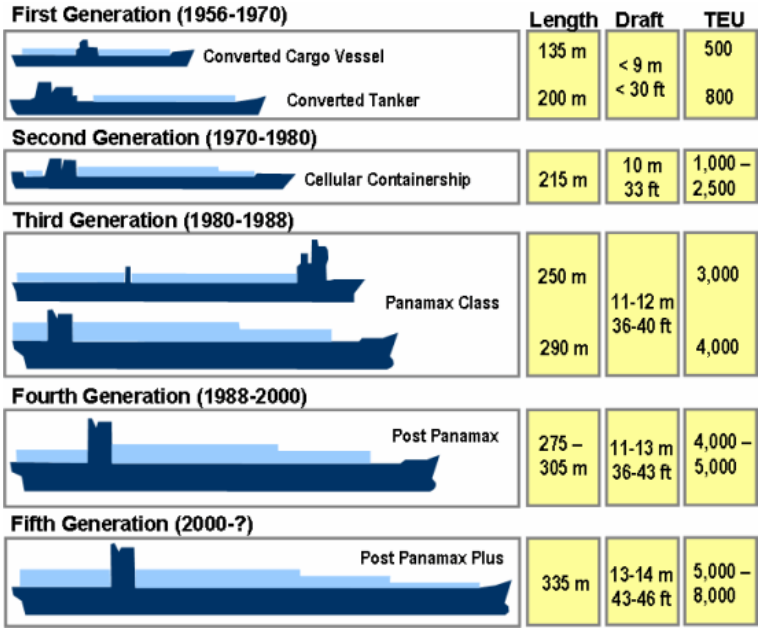
The Containerships and Containers

Five Generations of Containerships:



The first containerships were modified bulk vessels or tankers that could transport up 1,000 TEU. Indeed, the container was at the beginning of the 1960s an experimental transport technology and modifying existing ships proved out to be the least expensive solution. These ships were carrying onboard cranes. Once the container was massively adopted at the beginning of the 1970s, the construction of the first containerships (second generation) entirely dedicated for handling containers started. They carry the cellular denomination since they are composed of cells lodging containers up to stacks of 12. Cranes were removed from the ship design so more containers could be carried.

Economies of scale pushed the construction of larger containerships in the 1980s until the Panamax (1985) and Post Panamax (1988) standards, carrying between 4,000 and 5,000 TEU, were reached. The fifth generation (Post Panamax Plus) has entered in service at the beginning the 21st century and is able to transport between 5,000 and 8,000 TEU. A limited number of harbors are able to handle them, because these ships require deep water ports (at least 43 feet of draft) and highly efficient, but costly, transshipment infrastructures. Containership speeds have peaked to an average of 20 to 25 knots and it is unlikely that speeds will

increase due to energy consumption. Although economies of scale would favor the construction of larger containerships, there are operational limitations to deploy ships bigger than 8,000 TEU. Containerships in the range of 5,500 to 6,500 TEU are the most flexible in terms of number of port calls since larger ships would require less calls and thus be less convenient to service specific markets. Still, even larger ships are being introduced, such as in 2006 when the liner carrier Maersk introduced a new class of 14,500 TEU containership. It remains to be seen which routes and ports these ships would service. Emma Maesk is owned by the A.P. Moller-Maersk Group. When she was launched, Emma Maersk became the largest container ship ever built, and as of 2007 the longest ship in use.

Dimensions

length overall (LOA) = 397 m

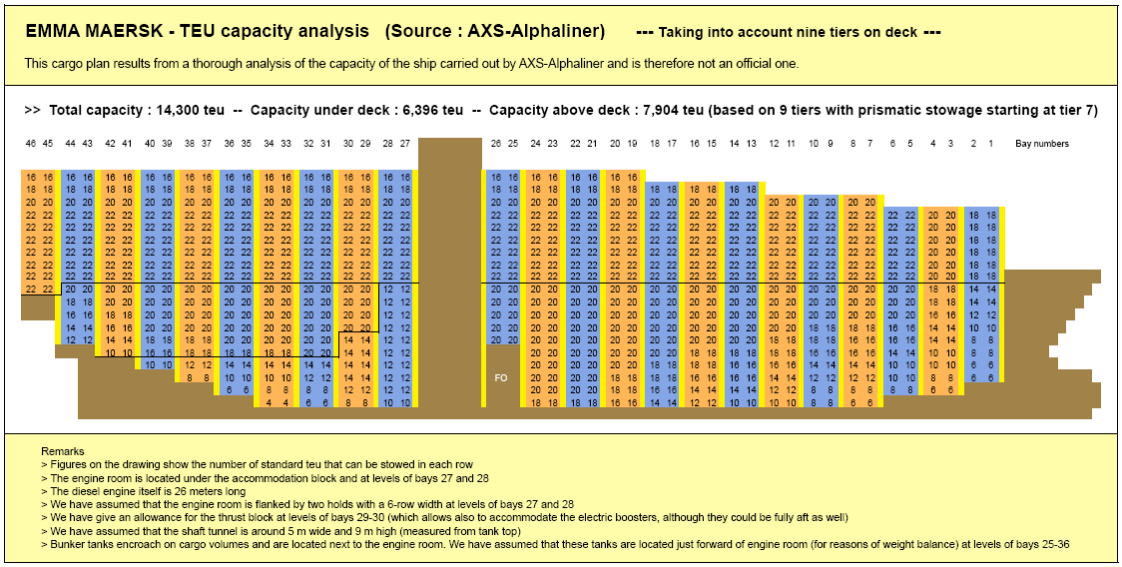
beam = 56 m

hull depth = 30 m (deck edge to keel)

draft = 15.5 m

Speed

more than 25.5 knots



AXS-Alphaliner - CELLULAR FLEET at 1st March 2007

> **The cellular fleet counts 4009 ships for 9,81 M teu - of which 51 % are chartered from non-operating owners**

> **The cellular fleet aggregates 91.9% of the total capacity deployed on liner trades in teu terms**
>> Out of a total of 5,746 ships active on liner trades for 10.67 M teu and 150.2 M tdw

> **The orderbook counts 1281 ships for 4,69 M teu representing 47,8 % of the existing fleet**

> **The orderbook includes 813 ships for 2,11 M teu with charter status representing 45,1 % of the total orderbook**

	existing		chartered *		%	orderbook		for charter		%	O / E
size range	ships	teu	ships	teu		ships	teu	ships	teu		% teu
> 7 500 teu	157	1 342 567	60	501 000	37%	155	1 479 187	30	280 580	19%	110,2%
5 000 / 7 499 teu	366	2 123 167	147	847 293	40%	178	1 064 051	63	379 095	36%	50,1%
4 000 / 4 999 teu	350	1 548 099	178	784 315	51%	188	823 194	85	370 602	45%	53,2%
3 000 / 3 999 teu	285	967 648	134	453 365	47%	86	293 359	70	239 051	81%	30,3%
2 500 / 2 999 teu	340	931 267	241	655 748	70%	126	337 816	95	254 716	75%	36,3%
2 000 / 2 499 teu	317	724 247	189	436 460	60%	22	48 544	17	37 604	77%	6,7%
1 500 / 1 999 teu	475	801 811	316	532 333	66%	148	258 244	120	208 982	81%	32,2%
1 000 / 1 499 teu	602	712 495	330	384 973	54%	187	229 670	169	209 243	91%	32,2%
500 / 999 teu	734	535 828	480	351 285	66%	191	153 128	164	132 506	87%	28,6%
250 / 499 teu	271	101 944	116	43 741	43%						
100 / 249 teu	112	20 292	44	7 544	37%						
TOTAL	4 009	9 809 365	2 235	4 998 057	51%	1 281	4 687 193	813	2 112 379	45%	47,8%

* Note : the existing chartered fleet takes into account ships chartered out to operators by non-operating owners, thus it does not take into account 92 ships for 129,497 teu which are normally owned by an owner-operator but are chartered out to another operator, either for operational reasons (operational exchanges within alliances or partnerships) or because they are surplus to their owners requirements.

Container Types:

There are five common standard lengths, 20-ft (6.1m), 40-ft (12.2m), 45-ft (13.7 m), 48-ft (14.6m), and 53-ft (16.2m). United States domestic standard containers are generally 48-ft and 53-ft (rail and truck). Container capacity is measured in twenty-foot equivalent units (TEU). A twenty-foot equivalent unit is a measure of containerized cargo capacity equal to one standard 20 ft (length) × 8 ft (width) × 8 ft 6 in (height) container. In metric units this is 6.10 m (length) × 2.44 m (width) × 2.59 m (height), or approximately 39 m^3.

Most containers today are of the 40-ft (12.2 m) variety and are known as 40-foot containers. This is equivalent to 2 TEU. 45-foot (13.7 m) containers are also designated 2 TEU. Two TEU are equivalent to one forty-foot equivalent unit (FEU). High cube containers have a height of 9 ft 6 in (2.9 m), while half-height containers, used for heavy loads, have a height of 4 ft 3 in (1.3m). When converting containers to TEUs, the height of the containers typically is not considered.

The maximum gross mass for a 20-ft dry cargo container is 24,000 kg, and for a 40-ft, (inc. the 2.87 m (9 ft 5 in) high cube container), it is 30,480 kg. Allowing for the tare mass of the container, the maximum payload mass is there reduced to approx. 21,600 kg for 20-ft, and 26,500 kg for 40-ft containers

Various container types are available for different needs:

- Dry cargo (DC): general purpose dry van for boxes, cartons, cases, sacks, bales, pallets, drums in standard, high or half height.
- High cube (HQ): palletwide containers for europallet compatibility.
- Open top: bulktainers for bulk minerals, heavy machinery.
- Reefer: temperature controlled from -25°c to +25°c reefer.
- Flat rack: flushfolding flat-rack containers for heavy and bulky semi-finished goods, out of gauge cargo.
- Open side: for loading oversize pallet.
- Platform: for barrels and drums, crates, cable drums, out of gauge cargo, machinery, and processed timber.
- Tank containers: for bulk liquids and dangerous goods.
- Ventilated containers: for organic products requiring ventilation.
- Rolling floor for difficult to handle cargo.
- Gas bottle.
- Generator.

20' DC

20'x8'x8'6" DRY VAN

Weight

Tare	2,360 kgs	5,200 lbs
Payload	21,640 kgs	47,710 lbs
Gross Weight	24,000 kgs	52,910 lbs

* Start from YMLU 251965

Tare	2,370 kgs	5,230 lbs
Payload	28,110 kgs	61,970 lbs
Gross Weight	30,480 kgs	67,200 lbs

Door Opening

Width	2,340 mm	7' 8.1"
Height	2,280 mm	7' 5.8"
Inside Cubic	33.2 cu.m.	1,173 cu.ft.

Measure	Overall		Inside	
Length	6,058 mm	19' 10.5"	5,896 mm	19' 4.1"
Width	2,438 mm	8'	2,352 mm	7' 8.6"
Height	2,591 mm	8' 6"	2,393 mm	7' 10.2"

40' DC

40'x8'x8'6" DRY VAN

Weight

Tare	3,970 kgs	8,750 lbs
Payload	26,510 kgs	58,450 lbs
Gross Weight	30,480 kgs	67,200 lbs

* Start from YMLU 489951

Tare	3,950 kgs	8,710 lbs
Payload	28,550 kgs	62,940 lbs
Gross Weight	32,500 kgs	71,650 lbs

Door Opening

Width	2,340 mm	7' 8.1"
Height	2,280 mm	7' 5.8"
Inside Cubic	67.68 cu.m.	2,390 cu.ft.

Measure	Overall		Inside	
Length	12,192 mm	40'	12,025 mm	39' 5.4"
Width	2,438 mm	8'	2,352 mm	7' 8.6"
Height	2,591 mm	8' 6"	2,393 mm	7' 10.2"

40' HQ

40'x8'x9'6" HIGH CUBE

Weight

Tare	4,170 kgs	9,190 lbs
Payload	26,310 kgs	58,010 lbs
Gross Weight	30,480 kgs	67,200 lbs

45' HQ

45'x8'x9'6" HIGH CUBE

Weight

Tare	5,100 kgs	11,240 lbs
Payload	27,400 kgs	60,410 lbs
Gross Weight	32,500 kgs	71,650 lbs

20' Open Top

YMLU620000-620969
20'x8'x8'6" OPEN TOP

Weight

Tare	2,460 kgs	5,423 lbs
Payload	21,540 kgs	47,487 lbs
Gross Weight	24,000 kgs	52,910 lbs

40' Open Top

YMLU640000-640929
40'x8'x8'6" OPEN TOP

Weight

Tare	4,100 kgs	9,039 lbs
Payload	26,380 kgs	58,161 lbs
Gross Weight	30,480 kgs	67,200 lbs

20' Reefer

20'x8'x8'6" REEFER

Weight

Tare	3,000 kgs	6,610 lbs
Payload	27,480 kgs	60,590 lbs
Gross Weight	30,480 kgs	67,200 lbs

40' Reefer

40'x8'x9'6" REEFER HIGH CUBE

Weight

Tare	4,710 kgs	10,380 lbs
Payload	27,790 kgs	61,270 lbs
Gross Weight	32,500 kgs	71,650 lbs

20' Flat Rack

YMLU680390 – 680989
20'x8'x8'6"FLAT RACK

Weight

Tare	2,800 kgs	6,170 lbs
Payload	31,200 kgs	68,790 lbs
Gross Weight	34,000 kgs	74,960 lbs

40' Flat Rack

YMLU700520 - 702019
40'x8'x8'6" FLAT RACK

Weight

Tare	4,900 kgs	10,800 lbs
Payload	40,100 kgs	88,410 lbs
Gross Weight	45,000 kgs	99,210 lbs

45'HQ(EURO standard)

YMLU951501-952700
45'x8'x9'6" HIGH CUBE

Weight

Tare	5,160 kgs	11,380 lbs
Payload	27,340 kgs	60,270 lbs
Gross Weight	32,500 kgs	71,650 lbs