul trades, such as Persian Gulf to U.S. West Coast, and Persian Gulf to certain major European and U.S. East Coast ports. Tankers of 60,000 tons and over can only be loaded fully in certain Persian Gulf ports and could be discharged fully loaded only at Le Havre and possibly lower Delaware Bay and certain U.S. West Coast ports, which indicates the port development job ahead in order to utilize these larger tankers efficiently. In this connection, certain Caribbean loading ports are now being improved to fully load 60,000 dwt tankers.

It appears that the Suez Canal and Panama Canal under present conditions would limit vessels to a maximum of about 60,000 dwt with draft limitations of about 30' in Suez and about 37'6" in Panama. In the latter case, the limitations are a maximum beam of 107' (lock width 109') and 41-42' depth of fresh water. Within these limitations vessels larger than 60,000 dwt, up to a maximum length of 900', could transit the Panama Canal locks.

A preliminary review of this Interim Report indicates to the Committee the following:

(1) Active world shipyards are presently booked to capacity through 1961.

(2) There is an indicated shortage of steel for the present ship construction program.

(3) Considerable work is required in development of ports and port facilities, including drydocks and repair facilities, for large vessels.

A final report will be submitted by the Working Group during the first part of January.

Attachments (4)

12/11/56

STATEMENT "A"

WORLD TANKER CONSTRUCTION
AS OF 12/1/56
(6,000 D.W.T. & Over)
INCLUDING ESTIMATED PLANNED CONTRACTS

D.W.T. RANGE	NO.	D.W.T.	T-2'S
6,000 / 16,000	36	465,300	30.8
16,001 / 20,000	303	5,667,560	376.3
20,001 / 30,000	103	2,537,350	169.8
30,001 / 40,000	317	10,961,721	730.8
40,001 / 50,000	151	6,679,950	444.5
50,001 / 60,000	13	745,400	50.3
OVER 60,000	26	1,865,319	124.2
TOTAL	949	28,922,600	1,926.7

STATEMENT "B"

TANKERS REPORTED UNDER CONSTRUCTION OR ON ORDER
Nov. 1, 1956

Yards	Number	D.W.T.	T-2 Equiv.	Contract Delivery Dates T-2 Equivalent 1956	1957	1958	1959	1960	1961	1962	Unknown
United States	30	1,086,880	77.3	2.2	27.6	31.4	8.5	-	-	-	7.6
British	168	4,182,530	277.8	39.7	65.1	73.3	54.3	30.8	8.6	-	6.0
Canadian	1	6,150	.4	-	.4	-	-	-	-	-	-
Swedish	114	2,955,600	196.4	22.6	38.2	35.4	37.2	17.4	12.6	2.7	30.3
Norwegian	54	1,109,000	73.7	6.2	11.1	15.5	15.0	13.0	11.6	1.3	-
Danish	20	487,100	32.4	1.2	7.6	9.4	4.8	3.4	-	-	6.0
French	46	1,566,434	104.1	10.5	20.2	24.1	12.4	25.3	4.4	-	7.2
Spanish	13	227,410	15.1	1.2	-	1.2	3.4	3.4	-	-	5.9
Netherlands	65	1,611,730	107.1	9.8	19.5	22.4	17.5	24.8	6.8	-	6.3
Italian	46	1,491,776	99.1	3.4	18.2	32.1	29.0	4.8	-	-	11.6
Belgian	15	355,150	23.6	2.0	4.5	8.0	7.2	1.9	-	-	-
Japanese	130	4,588,830	304.8	17.1	118.1	104.7	19.2	6.4	-	-	39.3
German	84	2,591,310	172.1	11.4	22.4	43.7	31.0	27.5	3.0	-	33.1
Portugese	1	16,700	1.1	1.1	-	-	-	-	-	-	-
Yugoslavia	2	50,000	3.3	-	-	-	-	-	-	-	3.3
TOTAL	789	ø22,326,600	1,488.3	128.4	352.9	401.2	239.5	158.7	47.0	4.0	156.6

ACTUAL TANKER DELIVERIES

	1956 No.	1956 D.W.T.	1956 T-2 Equiv.	1955 No.	1955 D.W.T.	1955 T-2 Equiv.	1954 No.	1954 D.W.T.	1954 T-2 Equiv.
U. S. Yards	4	111,362	7.6	3	85,500	6.0	26	727,465	49.1
Foreign Yards	100	2,607,278	167.1	160	3,456,566	219.8	192	3,898,915	245.9
TOTAL	104	2,718,640	174.7	163	3,542,066	225.8	218	4,626,380	295.0

ø In addition to above, the following contracts have been reported as placed, however, actual yards are unknown.

Yards	No.	D.W.T.	T-2 Equiv.
British	17	352,000	23.4
Swedish	9	416,000	27.6
Norwegian	3	57,000	3.8
Netherlands	4	78,000	5.2
Japanese	2	76,000	5.0
German	2	76,000	5.0
TOTAL	37	1,055,000	70.0

FEA/tl

November 29, 1956

DRYDOCKS CAPABLE OF TAKING SHIPS OF 102' BEAM
NAVAL DOCKS EXCLUDED EXCEPT AS NOTED (DATA FROM LLOYD'S REGISTER APPENDIX 1956-1957)

	Length	Breadth	Depth
Liverpool	1050' 0"	120' 0"	43'11"
Naples	1145' 0"	131' 0"	43' 6"
London, Tilbury	752' 4"	110' 0"	37' 5"
Southampton	1200' 0"	135' 0"	50' 8"
Le Havre	1046' 6"	125' 0"	57' 6"
Cherbourg (Government)	820' 2"	118' 0"	45'11"
St. Nazaire	758' 0"	115' 0"	28' 5"
St. Nazaire	1148' 0"	173' 0"	44' 1"
Toulon (Government)	1318' 0"	118' 0"	41' 2"
Bremerhaven	1035' 0"	111' 0"	36' 0"
Gibraltar (Admiralty)	908' 4"	125' 0"	40' 2"
Genova	845' 0"	105' 0"	36' 0"
Genova	1148' 0"	131' 2"	42' 7"
Taranto	807' 4"	133'11"	39' 4"
Venice	820' 2"	115' 4"	39' 3"
Valetta (Admiralty)	857' 8"	126' 6"	40' 0"
Rotterdam (Floating Dock)	680' 0"	105' 6"	35' 9"
Rotterdam (Floating Dock)	695' 0"	132' 0"	-
Amsterdam	800' 0"	120' 0"	28' 6"
Cadiz	787' 5"	124' 8"	39' 4"
Maisuru, Japan	752' 0"	110' 0"	35' 3"
Sasabo, Japan	687' 1"	106' 8"	39' 4"
Sasabo, Japan	820' 3"	113' 4"	41' 5"
Sasabo, Japan	1114'10"	168' 3"	50' 6"
Singapore (Admiralty)	1006' 0"	130' 0"	44' 9"
Oran	721' 1"	111' 6"	27' 9"
Bizerta (Government)	775' 0"	122' 0"	39' 8"
Cape Town	1212' 4"	148' 0"	45' 0"
Durban	1166' 4"	110' 0"	41' 0"
Quebec	1150' 0"	105' 0"	40' 0"
St. John N.B.	1225' 0"	125' 0"	42' 0"
Victoria, B.C.	1186' 0"	135' 0"	40' 0"
Balboa, C.Z.	1000' 0"	108' 6"	41' 6"
Brisbane	880' 0"	110' 0"	36' 7"
Pearl Harbor	1000' 0"	133' 8"	44' 6"
Nagasaki, Japan	1043' 0"	128' 8"	32' 7"
Camden, N.J. (New in 1957)	1100' 0"	150' 0"	41' 6"
Newport News "Construction" Graving Docks generally not available for Repairs	960' 0" 1000' 0"	123' 0" 135' 0"	37' 0" 42' 0"
U. S. NAVY EAST COAST DRY DOCKS			
Boston	1200' 0"	120' 0"	42' 9"
Bayonne	1092' 0"	143' 0"	43'10"
Norfolk	1001' 0"	116' 2"	43' 3"
Philadelphia	1005' 0"	115' 4"	39'11"
OTHER LARGE COMMERCIAL DRY DOCKS			
San Juan	691' 0"	91' 0"	25' 0"
Baltimore (Floating Dock)	690' 0"	100' 0"	26' 0"
Baltimore	618' 0"	95' 0"	28' 5"
Jacksonville, Fla.	552' 0"	93' 0"	25' 0"
Jacksonville, Fla.	552' 0"	96' 0"	25' 0"
New York	725' 0"	100' 0"	28' 0"
New York	657' 0"	100' 0"	-
New York	659' 0"	96' 0"	-
Bahia, Argentina	770' 0"	118' 0"	43' 3"
Talcahuano, Chile	848' 3"	116' 0"	36' 0"

#1089

SALIENT CHARACTERISTICS OF TYPICAL TANKERS OF VARIOUS SIZES

	35,550 D.W.T.	37,400 D.W.T.	39,350 D.W.T.	45,600 D.W.T.	46,000 D.W.T.	60,000 D.W.T.	80,000 D.W.T.
Length, O.A.	690' 0"	693'11"	699' 6"	720' 0"	740' 0"	810' 0"	850' 0"
Length, B.P.	660' 0"	666' 0"	665' 0"	695' 0"	705' 0"	770' 0"	815' 0"
Beam	90' 0"	91' 2"	97' 0"	102' 0"	102' 0"	104' 0"	125' 0"
Depth (Moulded)	47' 0"	48' 5"	49' 3"	49' 6"	50' 0"	56' 0"	61' 3"
Depth (Summer)	35'7-5/16"	36' 7"	36' 0"	37'3-3/4"	37'10-1/2"	41' 7"	46' 0"
Displacement Tons	47,408	48,757	51,750	59,300	60,600	76,300	--
D. W. T.	35,521	36,850	39,350	45,600	46,000	60,000	80,000
Speed (Trial)	17.9 K	18.1 K	17.0 K	17.0 K	17.5 K	18.0 K	--
Speed (Service)	16.6 K	16.8 K	16.3 K	16.2 K	16.3 K	16.8 K	16.8 K
Rated Horsepower (for Service Speed)	17,600 SHP	19,000 SHP	16,500 SHP	19,000 SHP	19,000 SHP	25,000 SHP	30,000 SHP
Fuel Consumption	555 B/D	600 B/D	520 B/D	600 B/D	600 B/D	790 B/D	950 B/D
Type of Propulsion	Single Screw Steam Turb.	Single Screw Steam Turb.	Single Screw Steam Turb.	Single Screw Steam Turb.	Single Screw Steam Turb.	Single Screw Steam Turb.	Twin Screw Steam Turb.
Volumetric Capacity (Bbls.)	309,690	320,000	356,200	359,000	402,000	490,000	660,000
Fuel Capacity-Aft	13,204 Bbls.	-	19,750 Bbls.	16,560 Bbls.	12,500 Bbls.		
" " Fwd.	16,388 "	-	11,060 "	22,080 "	26,100 "		
" " Total	29,592 "	26,800 Bbl	30,810 "	38,640 "	38,600 "	--	--
Tons/Inch Immers.	120.3	120.4	130.0	142.0	143.0	159.0	202.0