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Trades Review | 2023

## An Age of Transitions



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## FOREWORD



Dear DynaLiners Readers,

This year's DynaLiners Trades Review title is titled 'An Age of Transitions'. The reference to 'An...' rather than 'The...' is deliberately chosen, for container shipping is always evolving. The plural '...Transitions' is also a deliberate choice because when looking around, we are actually seeing changes everywhere.

What makes these changes and evolutions more like transitions is because within a relatively short time, some of the fundamentals of the sector will have altered to such an extent that the way it operates and does business will be noticeably different.

Starting at the top, we are transitioning away from two abnormally prosperous years for the container shipping sector with carriers taking at least USD 266 billion (!!) in net profit. What comes out at the end of this transition will not be a return to the 'old normal' but rather the beginning of a new one.

Carriers are transitioning rapidly away from just being involved in moving containers by sea. For sure, a number already had landside terminals and logistics capabilities, but some have now taken to the skies in a significant way, and one will even be able to tell you all about these and other developments through its own newspaper and other media platforms. Underlying operational developments are gaining critical mass too. These cover how ships are fuelled, commanded, controlled and who knows, ultimately crewed.

These stories, evolutions and transitions feature in the following pages. Throughout, they are supported by the usual array of tables and graphs to give you as complete a picture as is possible of 2022, plus a little bit of 2021 and 2023.

Putting together this Review and the whole DynaLiners portfolio is a team effort. As such, may we point you to the sterling efforts of Mr. Frans Waals (Editor, DynaLiners portfolio), Mr. Evan van Kleef (DynaLiners Monthly), Ms. Michele Camm and Mr. Morgan Douglas (advertisements), and Ms. Rocio Sevillano (administration).

Our final word goes to our fantastic advertisers. Whilst we are proud that the remaining DynaLiners products are advertisement free, without our loyal advertisers, this document you are reading now (and its predecessors) would not be possible.

We wish you all pleasant reading, and a safe and healthy 2023 and 2024.

On behalf of the DynaLiners Team,

Darron WADEY

Author

DynaLiner Trades Review, 2023

# NEW PUBLICATION!



## Dynamar's Ports & Terminals Europe & Africa 2023



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# AN AGE OF TRANSITIONS

## INTRODUCTION

This review is the story of 2022, with a bit of 2021 and 2023 thrown in to ease the transitions from one year to the next, and because storylines have an annoying habit of not adhering to nicely delineated calendar years.

The main theme of this year's summary is "An age of Transitions". It is not "The..." age, deliberately so, for despite its reputation for conservatism, shipping is always in transition. At its most basic level, the strategy behind the transition can be existential. More simply put: corporate survival. If this is assured, for the immediate future at least, then the transition can be more towards how to thrive. Most obviously, the industry has been busy transitioning from the relative famine of the immediate COVID-19 period, to the unsurpassed feast of the late and (dare-we-say) post-COVID-19 period. From mid 2022, it was clearly transitioning back yet again

The following sub-sections of this introduction give the very broadest of summaries as to how that 2022 fared, and in many ways also introduces another and immediate point of transition facing the industry, one of decreasing returns.

For the details behind these high-level overviews, an examination of the widest range of container shipping themes available in any one place, by all means visit the individual chapters and the accompanying masses of data, graphs, tables and commentary.

## CARGOES

Global volumes in 2022 were estimated by Dynamar to have declined between four and five percent to 175 million TEU. Despite this representing an absolute fall of 8.2 million TEU, it was still the third highest total as estimated, being beaten by only 2021 and 2019. Relatively speaking, the contraction was the most acute seen this century aside from 2009 when carryings dropped by approaching ten percent.

Development of worldwide full container trade

Year	TEU	Growth y-o-y	CAGR 5-yr	CAGR 10-yr
2022	175,100,000	-4.5%	0.3%	2.3%
2021	183,300,000	5.9%	2.4%	2.8%
2020	173,100,000	-1.6%	2.2%	2.3%
2019	175,900,000	1.5%	3.2%	3.3%
2018	173,300,000	3.9%	3.2%	4.3%
2017	166,800,000	5.0%	3.9%	2.7%
2016	158,900,000	2.3%	2.7%	2.7%
2015	155,300,000	1.5%	2.3%	3.6%
2014	153,000,000	7.0%	3.9%	4.6%
2013	143,000,000	0.0%	4.9%	5.0%
2012	143,000,000	1.0%	2.2%	6.4%
2010	131,200,000	11.0%	3.8%	8.5%
2005	102,000,000	10.7%	12.8%	-
2000	60,500,000	-	-	-
1995	41,200,000	-	-	-
1990	25,700,000	-	-	-
1985	16,800,000	-	-	-
1980	11,400,000	-	-	-

Estimates and forecasts. CAGR = Compound Annual Growth Rate (average annual growth rate)

## SHIPPING CAPACITY

In contrast to cargo volumes, container shipping capacity continued to exhibit relatively healthy growth in 2022 as it expanded by 4.1% to finish on 26.4 million TEU. Combined with fewer cargoes, and not unrelated, the easing of congestion at key ports of entry, this expansion of capacity was one of the major factors behind the diminishing results the further 2022 went on.

Development of global containership fleet capacity

Year	Total TEU	Growth y-o-y	CAGR 5-yr	CAGR 10-yr
2022	26,375,300	4.1%	4.2%	4.6%
2021	25,344,800	4.6%	4.2%	4.8%
2020	24,236,200	2.6%	3.7%	5.0%
2019	23,614,000	3.9%	4.6%	5.6%
2018	22,730,000	5.7%	6.2%	5.7%
2017	21,510,000	4.0%	6.2%	6.3%
2016	20,680,000	2.1%	6.9%	6.9%
2015	20,258,000	7.6%	8.2%	8.3%
2014	18,822,000	12.0%	7.6%	8.7%
2013	17,764,000	5.7%	6.4%	9.0%
2012	16,803,000	5.7%	7.5%	9.4%

As of 31 December of each year. Relates to available capacity with no account taken of any that may have been temporarily withdrawn. Analysis based on data sourced from Alphaliner.

In 2022, shipping capacity therefore grew at a rate that was 8.5 percentage points stronger than the rate of cargo growth. This was widest capacity dominant difference between the two for a decade, and since 2005 had only been bettered by the 21.1 percentage point differential of 2009, which was in the midst of a global financial and economic crisis. On average, the differences have been 2.8 points in favour of capacity growth for the last decade, and 3.2 points since 2005.

Capacity growth against volumes growth

Year	Capacity	Volumes	Difference
2022	4.1%	-4.5%	+8.5pts
2021	4.6%	5.9%	-1.3pts
2020	2.6%	-1.6%	+4.2pts
2019	3.9%	1.5%	+2.4pts
2018	5.7%	3.9%	+1.8pts
2017	4.0%	5.0%	-1.0pts
2016	2.1%	2.3%	-0.2pts
2015	7.6%	1.5%	+6.1pts
2014	5.7%	7.0%	-1.3pts
2013	5.7%	0.0%	+5.7pts
2012	7.4%	1.0%	+6.4pts

Year-on-year growth rates. Analysis based on data sourced from Alphaliner.

As always, the fundamentals decide what happens to rates, and with capacity up and demand down, lower rates must ultimately ensue. However, it was not a case that this all happened overnight, rather there was a gradual easing of the situations as cargoes -along the major routes- declined for each month in comparison with the same point of the previous year. Also, all the while, more newbuild capacity kept being delivered as the year progressed.

RATES

Despite the capacity/cargo dynamics, a high level overview of rates developments suggests a mixed picture with the CTS-based annual averages strongly up, the CCFI being significantly up whilst the SCFI and WCI were both down. As these are annual averages, they mask the underlying trends of year-on-year differences weakening and even moving into negative territory come 2022's end.

Only the CTS indices managed to finish 2022 in a better position than one year previously. All the others finished weaker, the distinction between them being at what point the year-on-year comparison moved from being positive to negative. For those indices that were based upon or were closer to spot rates, their changeover occurred around the halfway point of 2022, the subsequent negatives ultimately outweighing the positives that had come before. For those closer to or based upon less volatile contract rates, the changeover was (much) later with the negatives only at the start of a downward cycle.

Rate Indices developments

	'22/'21	'21/'20	'20/'19	2022	2021	2020
CTS (Europe export, 7 trades)	+41%	+56%	+11%	157	111	71
CTS (Europe import, 7 trades)	+99%	+18%	+2%	153	77	65
SCFI (Far East export, 9 trades)	-10%	+210%	+51%	3,418	3,791	1,224
CCFI (Far East export, 9 trades)	+7%	+185%	+11%	2,798	2,616	917
WCI (11 East-West trades)	-16%	+250%	+53%	6,377	7,586	2,170

All are composite annual averages. CTS = Container Trade Statistics; SCFI = Shanghai Containerized Freight Index relates to overall; CCFI = China Containerized Freight Index; WCI = World Container Index.

COSTS

Unfortunately, as rates showed a mixed yet underlying weakening picture, bunker fuel rose considerably. Exacerbated by the Ukraine/Russia conflict, which caused much disruption in the wider energy markets, and not just those related to oil, bunker prices had been rising steadily throughout 2021 and continued

to do so until the third quarter of 2022. Thereafter, they softened sufficiently so that the year-end situation was weaker than the year-start. Still, across all twelve months, the averages of the year-on-year differences were strongly up.

Development of annual average bunker prices

	HFO			VLSFO		
	'22/'21	2022	2021	'22/'21	2022	2021
Average	+38%	579	421	+50%	795	530
Rotterdam	+29%	517	400	+44%	736	510
Singapore	+26%	529	420	+50%	808	538
Houston	+40%	572	409	+46%	757	519
Long Beach	+54%	698	454	+59%	878	553
Hong Kong	+29%	556	430	+54%	821	534

Source: Ship & Bunker

Charter rates followed a similar pattern to those elements already summarised. They continued the rise that started in the course of 2021 through to the mid-point of 2022, whereupon they softened before fairly collapsing over the final quarter of the year. These evolutions were masked by the annual averages, for multiple charter rate indices still showed strong development of between twenty-one and thirty-nine percent (again, across the whole year). As a result, they represented the third consecutive year of growth with the composite index suggesting charter rates were approaching eight times what they had been just five years earlier.

The late 2022 collapse of charter rates came as cargoes softened as more shipping capacity came online. This led to an overcapacity situation along the main trades and ultimately to the withdrawal of not only individual services but also some of the new carriers who had sprung up, many of whom had taken smaller vessels at inflated rates when initiating their services. Ships that were used to ensure these closed services were returned to their owners.

Development of annual average charter indices

Index	'22/'21	'21/'20	'20/'19	2022	2021	2020
Index	+30%	+334%	+6%	770	591	136
BOXi	+21%	+371%	+6%	475	391	83
Contex	+30%	+358%	+5%	2,580	1,991	435
Harpex	+33%	+295%	+6%	3,504	2,638	668
HRCI	+39%	+315%	+5%	4,296	3,095	746

Overview index (top row) based upon average of individual index scores with 2017 set as 100

For two generic capacity classes of ships, newbuild prices also continued the pattern of consistent increase set in 2021 before settling down for the final third of 2022. As a result, over the course of the latter year, the newbuild price of a 23,000 TEU containership had averaged USD 207 million, which was nearly one quarter more than the average for 2021. Despite prices for 2,750 TEU ships actually slipping back a little in the final months of 2022, over the whole year, at an average of USD 40-41 million, they were a fifth more than 2021.

RESULTS

At the end of 2022, a selection of carriers who combined to control around seventy percent of global container shipping capacity built upon the spectacular gains they enjoyed in 2021. This was despite their carryings contracting by five percent so that they were even lower than those seen in COVID-afflicted 2020.

The container liner revenue generated by this group increased by nearly a quarter over 2021 to USD 325 billion. Operating result performed even better, relatively speaking, with a twenty-eight percent gain to USD 170 billion whilst net result was even better again growing by twenty-nine percent to exceed USD 140 billion.

With the carriers making more money, but shipping less cargo, the financial returns per container all improved by between twenty-eight and thirty-six percent. Revenue per TEU came in at USD 2,627, of which USD 1,150 was turned into pure profit.

Major container carriers, summary performance figures

Year	'22/'21	2022	2021	2020	2016
Revenue	23%	324,939	264,114	134,173	93,097
Operating profit	28%	169,754	132,896	24,090	-2,607
Net Result	29%	140,494	108,697	14,034	-7,470
Liftings (TEU x 1,000)	-5%	122,121	128,292	124,418	103,830
Revenue per TEU	28%	2,627	2,059	1,078	897
Op. Profit per TEU	33%	1,382	1,036	194	-25
Net Result/TEU	36%	1,150	847	113	-72

Based upon data sourced from: CMA CGM, CoscoSL, Eimskip\*, Evergreen, FES-Co, Hapag-Lloyd, HMM, Maersk, Matson, ONE, RCL, Samudera, SITC, Wan Hai, Yang Ming and ZIM, accounting for an average of 70% of globally operated TEU capacity. Financial figures in USD x million, excepting per TEU which are USD x 1. Revenue and operating results are container liner activities, or as close as possible, net results are consolidated group. ONE is based upon financial year ending March 31 the following year. Liftings and succeeding per TEU figures include estimates for Eimskip at between 187,000-208,000 TEU.

So, despite the generally weakening market dynamics of 2022, the carriers still managed to make money. In fact, they managed to make a lot more than they did in 2021, a year which Dynamar had already described as being one of "Champagne and Supernovas". Clearly, the momentum built up since mid-2021 was of sufficient weight to carry the market well into 2022. And although the returns were weakening, it was only in

the final quarter of 2022 that one carrier and only one started reporting a loss for the trimester, this number doubling for the subsequent quarter (1Q 2023).

In all these contexts, for the container carriers to return a net result that was still twenty-nine percent better than that of an already abnormal 2021 result surpasses any superlatives. In fact, "Champagne and Supernovas" might, in retrospect, appear premature, but this ignores the underlying picture that developed as 2022 progressed with a variety of the market fundamentals weakening. As such, 2023 looks very much like a year presaging a period of transition. Whether that is to a period of normalised market dynamics, financial returns or losses, or something else entirely, remains to be seen.

Leading container carriers, aggregate annual results, net

Year	Total
2022	140,494
2021	108,697
2020	14,034
2019	1,492
2018	2,580
Total 2018-2022	267,297
Average 2018-2022	53,459

Based upon data sourced from: CMA CGM, CoscoSL, Eimskip, Evergreen, FESCo, Hapag-Lloyd, HMM, Maersk, Matson, ONE, RCL, Samudera, SITC, Wan Hai, Yang Ming and ZIM. Figures are USD million.

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**Figure 1**  
**BUNKER MARKET PRICE FOR HFO (380 CST) AND VLSFO 2021**  
**(USD/ton)**

Date	Heavy Fuel Oil (HFO)					Very Low Sulphur Fuel Oil (VLSFO)					
	Rotterdam	Singapore	Houston	Long Beach	Hong Kong	Rotterdam	Singapore	Houston	Long Beach	Hong Kong	Santos
6-Jan-22	447	457	472	500	459	570	636	588	650	629	612
13-Jan-22	466	479	489	512	473	595	675	613	676	651	675
20-Jan-22	492	508	529	532	507	655	698	646	699	715	694
27-Jan-22	506	513	539	534	534	653	677	662	704	690	673
3-Feb-22	510	527	550	547	538	665	692	683	736	701	686
10-Feb-22	510	513	551	559	539	677	718	696	747	719	719
17-Feb-22	524	533	555	568	540	694	744	707	766	736	738
24-Feb-22	530	539	581	584	560	700	752	734	769	758	730
3-Mar-22	585	588	629	629	638	802	851	805	835	888	856
10-Mar-22	743	727	795	681	705	1,043	1,031	1,012	936	965	986
17-Mar-22	628	614	696	690	647	817	826	863	825	843	816
25-Mar-22	677	680	741	733	668	911	897	938	965	889	912
31-Mar-22	681	682	692	718	683	885	880	911	955	875	903
7-Apr-22	668	707	667	772	690	880	870	882	929	854	906
14-Apr-22	632	735	697	768	697	825	853	898	927	851	888
21-Apr-22	644	759	719	778	727	869	882	894	949	881	918
28-Apr-22	626	744	704	778	789	832	844	814	923	866	896
5-May-22	635	773	730	805	824	836	871	849	997	926	909
12-May-22	615	670	714	809	726	784	848	832	997	879	896
19-May-22	652	688	724	826	752	842	932	864	1,010	943	966
25-May-22	658	655	711	816	731	830	955	896	1,005	965	962
2-Jun-22	667	643	717	812	689	896	1,118	951	1,085	1,122	1,057
9-Jun-22	638	617	766	830	657	976	1,131	964	1,216	1,188	1,096
16-Jun-22	651	640	750	844	656	915	1,110	949	1,174	1,165	1,076
23-Jun-22	583	580	692	830	638	878	1,075	915	1,204	1,151	1,026
30-Jun-22	589	610	687	754	648	914	1,118	899	1,168	1,150	1,070
7-Jul-22	507	514	596	672	550	860	1,080	836	1,103	1,106	1,023
14-Jul-22	455	472	566	625	495	786	1,005	814	1,054	1,025	958
21-Jul-22	477	489	598	568	499	803	997	840	993	995	836
28-Jul-22	481	483	612	556	512	782	890	822	961	874	857
4-Aug-22	502	503	612	544	533	744	810	790	938	799	787
11-Aug-22	493	507	602	5,369	513	720	746	750	851	777	761
18-Aug-22	513	514	559	568	547	717	736	731	825	750	755
25-Aug-22	531	519	577	572	561	751	785	760	819	780	802
1-Sep-22	503	477	541	560	528	714	742	740	861	771	760
8-Sep-22	428	438	596	541	478	686	693	692	819	714	709
15-Sep-22	439	419	479	427	460	673	700	711	864	728	726
22-Sep-22	442	409	451	515	439	673	708	667	782	717	732
29-Sep-22	410	387	408	460	412	619	671	620	730	684	698
6-Oct-22	420	395	411	482	437	645	716	642	784	720	746
13-Oct-22	403	408	446	515	437	655	747	681	815	746	763
20-Oct-22	376	376	455	499	415	654	712	654	837	719	732
27-Oct-22	378	376	428	492	412	656	705	666	834	719	724
3-Nov-22	396	399	430	499	447	634	699	669	826	721	727
10-Nov-22	429	415	439	403	445	648	698	676	833	717	726
17-Nov-22	426	437	445	488	470	626	685	648	834	705	714
24-Nov-22	387	427	416	463	477	577	679	687	807	686	684
1-Dec-22	372	391	411	466	438	572	662	588	804	658	660
8-Dec-22	354	375	377	430	420	542	623	549	768	768	640
15-Dec-22	371	385	401	441	421	531	598	558	743	612	608
22-Dec-22	438	383	390	449	426	528	607	542	666	602	612
29-Dec-22	386	403	407	464	434	535	635	568	679	625	626
<b>Average</b>	<b>517</b>	<b>529</b>	<b>572</b>	<b>698</b>	<b>556</b>	<b>736</b>	<b>808</b>	<b>757</b>	<b>878</b>	<b>821</b>	<b>808</b>

**Figure 2**  
**10-YEAR DEVELOPMENT BUNKER PRICES**  
**(USD/ton, 380 cst)**

Year	Average	Change	Lowest	Highest
2022	517	29%	354	743
2021	400	62%	313	491
2020	247	-30%	129	302
2019	351	-12%	241	434
2018	401	32%	326	482
2017	305	44%	266	366
2016	212	-19%	104	302
2015	263	-52%	137	360
2014	534	-10%	323	598
2013	596	-7%	571	646

**Notes:**  
• Rotterdam Prices  
• 380 Cst

**Figure 3**  
**10-YEAR BUNKER/CRUDE RATIOS**  
**(Cost of bunkers per ton/price of crude per barrel)**

Year	Average	Increase	Lowest	Highest
2022	5.6	4%	3.8	8.1
2021	5.4	6%	4.6	7.1
2020	5.1	-6%	3.4	7.7
2019	5.4	-5%	4.8	6.9
2018	5.7	2%	5.2	6.3
2017	5.6	14%	5.2	5.9
2016	4.9	14%	2.6	6.0
2015	4.3	8%	3.0	6.0
2014	4.0	-15%	2.5	4.5
2013	5.5	-15%	5.2	5.8

**Notes:**  
• Brent - Light North Sea crude oil, average monthly forward prices/barrel  
• Bunker - 380 Cst (Centistoke, a viscosity unit), Rotterdam prices per ton

## TRADES

### GLOBAL CONTAINER TRADES

#### Russian rotations

##### Background

There was one constant geopolitical theme throughout virtually all of 2022 and beyond, namely the Russian invasion of its neighbouring country of Ukraine. Launched late in February 2022, it goes without saying that the tragedy of a *de facto* war taking place and all the human suffering that this entails is still uppermost in many a person's thoughts.

Alongside this very human element, plus the attendant damage and destruction to property and infrastructure, there has been substantial disruption to established trading patterns and relationships. By implication, this extends to container shipping, the impacts manifesting themselves at both local and international levels.

Understandably, once hostilities started, Ukraine immediately closed its main container ports of Odessa, Chornomorsk and Yuzhny. One containership, the 9,400 TEU "Joseph Schulte", operated by CMA CGM, found itself trapped and was still in Odessa come mid-2023.

With regards to the other protagonist, Russia, many countries around the world imposed even tighter sanctions on it than were already in place. These now made the ability of companies in those sanctioning countries to engage in business with Russia all but impossible, aside from humanitarian or essential supplies.

##### Leaving

Effectively, albeit not immediately, most major carriers stopped serving Russia as a regular port of call. This was even echoed by some carriers domiciled in countries taking an officially or nominally neutral stance. CoscoSL of China closed its Baltic Sea services to St. Petersburg, KMTC of South Korea ended its Vladivostok service whilst HMM, also of South Korea, closed its own operated services to Vostochny (Russia Far East) and St. Petersburg (Baltic Sea) links.

Substantially reduced volumes will undoubtedly have been important factor for many of the neutrally located operators in deciding to cut their services. At the same time, a (very) small number, from whichever side of the sanctions equation, kept some connectivity for essential cargoes as food, medical equipment and other humanitarian consignments.

Other operators did not completely cut Russia off with Russia-domiciled FESCO being the obvious exception. With so many leaving, it actually ended up expanding its service coverage.

Withdrawing from the Russian trade would have had substantial impacts on part or much of a carrier's business. Containerships (CMA CGM) and Unifeeder (DP World), for example, have their corporate and operational antecedents in the Baltic Sea.

Maersk's Seago Line was also very active in the Baltic Sea-Northwest Europe trade whilst the wider Maersk group also closed its Russia and Belarus offices and recovered as much of its container equipment from these areas as it could. Even its rail-based AE19 service that ran inland from the Russia Far East port of Vostochny to the Baltic Sea port of St. Petersburg was closed. It was replaced by alternative rail routes from China, via Kazakhstan, into Georgia and then across the Black Sea to Constanta.

Those with port or terminal interests in Russia managed to negotiate exits, as in the cases of CMA CGM and Maersk affiliate APM Terminals (see Ports). For Maersk as a group, it reported the financial impacts of the conflict as being around USD 510 million upon its EBITDA, most of that coming from impairments surrounding the sale of its stake in Russia-based Global Ports.

##### Replacements and workarounds

However, the ban on conducting normal commercial business with or within Russia was by no means universal. Carriers from countries not applying sanctions were still free to trade, and for all the pressure, Russian ports still handled more than 4.3 million TEU in 2022.

Russia has not often been a destination on the strategic East-West routes. More usually it is at the end of feeder services. In reacting to the new trading situation, those carriers not constrained by sanctions actually started to serve Russia with a mixture of East-West, North/South and feeder connections.

Aside from Russia-based FESCO, who ended up carrying sixteen percent more cargo in 2022 (423,000 TEU), others, including newcomers, saw opportunities in the withdrawal of the big tonnage operators. Sky high freight rates provided further encouragement for the new entrants. In the opening quarter of 2023, it was reported that containers from China to St. Petersburg (Russia, Baltic) were carried for USD 4,000, whilst to elsewhere in North Europe, the rate was only EUR 900.

Overall, from March 2022 to March 2023, Dynamar noted nearly thirty new services launched (excluding those believed to be seasonal) that offered regional and/or intercontinental shipping connections with either Russia's Baltic Sea, Black Sea or Far East ports.

Not all these services offered massive capacity. The TransSinergia Turkey-Novorossiysk link started with a vessel of 250 TEU. It was, however, operated weekly, which was another aspect not universally offered. Transit LLC's service was launched as a fortnightly loop with Transmaster's being monthly for example. Neither did every service start with a cellular containership. The Neptune Logistics Russia Far East service was initiated with a 440 TEU multipurpose ship and FESCO's Turkey-Novorossiysk service used an 8,100-dwt general cargo ship.

##### An overland workaround

FESCO also launched an alternative option whereby containers were moved in/out of Russia by rail. Launched in April 2022, one particular operation offered rail connections to and from Russia with railheads in the Netherlands, Germany and Italy. After four months, it had already moved 3,000 containers via this service. Anecdotally, the other major rail route to Russia, this out of China and across Central Asia and offered by a number of operators, experienced increased demand such that it impacted transit times for certain sections of the route.

There are also justifiable question marks over the longevity of some of these links -as also experienced in the wider East-West trades- but even so, some were able to attract sufficient patronage to justify expansion. Modul's India-St. Petersburg loop added a second vessel and two further Indian ports of call around half a year after its mid-2022 launch. Ruscon's India-Novorossiysk service upgraded from one to four ships, enabling it to add calls to Jeddah and Ambarli and provide near weekly departures. Similarly, FESCO's Vietnam-Vladivostok service, also launched in mid-2022, was expanded five months later with a second ship of 750 TEU.

Early in 2023, another workaround, but this time for Ukraine, started to appear. A year after direct access to Ukrainian container ports had been cut off, two carriers developed all-water alternatives. Hapag-Lloyd began offering connections to the Danube River port of Izmail, which is on the Ukraine/Romania border about 110km from the Black Sea. This (sea-)river port was linked via transshipment over Romania's main port of Constanta. At around the same time, Maersk announced a similar via Constanta option to the Ukrainian River Danube port of Reni, a further 30-40km upstream.

#### New Russia connections

Who (sector)	Service	When
<b>Baltic Sea</b>		
FESCO	intra-Baltic (Kaliningrad-St. Petersburg)	Jan-23
Hainan Yangpu New Shg	China-Baltic (St. Petersburg)	Mar-23
Modul	ECSA-Baltic (St. Petersburg)	Mar-23
Modul	India-Baltic (St. Petersburg)	Jun-22
OVP Shipping/Transfar/MAS	China-Baltic (St. Petersburg)	Mar-23
Reel Shipping	Egypt-Baltic (St. Petersburg)	Jan-23
Ruscon/Mountain Air (MAS)	Turkey-Baltic (St. Petersburg)	Jan-23
Transfar (via Safetrans)	China-Baltic (St. Petersburg)	Mar-23
Transit LLC	China-Baltic (St. Petersburg)	Mar-23
Transmasters	China-Baltic (Ust-Luga, St. Petersburg)	Nov-22
<b>Black Sea</b>		
FESCO	India-Black Sea (Novorossiysk)	Feb-23
FESCO	China-Black Sea (Novorossiysk)	Nov-22
FESCO	Turkey-Black Sea (Novorossiysk)	Mar-22
Medkon Lines	Turkey-Black Sea (Novorossiysk)	Jul-22
OVP Shipping/Transfar	China-Black Sea (Novorossiysk)	Dec-22
RC Line	India-Black Sea (Novorossiysk)	Aug-23
Sidra Line	Turkey-Black Sea (Novorossiysk)	Dec-22
Transcontainer	India-Black Sea (Novorossiysk)	Jul-22
TransSinergia	Turkey-Black Sea (Novorossiysk)	Oct-22
Vistar Shipping	India-Black Sea (Novorossiysk)	Mar-23
<b>Russia Far East</b>		
e-Shipping	China/S.Korea-Russia (Vladivostok)	Mar-23
FESCO	Vietnam-Russia FE (Vladivostok)	May-22
Global Field Line	China-Russia FE (Vladivostok)	Aug-22
Hub Shipping	China-Russia FE (Vladivostok)	Dec-22
Inteco Lines	China-Russia FE (Vladivostok)*	Aug-22
Neptune Logistics	China-Russia FE (Vladivostok)	Oct-22
Sinokor	China/S.Korea-Russia (Vladivostok)	Aug-22
Swift Line	China-Russia FE (Vostochny)	Jun-22

\*2x shuttles. All services up to end 1Q 2023. Excludes seasonal reefer services of which there are three (1x Arkas; 2x MSC)

#### Impacts still

Disruption to shipping was immediate once the conflict erupted. Around five weeks after the fighting had started, the port of Rotterdam reported that around 4,500 containers of Russia-bound cargoes had been set aside for physical inspection. In context, this snapshot of one point in time from just one port was still more than one percent of the throughput for all of Russia's ports in 2022. All along the supply chain, thousands of containers had to endure delays and the costs that would be incumbent with that, without much of a guarantee the boxes would arrive at their destination at all, let alone return.

With fighting continuing and sanctions on Russia widening and deepening throughout, in 2022, containerised handlings through Russia's ports dropped by approaching a quarter to 4.3 million TEU. Its previously main international gateways in the Baltic Sea lost fifty-seven percent of their 2021 handlings with Black Sea outlets down nine percent. Suggesting a certain amount of supply-chain realignment, Russia's Far East ports saw their throughputs increase by eight percent to become the busiest coastline of the country.

#### Development of Russia port throughput by coastline

Trade	Share %	Growth '22/'21	2022 TEU	2021 TEU	2020 TEU
Baltic	25%	-57%	1,070,200	2,508,800	2,430,700
Far East	53%	8%	2,290,500	2,115,700	1,924,700
Black Sea	18%	-9%	765,200	844,000	793,100
Arctic	4%	15%	180,600	156,800	146,500
Caspian Sea	0%	147%	7,400	3,000	2,900
<b>Total</b>	<b>100%</b>	<b>-23%</b>	<b>4,313,900</b>	<b>5,628,300</b>	<b>5,297,900</b>

Source: Seaneews/Portstat

#### Global container trades carryings

According to Container Trade Statistics (CTS), who receives data from most of the players in the liner industry, containerised trade fell back noticeably in 2022. After the bounce back of 2021, it was to be expected. At 173 million TEU, it was still only +1.9% more than pre-COVID 2019's figures. In comparison with 2021's figure, 2022 was four percent down. Intercontinental cargoes shrank by a sharp five percent whilst intra-regional movements saw a milder two percent reduction.

#### Global Container Volumes, TEU

	'22/'21	2022	2021	2020
Intercontinental	-5%	112,492,700	118,526,900	110,523,300
Intra-regional	-2%	60,789,900	62,253,400	58,345,100
<b>Total</b>	<b>-4%</b>	<b>173,282,700</b>	<b>180,780,300</b>	<b>168,868,500</b>
Share intercont	-	65%	66%	65%
Share intra-reg	-	35%	34%	35%

Source: Container Trades Statistics

#### EAST-WEST TRADES

##### Bubble well and truly burst...

The good times seen in the second half of 2021 continued into 2022, but were not expected to last for the whole calendar year. This is indeed what turned out to be the case.

Still, with the lacks of vessel and container equipment capacity and the attendant delays managing to last for a fifteen month period to mid-2022, at least twenty container shipping operations were initiated by logistics companies and/or cargo interests. These new services ended up ranging from something temporary, a collection of a few spot-chartered trips at most, to something more structural.

Alongside completely new entrants, some carriers that had previously concentrated upon the North/South or regional routes now moved onto the strategic East-West trades. T.S. Lines joining with the previously regionally centred China United Lines on both the Transpacific and Far East-Europe trades was one notable example. SeaLead Shipping of Singapore entered the Transpacific (East Coast) trade early in 2022, this following its entrance to the West Coast route around five/six months earlier. Transfar Shipping, which includes Chinese online retailer Alibaba as a minor shareholder, launched a China-US East Coast service (not in the accompanying table).

In amongst all this, the established East-West carriers were also busy adding new connections. Along the Transpacific trade, by mid-2022, ZIM had launched its "ZIM eCommerce Baltimore Express", MSC its "Zephyr", Wan Hai its "AA9" and Maersk the "TP28", amongst a number of others.

However, when the market fundamentals changed even slightly, those who had come in as new entrants, dependent as they were upon smaller chartered-in and often non-container tonnage, were most at risk. They had to contend with the immediate realities of freight rates falling whilst having to pay for charter rates that were agreed for extended periods during a market peak.

#### Cargo and logistics interests moving into shipping

Who (sector)	Trade and actions	When
Carrier53 (Lotus, box lessor)	Transpacific, chartered MPP tonnage to carry 53' containers	Aug-22
Tailwind Shg (Lidl, retailer)	Far East-Europe, purchased small containerhips	Jun-22
Fastic Logistics (logistics)	Far East-Europe, chartered MPP tonnage, monthly, poss. Temporary	Feb-22
Fedex Logistics (logistics)	Transpacific, 3x vessels chartered to carry 53' containers	Jan-22
Uniserive (logistics)	Far East-Europe, established Ellerman City Liners	Dec-21
Costco (retailer)	Transpacific, chartering 3x container-ships (800-1,000 TEU) for 12-months	Oct-21
IKEA (retailer)	Far East-Europe, chartered in container-ships, bought containers	Sep-21
Kalypso Nav. (Rif Line, logistics)	Far East-Europe, 2x 1,200 TEU for fortnightly service	Sep-21
Schneider National (trucking)	Transpacific, chartering MPP tonnage to move 53' boxes	Sep-21
Cainiao Network (logistics)	intra-NE Asia, launched own 6x weekly service	Aug-21
FIELDS (logistics)	intra-Baltic, launched own 2x weekly loop	Aug-21
Walmart (retailer)	Transpacific, chartered in (unspecified) ships	Aug-21
Canadian Tire (retailer)	Transpacific, chartered three ships carrying 2,000 containers	Jul-21
Home Depot (retailer)	Transpacific, chartered in (at least one) ship	Jun-21
DKT Allseas (logistics)	Far East-Europe, chartered in multiple containership trips	May-21
DSV (logistics)	Far East-Europe, chartered in 1x 1,800 TEU trip	May-21
Bollere Logistics (logistics)	Far East-Europe, chartered in 4x MPP vessels	Feb-21
Rio Tinto (mining)	SE Asia-Australia, launched own service with 600 TEU MPP	Feb-21
Geodis (logistics)	Far East-Europe, chartered in 1x 1,000 TEU trip	Jan-21
DSV (logistics)	Far East-Europe, chartered 3x MPP vessel trips	Dec-20

It was precisely these adverse dynamics that were a major reason for the ultimate collapse of Allseas Shipping and for Focus Container Line on the Australia-New Zealand route). These pressures were echoed by CU Lines when it closed down the joint Far East and Europe "AEX" service operated together with T.S. Lines. Even for established carriers, with their strategic fleets better protected from charter rate spikes, the dampened demand resulted in a rationalisation of networks.

In addition, one of the very first companies that entered the field from outside, BAL Container Line, also started winding down its operations in 2022 so that come the start of 2023, it had returned all its vessels. In 2021 it had carried 68,000 TEU and considering it nearly matched that in the first half of 2022 alone, the collapse of the Transpacific (Mexico) trade it served, must have been dramatic.

Undoubtedly, a great number of the new operations opened in 2021 and 2022 were never going to be anything more than temporary, borne as they were out of an attempt to secure immediate capacity. However, some of the new entrants have shown signs of wanting to be in the business more than just to solve (or gain from) a temporary problem.

SeaLead Shipping, an established regional carrier before entering the Transpacific trade, opened a Transatlantic (Mediterranean) service after closing its Transpacific operations. Ellerman City Liners essentially switched from a Far East-Europe loop to a Transatlantic one and has also launched regional services too. Kalypso Navigation of Italy also started a Transatlantic service and opened intra-Mediterranean connections whilst still staying on the Far East-Europe route. All these developments occurred over late the 2022 and early 2023 period (although Kalypso closed its Transatlantic loop down as mid-2023 approached).

#### Service closures East-West routes

Who (sector)	Trade - service + action	When
2M	Far East-Europe - AE1/Shogun suspended	Mar-23
Transfar Shipping	Transpacific (East Coast) - service closed	Mar-23
Wan Hai	Transpacific (East Coast) - AA9 closed	Mar-23
ZIM	Transpacific (West Coast) - ZEX closed	Mar-23
Ellerman City Liners*	Far East-Europe - service closed	Feb-23
Hapag-Lloyd	Far East-Europe - EGX closed	Feb-23
Maersk	Transpacific (East Coast) - TP20 closed	Feb-23
SeaLead Shipping*	Transpacific (West Coast) - service closed	Feb-23
CoscoSL	Transpacific (West Coast) - CENX closed	Dec-22
CU Lines/TS Lines	Far East-Europe - AEX closed	Dec-22
ZIM	Transpacific (East Coast) - ZSE closed	Nov-22
2M	Transpacific (West Coast) - TP1/Maple** & TP9/Eagle** merged	Oct-22
2M	Transpacific (West Coast) - TP2/Jaguar & TP3/Sequoia merged	Oct-22
CMA CGM	Transpacific (West Coast) - Golden Gate Bridge closed	Oct-22
CU Lines/TS Lines	Transpacific (West Coast) - TPX service closed	Oct-22
Maersk	Transpacific (East Coast) - TP28/TP20 merged	Oct-22
Maersk	Transpacific (West Coast) - TP7** suspended	Oct-22
Wan Hai	Transpacific (West Coast) - AA1 & AA2 closed	Oct-22
Matson	Transpacific (West Coast) - CCX cancelled	Sep-22

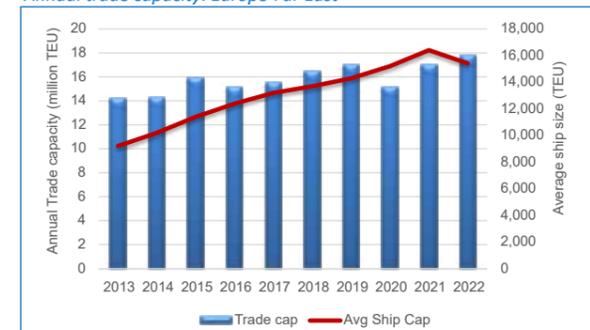
\*Carriers established Transatlantic services instead. \*\*Service already irregular/infrequent. No service name implies single service provider

#### Europe-Far East

Over the course of the year to mid-2022, the number of North Europe/Mediterranean-Far East services increased by six to thirty-three. The number of ships rose by forty-six units to 351. This comes out at an average of fewer than eight ships per new service. A standard weekly rotation would normally need twelve or thirteen ships so the implication is that some of the additional loops were either sailing slower than once per week and/or calling fewer ports than the hitherto standard loops.

The figures also pointed to another implication brought about by these newer services: the ships deployed were significantly smaller because the average capacity dropped over the space of a year by 1,000 TEU. Even so, Annual Trade Capacity still increased by four percent to 17.8 million TEU and in doing so, surpassed 2021's record.

#### Annual trade capacity: Europe-Far East



Survey conducted in July of each year

#### North Europe

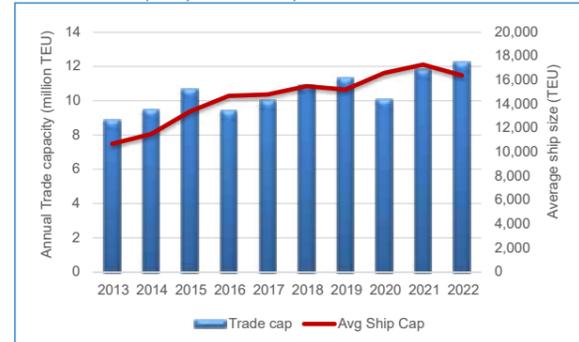
The specific North Europe route, numbered twenty-one services in 2022, a growth of three. The number of vessels deployed to the trade grew by thirteen, meaning the net gain was equivalent to four ships for each new service. This was only around one third of the usual complement per loop. Alongside, the vessels ensuring these services were much smaller and as a result, the overall average shipboard capacity was six percent and 900 TEU smaller at 16,400 TEU.

Despite these mitigating factors, the specific North Europe Annual Trade Capacity still posted three to four percent growth to 12.2 million TEU. This was, by quite a way, the largest ever recorded, beating the previous best of 11.8 million TEU seen in 2021.

There were new entrants to the trade. One was actually an evolution from irregular sailings initiated in the first half of 2021 by China United Lines (CU Lines). By 2022, it was offering a fortnightly loop together with T.S. Lines of Taiwan, more usually associated with Far East related North/South services.

Another entrant was completely new to direct vessel operations. That was Allseas Shipping, associated with logistics and agency company Allseas Global Logistics. In the first half of 2022, it launched its Far East-North Europe rotation including the rare ports, for this specific trade, of Liverpool (Irish Sea) and Greenock (Scotland). This operation deployed vessels of 1,700 TEU. However, this service later fell victim to the deadly combination of normalised freight rates whilst still having to pay peak charter rates.

Annual trade capacity: North Europe-Far East



Survey conducted in July of each year

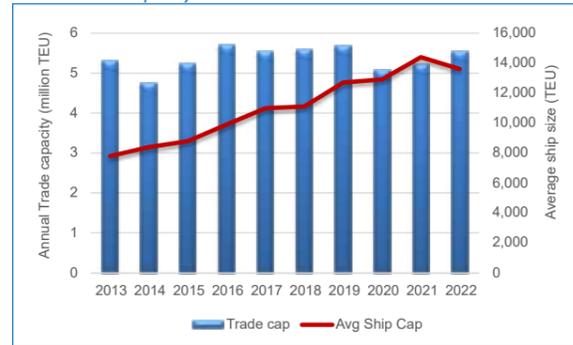
Another forwarder, UK-based Uniserve, established Ellerman City Liners late in 2021. This was used as the vehicle for a new service launched in 2022 between China, Vietnam and the UK. The creation of Ellerman City Liners recalled the Ellerman Line(s) name that had been associated with liner shipping from the late nineteenth century through to its retirement as a brand in 2004 when it was part of the Hamburg Süd group in 2004. Ellerman was followed by Tailwind Shipping, essentially part of European retailer Lidl's group. It entered later in 2022, principally to provide capacity for its own cargoes.

**Mediterranean**

Along the Mediterranean-Far East trade, service and vessel numbers were up (by two and twelve units respectively), average vessel capacity was down (by six percent and 800 TEU) and Annual Trade Capacity (ATC) managed to expand by over six percent to 5.5 million TEU. Whilst this followed the patterns of the North Europe route, for the Mediterranean, five other surveys had already returned higher ATC figures.

One of the new Mediterranean loops came from forwarder and logistics company, Rif Line of Italy, who established Kalypso Navigazione. Shortly after the mid-2021 trade capacity survey, it opened a fortnightly service between Shanghai, Civitavecchia and later, Salerno, with tonnage averaging around 2,000 TEU. The other extra loop was a standalone weekly service operated by ZIM who employed ships of 4,200 TEU, still small for the trade.

Annual trade capacity: Mediterranean-Far East



Survey conducted in July of each year

Late in 2022, Akkon Lines opened a new service between China and Turkey. It too was a newcomer to the deepsea trades having previously been an intra-Mediterranean operator. It sustained the service with a fleet of four ships of around 1,800 TEU.

**Volumes and Rates**

Europe-Far East volumes fell acutely in 2022 to 22.1 million TEU. This was the lowest figure seen since 2015's 21.9 million TEU. Both directions contracted in 2022, with the weaker eastbound leg to the Far East losing thirteen percent. As the dominant westbound direction fell by ten percent, it lost 639,000 TEU more than the eastbound direction. Although this reduced the imbalance, it was still a substantial 8.7 million TEU.

For the 2021 Trades Review, there was a suggestion of under capacity as dominant leg carryings numbered 17.1 million TEU whilst combined North Europe/Mediterranean Annual Trade Capacity only came to 16.3 million TEU. In other words, cargoes approximated to 105% of the available capacity. One year later, with headhaul volumes shrinking to 15.5 million TEU and ATC rising to 17.8 million TEU, indicative utilisation was down to eighty-seven percent.

Looking at the monthly distribution of carryings, only January 2022 managed to maintain station in comparison with the same month of 2021. In general, 2022 became more difficult the further it went on, although there were signs of a softening in the deficits for November and December. However, the fortunes of the first and second halves of the year show how things got worse. The average monthly decline for the first half of 2022 was eight percent. For the second half, it was fourteen percent.

Europe/Mediterranean-Far East container trade, TEU

Month	'22/'21	2022	2021	2020
January	0%	2,110,900	2,103,100	2,179,500
February	-7%	1,667,600	1,800,600	1,312,100
March	-8%	1,970,900	2,137,000	1,911,900
April	-11%	1,871,200	2,097,800	1,789,200
May	-10%	1,931,000	2,147,500	1,898,800
June	-13%	1,857,900	2,133,100	1,982,100
July	-7%	1,958,600	2,105,100	2,183,400
August	-8%	1,879,300	2,045,000	2,157,600
September	-18%	1,637,300	2,002,600	2,171,200
October	-21%	1,675,300	2,126,000	2,132,200
November	-16%	1,706,600	2,032,300	2,114,700
December	-12%	1,832,000	2,089,600	2,145,500
<b>Total</b>	<b>-11%</b>	<b>22,098,300</b>	<b>24,819,800</b>	<b>23,978,200</b>
- of which EB	-13%	6,709,800	7,751,000	8,209,700
- of which WB	-10%	15,388,500	17,068,800	15,768,500
Europe deficit	-7%	8,678,600	9,317,800	7,558,900

Source: Container Trades Statistics

Europe-Far East rates went supernova all through 2021 and, based upon the Ningbo Containerized Freight Index (NCFI), actually reached their peak at the start of 2022. From there, they consistently softened so that come May/June, they were unchanged year-on-year. From then on, they experienced an

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accelerating decline, made worse as the rates for 2022 were weakening whilst their comparatives of twelve months earlier were strengthening.

Looking at the North Europe route, the NCFI rates opened sixty-seven percent better than one year earlier but finished the year some eighty-seven percent worse off. The absolute differences were much starker. That January (2022) year-on-year growth was equivalent to USD 2,341; the December decline was equivalent to USD 4,945. On average, each month, rates were down by a quarter.

For the parallel trade to the (West) Mediterranean, the patterns were similar. Rates opened the year some sixty-six percent better but finished seventy-six percent worse off. These translated into differences that were USD 2,301 up and USD 4,260 down. The average difference for the whole year were still sharp but softer than for North Europe, being fifteen percent down.

**NCFI - 40' westbound freight rates Ningbo to Europe**

Month	North Europe			W.Mediterranean		
	'22/'21	2022	2021	'22/'21	2022	2021
January	67%	5,846	3,505	66%	5,789	3,488
February	69%	5,588	3,314	69%	5,610	3,317
March	71%	4,943	2,890	74%	5,254	3,011
April	32%	4,379	3,322	49%	5,045	3,397
May	1%	4,272	4,238	17%	4,968	4,239
June	-16%	4,210	5,020	1%	4,887	4,835
July	-30%	3,959	5,695	-13%	4,570	5,231
August	-41%	3,502	5,895	-28%	3,879	5,355
September	-59%	2,454	5,942	-57%	2,453	5,729
October	-72%	1,627	5,776	-67%	1,812	5,567
November	-84%	873	5,525	-74%	1,387	5,326
December	-87%	712	5,657	-76%	1,325	5,585
<b>Average</b>	<b>-25%</b>	<b>3,530</b>	<b>4,731</b>	<b>-15%</b>	<b>3,915</b>	<b>4,590</b>
High	-2%	5,846	5,942	1%	5,789	5,729
Low	-75%	712	2,890	-56%	1,325	3,011
Variance	68%	5,135	3,052	64%	4,465	2,718

Monthly averages based upon data sourced from Ningbo Containerised Freight Index. Rates are USD per 40', based upon export CIF, CY to CY and include surcharges

The World Container Index exhibited similar patterns as the NCFI. To North Europe, the average monthly contraction was twenty-four percent after beginning at fifty-six percent better off and finishing eighty-seven percent worse off. However, in contrast to the NCFI, the rates weakened consistently from month-to-month.

The changes, whilst exceptional, were still not as extreme along the Mediterranean trade as they were for North Europe. They started off strongly at forty-nine percent better off, and even performed slightly better thereafter. This was at a relative level for they were already weakening absolutely (by USD). As a result, they finished 2022 seventy-seven percent worse off and averaged sixteen percent weaker.

**WCI - 40' westbound spot rates Shanghai to Rotterdam/Genoa**

Month	Rotterdam (N.Europe)			Genoa (Med)		
	'22/'21	2022	2021	'22/'21	2022	2021
January	56%	13,857	8,876	49%	12,791	8,580
February	60%	13,647	8,522	47%	12,741	8,667
March	53%	12,033	7,869	52%	12,396	8,155
April	36%	10,496	7,744	55%	12,077	7,813
May	5%	9,835	9,347	28%	11,750	9,154
June	-13%	9,631	11,039	6%	11,324	10,666
July	-29%	9,177	12,874	-16%	10,477	12,516
August	-38%	8,553	13,692	-32%	8,875	13,128
September	-54%	6,640	14,314	-49%	6,969	13,556
October	-71%	4,201	14,507	-66%	4,587	13,546
November	-79%	2,920	13,619	-72%	3,552	12,567
December	-87%	1,750	13,591	-77%	2,932	12,758
<b>Average</b>	<b>-24%</b>	<b>8,562</b>	<b>11,333</b>	<b>-16%</b>	<b>9,206</b>	<b>10,925</b>
High	-4%	13,857	14,507	-6%	12,791	13,556
Low	-77%	1,750	7,744	-62%	2,932	7,813
Variance	79%	12,107	6,763	72%	9,859	5,743

Monthly averages based upon data sourced from World Container Index for tariff rates with validity of 7-30 days.

The Container Trade Statistics' freight index (based upon manifest freight, expressed as an index with 100 set at 2008) does not usually exhibit the same extremes as the other indices. Even so, the patterns were still generally repeated, especially on the westbound trade to North Europe/Mediterranean. These still showed rates developing strongly at the start of 2022 and weakening considerably come the end. Interestingly, the average monthly index was still stronger in 2022 at 240. This was probably helped by the changeover from comparative growth to decline starting a couple of months later than the previous indices.

The return eastbound trade was much weaker though. The growth/decline changeover occurred in April and by September 2022, the index had dropped below the 100 mark to a level not seen since the end of 2020.

**CTS - Europe/Mediterranean-Far East rate indices**

Month	Westbound			Eastbound		
	'22/'21	2022	2021	'22/'21	2022	2021
January	76%	294	167	15%	116	101
February	78%	299	168	8%	113	105
March	85%	278	150	4%	110	106
April	76%	277	157	-3%	109	112
May	49%	276	185	-10%	109	121
June	32%	279	211	-12%	107	122
July	11%	273	247	-13%	107	123
August	0%	258	259	-15%	104	122
September	-18%	223	271	-16%	99	118
October	-36%	174	273	-18%	93	114
November	-48%	137	264	-21%	90	114
December	-58%	113	266	-21%	90	114
<b>Average</b>	<b>10%</b>	<b>240</b>	<b>218</b>	<b>-9%</b>	<b>104</b>	<b>114</b>
High	10%	299	273	-6%	116	123
Low	-25%	113	150	-11%	90	101
Variance	51%	186	123	18%	26	22

Source: Container Trades Statistics

**Transatlantic**

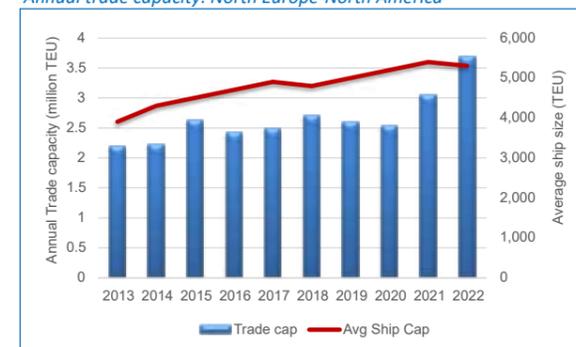
**North Europe-North America**

Having contracted slightly in 2019 and 2020, the Transatlantic (North Europe) trade then experienced two consecutive twenty percent spikes in Annual Trade Capacity adding more than 1.1 million TEU to finish on an absolute record of 3.7 million TEU. The specific growth for 2022 came from two extra services, net, and twenty extra ships. These developments outweighed average vessel capacity reducing by 100 TEU.

The services saw two launched by MSC outside of the 2M arrangement. One was the "Scan Baltic" which offered a rare direct connection between the Baltic Sea and US East Coast. The other was the fortnightly "Boston Express". Hapag-Lloyd also launched a standalone service, the "AT3" to Montreal, a

route along which it and its antecedents have traditionally been strong in. Moving out of the service list in 2022 was ZIM's "ZNE".

**Annual trade capacity: North Europe-North America**



Surveys conducted in December of each year

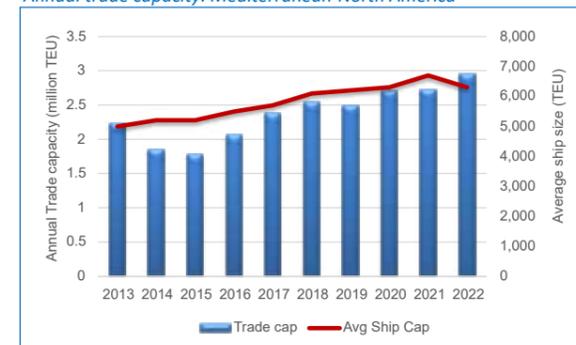
Postdating the 2022 survey, early in 2023, relative shipping newcomer Ellerman City Lines closed down its Far East-Europe loop and redeployed the tonnage to (help) establish a Transatlantic service. This connected with North Europe, using vessels that were still small ranging from 2,500 TEU up to 5,100 TEU.

**Mediterranean-North America**

The Transatlantic (Mediterranean) trade exhibited a substantial Annual Trade Capacity growth of nine percent to exceed 2.9 million TEU. Although there were two extra services, the deployed fleet only increased by one ship to 136 units whilst their average capacity fell by 400 TEU (to 6,300 TEU).

Of the underlying service changes, Hapag-Lloyd closed its twelve-ship-strong product to the west coast of North America. Coming in during the year, was the CMA CGM/CoscoSL "Med-Gulf" launched in the final third of the year. Another new entrant was MSC's "Turkey to USA" loop.

**Annual trade capacity: Mediterranean-North America**



Surveys conducted in December of each year

**Volumes and Rates**

Although North Europe/Mediterranean-North America volumes shrank in 2022, they managed to limit the losses to three percent. This translated into a difference of 235,000 TEU as the total dipped under 8.1 million TEU. Of that total, 5.5 million TEU was sent along the headhaul westbound direction to North America, this being two percent down on 2021. With combined North Europe/Mediterranean Annual Trade Capacity growing by fifteen percent to 6.6 million TEU, what was previously an indicative occupancy rate of ninety-eight percent now fell to eighty-three percent. The imbalance between the headhaul and return legs stabilised at 2.9 million TEU.

**Europe-North America container trade, in TEU**

	'22/'21	2022	2021	2020
N.Eur+Med	-3%	8,078,000	8,313,500	7,663,200
- of which WB	-2%	5,502,000	5,627,800	5,010,900
- of which EB	-4%	2,576,100	2,685,700	2,652,300
Imbalance	-1%	2,925,900	2,942,200	2,358,600

Source: Container Trades Statistics

Despite these developments, freight rates remained firm along the specific North Europe trade at the very least, finishing the year better than how they started it. This was particularly so for westbound cargoes to North America. The average monthly improvement, when comparing back to the same month of the previous year, was an exceptional fifty-three percent. Even the return containers managed an average growth of twenty-five percent.

For both directions, the first five/six months of the year showed spectacular gains, with those for the remaining months still sound, albeit not as stratospheric. Although these rate performances do not automatically correlate with rising Annual Trade Capacity and a fall in volumes (which is what happened), the United States Coast East did suffer from congestion for sizeable portions of the year. This was principally a result of shippers and carriers switching Transpacific cargoes from the West Coast, which in turn put a strain on East Coast infrastructure.

**WCI - 40' westbound spot rates Rotterdam-New York**

Month	Westbound (to NYC)			Eastbound (to RTM)		
	'22/'21	2022	2021	'22/'21	2022	2021
January	183%	6,280	2,217	88%	1,244	661
February	184%	6,485	2,287	65%	1,231	747
March	172%	6,587	2,424	58%	1,168	739
April	149%	6,927	2,777	53%	1,182	772
May	102%	7,197	3,570	32%	1,182	893
June	64%	7,002	4,265	12%	1,196	1,070
July	29%	6,894	5,339	5%	1,267	1,210
August	8%	6,936	6,426	9%	1,290	1,181
September	11%	6,782	6,094	10%	1,270	1,152
October	18%	7,309	6,182	13%	1,317	1,162
November	18%	7,337	6,194	11%	1,320	1,187
December	13%	7,084	6,270	9%	1,288	1,186
<b>Average</b>	<b>53%</b>	<b>6,902</b>	<b>4,503</b>	<b>25%</b>	<b>1,246</b>	<b>997</b>
High	14%	7,337	6,426	9%	1,320	1,210
Low	183%	6,280	2,217	77%	1,168	661
Variance	-75%	1,057	4,209	-72%	152	549

Monthly averages based upon data sourced from World Container Index for tariff rates with validity of 7-30 days.

The rates indices from Container Trades Statistics showed spectacular growth up to the third quarter of the year before softening slightly thereafter. This was the case for both directions, and as with the WCI figures, the year-end indices were much stronger than the year start. Despite that, the eastbound trade to Europe still failed to breach the 100 points barrier, although it came quite close. This is also the more muted direction for rate developments, with these averaging twenty-eight percent improvements each month when compared with the same month of 2021. For the headhaul route the monthly average was a much stronger seventy-one percent with the highest a remarkable 165% gain and the lowest still a healthy twenty percent.

CTS - Europe-North America rate indices

Month	Westbound			Eastbound		
	'22/'21	2022	2021	'22/'21	2022	2021
January	165%	223	84	19%	75	63
February	165%	233	88	24%	77	62
March	144%	244	100	22%	78	64
April	120%	270	123	21%	81	67
May	94%	287	148	26%	86	68
June	78%	290	163	30%	87	67
July	63%	292	179	38%	95	69
August	56%	293	188	37%	97	71
September	53%	291	190	31%	94	72
October	39%	284	204	30%	95	73
November	28%	274	214	30%	95	73
December	20%	261	217	25%	94	75
Average	71%	270	158	28%	88	69
High	35%	293	217	29%	97	75
Low	165%	223	84	21%	75	62
Variance	-47%	70	133	69%	22	13

Source: Container Trades Statistics

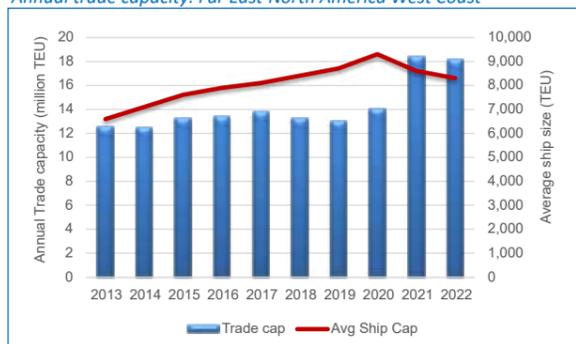
Transpacific

Far East-North America West Coast

As of September 2022, in comparison with around a year earlier, the Transpacific (West Coast) trade saw Annual Trade Capacity contract by one percent to 18.1 million TEU. This followed 2021's growth of thirty-one percent. The 2022 contraction came despite there being six new services to bring to the total to sixty-eight.

However, and not reflected in the relevant table, there were more service loops running slower than once per week than in 2021. Each service in 2022 operated at an average of one sailing every 8.2 days. In 2021, that was 7.1 days. This resulted in around fifty-eight sailings per week in 2022, compared with over sixty-one in 2021. When the reduced average vessel capacity of 300 TEU (-3%) is factored in as well, this helps explain why Annual Trade Capacity reduced despite the extra services.

Annual trade capacity: Far East-North America West Coast



Survey conducted in August/September of each year

Far East-North America East Coast

Influenced by the congested West Coast - this situation lasting for much of the year- Annual Trade Capacity to the East Coast of North America grew by twenty-four percent to 9.9 million TEU. This was, by far, the largest figure noted as 2021's result was already the previous best.

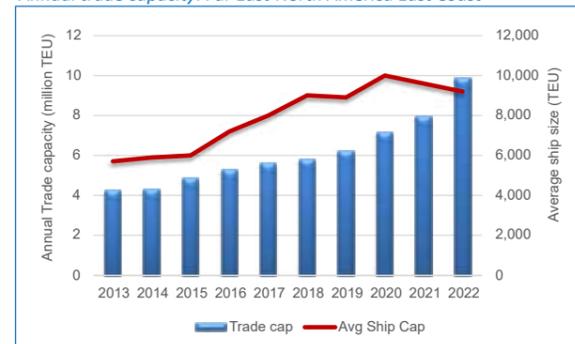
The growth of Annual Trade Capacity along the Transpacific (East Coast) trade lane came from seven extra services and a remarkable sixty extra ships. The rise in ATC was moderated, though, by average vessel capacity contracting by 400 TEU to 9,200 TEU (-4%).

The Transpacific (East Coast) route used to be a purely Alliances trade. However, between the 2020 and 2021 surveys, a number of standalone operations from carriers as Maersk ("TP20"), CoscoSL/OOCL ("VCE") and Wan Hai ("AA7") were established.

These were then joined in 2022 by the previously regionally centred SeaLead from Singapore who entered the trade via its "AEC" service. It had already moved into the Transpacific (West Coast) in the third quarter of 2021. ZIM also opened a new loop, this being the "ZIM eCommerce Baltimore Express", and was followed a few months later by MSC's "Zephyr".

Some services came and went within the space of a year. Transfar Shipping, which includes Chinese online retailer Alibaba amongst its shareholders, launched a China-US East Coast service early in 2022, but this was closed down around a year later. Also opening and closing at around the same times was Wan Hai's "AA9".

Annual trade capacity: Far East-North America East Coast



Survey conducted in August/September of each year

Volumes and Rates

All aspects of Transpacific containerised trade shrank by seven percent in 2022. This left a trade total of 28.0 million TEU of which 22.1 million TEU was in the headhaul direction to North America. Despite the reduced level of activity, these figures were still the second largest recorded. With both headhaul and return legs contracting by seven percent, the imbalance reduced by 1.2 million TEU. It was, though, still a massive 16.1 million TEU.

When looking at the headhaul trade volume (22.1 million TEU) against the combined Transpacific Annual Trade Capacity (28.0 million TEU), indicative utilisation fell to around seventy-nine percent. This was around eleven points down on the situation of one year previously.

Far East-North America container trade, in TEU

	'22/'21	2022	2021	2020
Total	-7%	28,016,900	30,161,000	27,465,500
- of which N.Am exp	-7%	5,928,800	6,377,700	7,304,300
- of which N.Am imp	-7%	22,088,100	23,783,300	20,161,300
N.Am deficit	-7%	16,159,300	17,405,600	12,857,000

Source: Container Trades Statistics

Thus, with volumes weakening and overall North America Annual Trade Capacity expanding, freight rates suffered. For both lanes, they still started 2022 strongly and even continued to rise for a few months, according to the Ningbo Containerized Freight Index. However, in May, an apparently accelerating reduction started so that at the end of the year, West Coast rates had dipped below USD 1,000 and were 70-80% lower than a year earlier.

Whilst this suggested more difficult times going forward -such a trend is difficult to reverse immediately- for the whole of 2022, the average monthly rate increases were still positive, albeit only slightly so for the West Coast. For the East Coast, and reflecting the switch of cargoes to that littoral and the resultant congestion, the average improvement was still a sound seven-teen percent.



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NCFI - 40' westbound freight rates Ningbo to North America

Month	US West Coast			US East Coast		
	'22/'21	2022	2021	'22/'21	2022	2021
January	103%	4,752	2,336	100%	3,478	1,740
February	114%	4,941	2,306	105%	3,569	1,739
March	120%	5,053	2,302	106%	3,640	1,764
April	107%	4,983	2,405	104%	3,696	1,809
May	79%	4,940	2,763	71%	3,544	2,071
June	47%	4,533	3,076	48%	3,426	2,317
July	16%	3,987	3,436	32%	3,255	2,467
August	-21%	3,178	4,028	10%	3,096	2,810
September	-59%	1,705	4,173	-19%	2,376	2,933
October	-75%	1,066	4,210	-38%	1,844	2,962
November	-80%	870	4,379	-59%	1,304	3,187
December	-82%	808	4,574	-70%	994	3,345
Average	2%	3,401	3,332	17%	2,852	2,429
High	10%	5,053	4,574	11%	3,696	3,345
Low	-65%	808	2,302	-43%	994	1,739
Variance	87%	4,245	2,272	68%	2,702	1,606

Monthly averages based upon data sourced from Ningbo Containerised Freight Index. Rates are USD per 40', based upon export CIF, CY to CY and include surcharges

World Container Index figures confirmed the patterns noted from the NCFI albeit with an ultimately negative average for monthly growth. To Los Angeles, rates reduced year-on-year by an average of eleven percent, despite there being an equal split between the first six months of rates growth and the second six months of negative development. The year started on a record USD 10,757/40' yet finished on a lowly USD 2,004. On the east coast to New York route, average monthly rates fell from USD 13,624 to USD 4,026 per 40'. In comparison with the west coast, they did manage to hold up slightly better with a monthly average of USD 9,637 being only six percent smaller than the previous year.

WCI - 40' westbound rates Shanghai to Los Angeles

Month	Los Angeles (USWC)			New York (USEC)		
	'22/'21	2022	2021	'22/'21	2022	2021
January	157%	10,757	4,186	108%	13,624	6,542
February	149%	10,680	4,292	101%	13,197	6,567
March	139%	10,229	4,284	86%	12,403	6,677
April	105%	8,738	4,267	74%	11,274	6,489
May	59%	8,659	5,453	54%	10,997	7,151
June	22%	8,260	6,793	21%	10,569	8,752
July	-25%	7,381	9,797	-17%	10,002	12,112
August	-38%	6,617	10,721	-29%	9,701	13,659
September	-64%	4,332	12,020	-47%	8,343	15,599
October	-76%	2,619	10,986	-56%	6,279	14,157
November	-78%	2,206	9,885	-59%	5,234	12,777
December	-80%	2,004	10,092	-69%	4,026	13,006
Average	-11%	6,873	7,731	-6%	9,637	10,291
High	-11%	10,757	12,020	-13%	13,624	15,599
Low	-52%	2,004	4,186	-38%	4,026	6,489
Variance	12%	8,753	7,834	5%	9,597	9,110

Monthly averages based upon data sourced from World Container Index for tariff rates with validity of 7-30 days.

Rates on the return Los Angeles to Shanghai leg actually showed an average improvement of twenty-six percent each month to USD 1,243. This came from two factors, one being that rates were steady each month of 2022 with the highest (USD 1,275 in April) only USD 100 more than the lowest (December). The other factor was that, in the first half of 2021, rates were very weak, being around USD 500-550 for the first third of the year.

WCI - 40' Westbound rates Los Angeles to Shanghai

Month	Los Angeles (USWC)		
	'22/'21	2022	2021
January	143%	1,274	524
February	131%	1,250	542
March	130%	1,263	549
April	132%	1,275	549
May	83%	1,272	695
June	40%	1,248	890
July	-6%	1,273	1,354
August	-12%	1,257	1,424
September	-11%	1,269	1,423
October	-10%	1,185	1,311
November	-9%	1,180	1,293
December	-10%	1,175	1,308
Average	26%	1,243	988
High	-10%	1,275	1,424
Low	124%	1,175	524
Variance	-89%	100	900

Monthly averages based upon data sourced from World Container Index for tariff rates with validity of 7-30 days

## NORTH/SOUTH TRADES

### Overview

The intercontinental container shipping trades are broadly split between East-West and North/South routes. The former comprises three distinct trade lanes: the Transpacific (Far East-North America); Transatlantic (Europe-North America); Far East-Europe. All other intercontinental trades are considered North/South (even if the actual sailings occur in an east-west direction). These connect with Latin America, sub-Saharan Africa, the Middle East/Indian Subcontinent and Australasia.

In 2022, thirty-one percent of intercontinental imports were intended for one of those North/South coastlines. They also accounted for twenty percent of intercontinental exports, a share that has been unchanged since at least 2020. The Middle East/Indian Subcontinent trades saw most cargo, followed in order by Latin America, sub-Saharan Africa and then Australasia.

North-South container trades, in TEU

North/South coastlines	'22/'21	'22/'21		
		Export	Import	
Australasia	-1%	2,353,200	-6%	3,852,900
Sub-Saharan Africa	1%	3,084,600	0%	7,325,000
Mid East & ISC.	-2%	9,930,900	0%	14,286,800
Latin America	-3%	7,399,600	-4%	9,679,100
Grand Total North-South	-2%	22,768,300	-2%	35,143,900
All Inter-continental	-5%	112,492,700	-5%	112,492,700
North/South share		20%		31%

Excludes intra-regional volumes. Source: Container Trades Statistics

### Note on North/South statistics

Unless otherwise stated, volumes in this chapter relate specifically to connections between North/South coastlines and one or all of North America, Europe, and the Far East.

North/South volumes fell by two percent in 2022. Admittedly disappointing, it was still a better performance than for the deepsea East-West (-8% overall) and intra-regional trades (-4%).

For exports, only those out of sub-Saharan Africa exhibited growth, and then marginally at one percent. Exports from the other coastlines lost from one to three percent. Coming back, sub-Saharan Africa and the Middle East/Indian Subcontinent imports just about held station while Australasia and Latin America experienced sharp contractions of six and four percent respectively.

With imports being the dominant direction at 35.1 million TEU, yet exhibiting a similar two percent decline as the weaker exports, the North/South export deficit decreased by 254,000

TEU to 12.4 million TEU. This meant that around 65 TEU of cargo was exported by the North/South trades for every 100 TEU they imported.

When looking at specific partner trades, the Far East is responsible for one quarter of North/South imports at 17.7 million TEU. However, it receives only thirty-five percent of exports at 8.0 million TEU. Compared with 2021, these figures represented differences of +2% for North/South exports and -2% for imports.

Europe is the second largest trading partner responsible for a quarter of North/South imports and twenty-seven percent of exports. North America collects fifteen percent of North/South exports and sends twenty-one percent of imports. "Others" relate to containerised trade between the North/South coastlines. These account for sixteen percent of North/South exports and ten percent of imports.

North-South container trades, by partner, in TEU

Partner trade coastlines	'22/'21	N/S Export	'22/'21	N/S Import
Europe	-4%	6,245,500	-1%	8,682,300
Far East	2%	8,033,300	-2%	17,731,600
North America	-3%	4,876,800	1%	5,117,300
Others	-5%	3,612,600	-5%	3,612,600
Grand Total North-South	-2%	22,768,300	-2%	35,143,900
All Inter-continental	-5%	112,492,700	-5%	112,492,700
North/South share		20%		31%

Excludes intra-regional volumes. Source: Container Trades Statistics

## Europe trades

### Overview Europe-North/South carryings

In 2022, containerised traffic between Europe/Mediterranean and the various North/South coastlines dropped by three percent to 14.9 million TEU. Despite this, it was still the second best performance since at least 2016.

Unlike previous years, this time southbound exports performed better than northbound imports. This was only cold comfort, for the Europe/Mediterranean exports still lost about one percent to register 8.7 million TEU. Return imports to Europe contracted by four percent to finish on 6.2 million TEU. As European exports dominate in general, the imbalance increased by eight percent (172,000 TEU) to 2.4 million TEU. This meant that the North/South trade lane partners returned 72 TEU for every 100 TEU they received, a reduction of 2 TEU.

Main Europe-North/South container trades, in TEU

Trade	'22/'21	2022	2021	2020
From Europe	-1%	8,682,300	8,793,600	8,344,000
To Europe	-4%	6,245,500	6,528,800	5,862,900
Total trade	-3%	14,927,900	15,322,400	14,206,900
Imbalance	8%	2,436,800	2,264,800	2,481,200

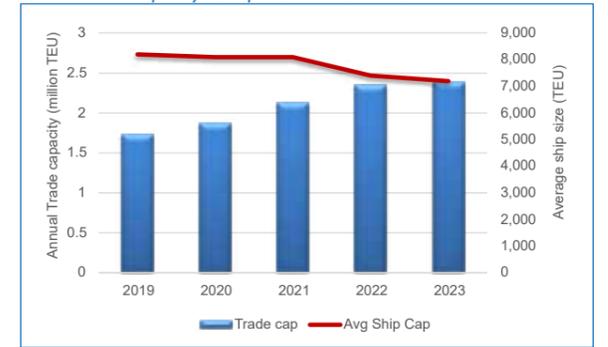
Sources: Container Trades Statistics. Europe includes Mediterranean.

## Middle East/Indian Subcontinent

### Indian Subcontinent

Between Europe/Mediterranean and the Indian Subcontinent, Annual Trade Capacity jumped by a marginal 1.5% to approach 2.4 million TEU, this being as of early 2023. The change was the result of one extra service, net, although the positive impact was lessened by a reduction in average vessel capacity of 200 TEU.

Annual trade capacity: Europe-Indian Sub Continent



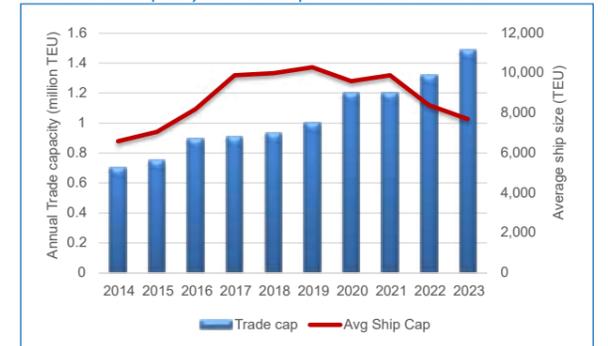
Survey conducted in February/March of each year

The specific North Europe route added well over twelve percent to its Annual Trade Capacity to approach 1.5 million TEU, the highest figure noted, beating the previous best of one year earlier. The growth was helped by three extra service loops, although the second consecutive reduction in average vessel capacity, this time by 700 TEU and eight percent, lessened the impact of these new loops considerably.

One of the new services was opened early in 2023. This was provided by Tailwind Shipping, affiliated with European supermarket concern Lidl, which launched its "Tiger Express" service between Bangladesh, Barcelona and Rotterdam. This supplemented its existing "Panda Service" that ran from the Far East. As has been common with these cargo interest associated operations, the new link was offered by fewer ships of smaller capacities, in this case three of 900 TEU, on a slower frequency (seventeen days).

The other service additions came from ZIM extending its "ZMI", which previously turned in the Mediterranean, whilst Russian forwarder and new entrant Modul opened a low capacity/frequency connection between India and St. Petersburg at the end of 2022.

Annual trade capacity: North Europe-Indian Sub Continent



Survey conducted in February-March of each year

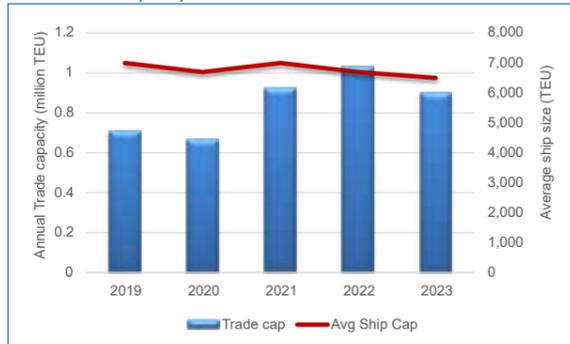
Along the parallel route that connects with the Mediterranean, Annual Trade Capacity reduced by well over twelve percent after five services left whilst only three came in.

Two of the loops that departed did so after extending to the United States East Coast and no longer offered Mediterranean wayport connections in both directions. Other changes saw MSC replacing one operation with two new ones, whilst Kalypso Navigazione, another carrier affiliated with freight (forwarding) interests, opened a Bangladesh-Italy service at the start of 2022.

Also attaching to a recurring theme, in August 2022, a new Russian service was established by RC Line. This ran into the Black Sea port of Novorossiysk, and shortly after the survey for the

accompanying chart was conducted, FESCO launched a similar loop.

Annual trade capacity: Mediterranean-Indian Sub Continent



Survey conducted in February-March of each year

Container carryings

In 2022, containerised traffic between Europe and the combined Middle East/Indian Subcontinent coastlines shrank slightly to 6.9 million TEU. This was despite shipments from Europe bouncing back by three percent to 3.8 million TEU having dropped for two years in a row. In contrast, the weaker return trade from the Indian Subcontinent fell by an acute six percent to 3.1 million TEU after spiking the previous year.

As a result of these developments, the difference between the two directions expanded by sixty-eight percent and was now 769,000 TEU. The Middle East/Indian Subcontinent still sent back a relatively healthy 80 TEU for every hundred received, although this was significantly weaker than the 87 TEU of the previous year.

Europe-Middle East/ISC container trade, in TEU

Trade	'22/'21	2022	2021	2020
Europe-ME/ISC	3%	3,840,400	3,712,200	3,795,200
ME/ISC-Europe	-6%	3,071,100	3,253,400	2,738,800
<b>Total trade</b>	<b>-1%</b>	<b>6,911,500</b>	<b>6,965,600</b>	<b>6,534,100</b>
Imbalance	68%	769,300	458,700	1,056,400

Source: Container Trades Statistics

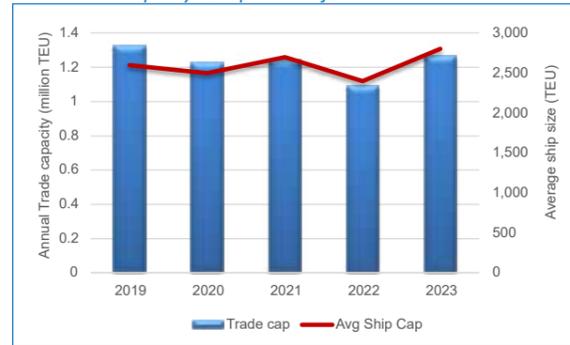
Africa

West Africa

Annual Trade Capacity from gateway services connecting Europe/Mediterranean and West Africa recovered and then some from the twelve percent drop of early 2022. It now added nearly sixteen percent to surpass even 2021's figure to approach 1.3 million TEU. This was the second highest figure noted over five years.

In addition to all this capacity, there is much more provided by the many relay services that only call the Mediterranean hub ports of Algeiras and/or Tangier Med. This is one of the most popular ways of serving West Africa, not only for the specific Mediterranean or general European trades, but also for a range of others, including the Far East.

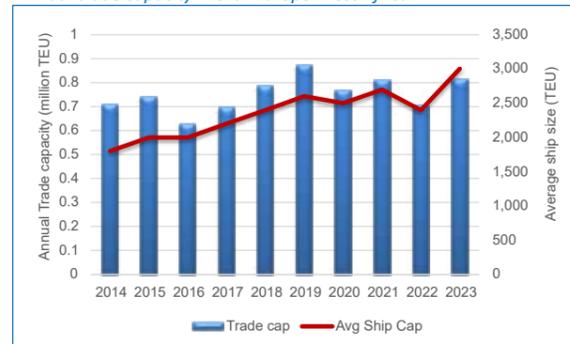
Annual trade capacity: Europe-West Africa



Survey conducted in February/March of each year

The specific North Europe trade lane drove the overall Europe connection with a similar fifteen/sixteen percent growth as for the Mediterranean. It therefore maintained its sixty-four percent share of combined North Europe/Mediterranean Annual Trade Capacity. For early 2023, North Europe contributed 813,000 TEU to the West Africa total. This was despite service numbers remaining unchanged and came principally because average vessel capacity shot up by a quarter to 3,000 TEU.

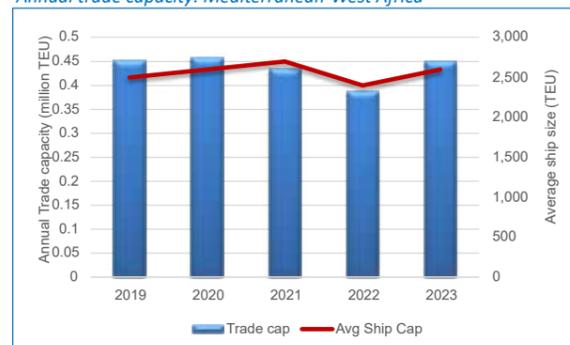
Annual trade capacity: North Europe-West Africa



Survey conducted in February/March of each year

Along the parallel Mediterranean trade, and considering only gateway loops that concentrate on Spain, France and Italy, the number of services stayed the same at seven. Underlying changes saw Naviera DAL withdraw its service whilst MSC established a new Valencia-Mauritania-Senegal connection.

Annual trade capacity: Mediterranean-West Africa



Survey conducted in February/March of each year

Container carryings

Containerised trade between Europe and West Africa, specifically, contracted by seven percent in 2022 to 1.42 million TEU, and was at its lowest level since the 1.37 million TEU noted in 2017. The downturn was due entirely to European exports losing eleven percent to 1.05 million TEU. Shipments continued the growth shown in 2021 and at 369,000 TEU were now at their most buoyant since at least 2010. The differing dynamics

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meant that the imbalance between the two directions reduced by 140,000 TEU so that the European export surplus registered 679,000 TEU. This meant that West Africa returned 35 TEU for every 100 TEU imported, an improvement of 5 TEU over the situation of 2021 and also one of the best seen.

#### Europe-West Africa container trade, in TEU

Trade	'22/'21	2022	2021	2020
Europe-West Africa	-11%	1,047,700	1,171,900	1,105,200
West Africa-Europe	5%	368,800	352,800	339,300
<b>Total trade</b>	<b>-7%</b>	<b>1,416,500</b>	<b>1,524,700</b>	<b>1,444,500</b>
Imbalances	-17%	678,900	819,100	765,800

Source: Seabury "World Ocean Yearly" Database. West Africa = Mauritania-DR Congo range and landlocked countries.

Between Europe and Southern Africa, container trade stuttered as it reduced by one percent to 814,000 TEU. The dominant southbound trade reduced by five percent with the return growing at the same rate. Alike the West Africa route, these dynamics meant that Europe's export surplus contracted by nine percent to 171,000 TEU, with only 2020's figure of 154,000 TEU being smaller in recent history. For 2022, Southern Africa now sent back 65 TEU for every 100 TEU it received. In 2021, it sent back 59 TEU.

#### Europe-Southern Africa container trade, in TEU

Trade	'22/'21	2022	2021	2020
Europe-S. Africa	-5%	492,500	516,000	465,700
S. Africa-Europe	5%	321,400	305,600	311,300
<b>Total trade</b>	<b>-1%</b>	<b>813,800</b>	<b>821,700</b>	<b>777,000</b>
Imbalance	-19%	171,100	210,400	154,400

Source: Seabury "World Ocean Yearly" Database. Europe is North Europe + Mediterranean, including Black Sea and North Africa. Southern Africa = Angola-Mozambique range + landlocked countries (excluding Zimbabwe)

Containerised trade between Europe/Mediterranean and East Africa exhibited the same patterns as for the other two sub-Saharan coastlines. Overall trade dropped by two percent to 453,000 TEU. The dominant southbound exports contracted sharply, again, by six percent. In stark contrast, Europe's imports from East Africa managed to add eight percent. This meant that Europe's export surplus reduced by eighteen percent to finish on 140,000 TEU, the smallest noted for many years. East Africa sent back 53 TEU in 2021 for every 100 TEU received. This compared with 46 TEU in 2021 (and 41 TEU in 2020).

#### Europe-East Africa container trade, in TEU

Trade	'22/'21	2022	2021	2020
Europe-East Africa	-6%	296,400	315,400	337,900
East Africa-Europe	8%	156,600	145,000	140,200
<b>Total trade</b>	<b>-2%</b>	<b>453,000</b>	<b>460,400</b>	<b>478,100</b>
Imbalance	-18%	139,800	170,500	197,700

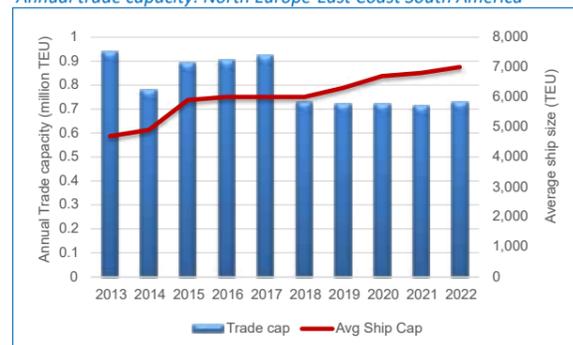
Source: Seabury "World Ocean Yearly" Database. Europe is North Europe + Mediterranean, including Black Sea and North Africa. East Africa = Eritrea-Tanzania range + landlocked countries (including Zimbabwe) + Indian Ocean Islands

### Latin America

#### East Coast of South America

Annual Trade Capacity between North Europe and the East Coast of South America grew slightly in 2022 to 729,000 TEU. The already low number of services was unchanged at four, whilst average capacity added 200 TEU (3%) to 7,000 TEU. The trade continued to be dominated by a Maersk/Hamburg Süd loop and a joint Hapag-Lloyd/MSW service. The remaining options offered small amounts of Annual Trade Capacity. Grimaldi operated a Ro/Ro loop whilst the joint CMA CGM/Marfret service also called a substantial contingent of ports in the Caribbean, thereby diluting the Annual Trade Capacity that could be allocated to South America.

#### Annual trade capacity: North Europe-East Coast South America



Survey conducted in April/November of each year

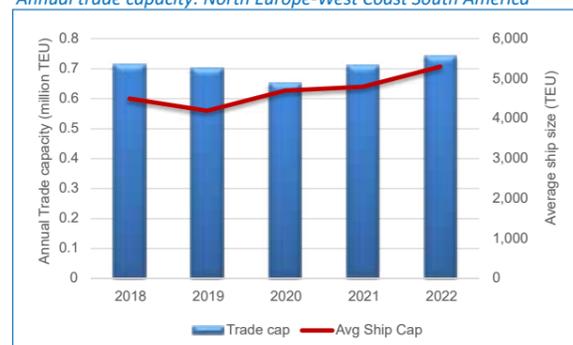
Along the parallel Mediterranean route, there were only two full container service loops. These were offered by Hapag-Lloyd and MSC on the one hand, and CMA CGM and Maersk on the other. Annual Trade Capacity was stable in 2022 at 658,000 TEU, this provided by ships averaging 9,000 TEU.

#### West Coast of South America

At the midpoint of 2022, Annual Trade Capacity between North Europe and the West Coast of South America had jumped by four/five percent to 742,000 TEU. This followed on from the near nine percent growth of the year previously and set a new five-year record, despite the removal of Maersk's "Ecubex" service from the list, which closed at the start of 2022 and was not replaced.

The increase in Annual Trade Capacity was made possible because the number of North Europe and WCSA ports called increased their share from fifty-eight to sixty-eight percent. With the influence of intermediate wayports reducing, therefore, this meant there was more Annual Trade Capacity that could be allocated to these North Europe and WCSA outlets.

#### Annual trade capacity: North Europe-West Coast South America



Survey conducted in June of each year

There was also a relatively small 187,000 TEU of Annual Trade Capacity offering direct Mediterranean-WCSA connections. This came from the established "Ecumed" loop of Maersk and the mid-2022 launched "MSW" of Hapag-Lloyd. Shortly after this survey, CMA CGM and Marfret announced that their joint "MedCaribe" would be extended to the West Coast of South America at the expense of other stops in the United States and Panama.

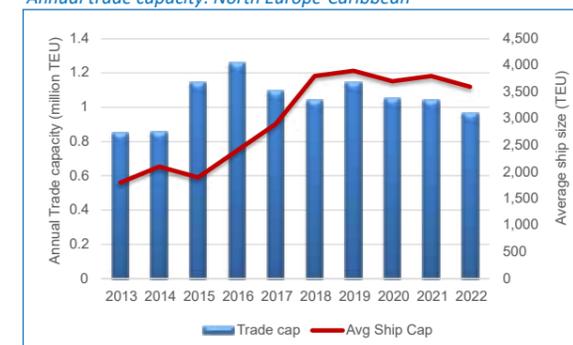
#### Caribbean

As of the third quarter of 2022, North Europe-Caribbean Annual Trade Capacity (ATC) contracted for the third year in a row, this time by more than seven percent, to finish on 965,000 TEU. This was the lowest figure noted since 2014.

The reduction came even though service and ship numbers were unchanged at fourteen and eighty-eight respectively. Av-

erage vessel capacity reduced by 200 TEU, around five percent. Also adding to the decline was the influence of wayports outside of the Caribbean/North Europe (these essentially siphon off capacity that would otherwise be allocated to the North Europe-Caribbean trade). The share of these ports increased by three percentage points to sixty percent of the total.

#### Annual trade capacity: North Europe-Caribbean

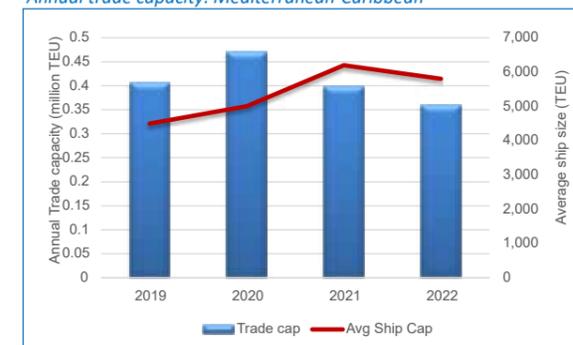


Survey conducted in August/September of each year

Along the parallel Mediterranean-Caribbean route there were six services, this being unchanged from 2021. Average vessel capacity reduced by six percent to 5,800 TEU and helped feed what was ultimately a nine percent contraction of Annual Trade Capacity. The final figure of 359,000 TEU was the lowest noted over the past four years.

Five services were full container operations with Cosiarma the only one involving conventional reefer vessels. Although service numbers were unchanged, underlying that, the joint "MSP" service of Hapag-Lloyd and Maersk that passed through the Panama Canal up along the North America West Coast, was closed. However, the launch of Hapag-Lloyd's "MSW" service compensated for this, although after transiting the Panama Canal, this then turned south rather than north.

#### Annual trade capacity: Mediterranean-Caribbean



Survey conducted in September of each year

#### Container carryings

The overall Europe-Latin America trade shrank by eight percent in 2022 to dip just below 4.0 million TEU. Whilst both directions saw traffic reduce, it was the weaker Latin America import leg which lost most of all. This was both absolutely (-186,000 TEU) and relatively (-9%). The dominant Latin America exports lost 151,000 TEU (-7%). As a result, Europe's export deficit grew by 35,000 TEU, although the trade was still relatively well-balanced as Europe returned ninety-four containers of Latin America cargo for every hundred received.

#### Europe-Latin America container trade, in TEU

Trade	'22/'21	2022	2021	2020
Europe-L. America	-9%	1,924,900	2,110,900	1,791,100
L. America-Europe	-7%	2,056,300	2,207,400	2,110,500
<b>Total trade</b>	<b>-8%</b>	<b>3,981,100</b>	<b>4,318,300</b>	<b>3,901,500</b>
Imbalance	36%	-131,400	-96,600	-319,400

Source: Container Trades Statistics

#### Australasia

Following service changes that occurred in 2019, there have only been two left that offer direct connections between Europe and Australasia since. One is routed via the Mediterranean, Suez Canal and Indian Ocean. Named the "NEWMO/Australia-Europe Express", it is provided by CMA CGM and MSC. The other service is also a joint operation involving CMA CGM, although on this occasion its partner is compatriot Marfret. This service is routed via the Atlantic Ocean, Panama Canal and Pacific Ocean.

Trade volumes have fluctuated for a number of years with 2016, for example, showing 802,000 TEU, and 2018 showing 960,000 TEU. In 2022, cargoes reduced by five percent to 894,000 TEU. Although both directions were negatively impacted, most of the drop came from the dominant southbound shipments out of Europe as these contracted by six percent. Northbound consignments lost only the equivalent of 4,500 TEU. Although Europe's export surplus reduced, it was still sizeable at 527,000 TEU and meant that Australasia returned fewer than 26 TEU for every 100 TEU it received.

#### Europe-Australasia container trade, in TEU

Trade	'22/'21	2022	2021	2020
Europe-Australasia	-6%	710,600	754,200	699,500
Australasia-Europe	-2%	183,600	188,100	185,500
<b>Total trade</b>	<b>-5%</b>	<b>894,200</b>	<b>942,300</b>	<b>884,900</b>
Imbalance	-7%	527,000	566,100	514,000

Sources: Container Trades Statistics

### North America trades

#### Overview

The main North/South routes to and from North America shrank marginally in 2022 to finish just below 10.0 million TEU. This was still the second best return ever noted for the trade. Underlying changes removed the virtual parity between the import/export directions that had been achieved in 2021. As a result, North America exports returned to their previously dominant position with a surplus of more than 240,000 TEU, an increase of 196,000 TEU (and 438%).

#### Main North America-North/South container trades, in TEU

Trade	'22/'21	2022	2021	2020
From N. America	1%	5,117,300	5,055,600	4,728,900
To N. America	-3%	4,876,800	5,010,900	4,392,200
<b>Total trade</b>	<b>-1%</b>	<b>9,994,100</b>	<b>10,066,500</b>	<b>9,121,000</b>
Imbalance	438%	240,500	44,700	336,700

Sources: Container Trades Statistics

#### Middle East/Indian Subcontinent

For the North America-Middle East/Indian Subcontinent trade (ME/ISC), in 2022, volumes dropped by fewer than 2,000 TEU to still register 3.3 million TEU. In a reversal of the previous year's patterns, North American exports grew by 6% and imports fell by 5%.

This softened the North American export deficit by 186,000 TEU and thirty-five percent to 341,000 TEU and meant that North America sent back 81 TEU with cargo for every 100 TEU it received. One year earlier, the return ratio was 73 TEU. Prior to 2020, North America actually enjoyed an export surplus.

## North America-Middle East/ISC container trade, in TEU

Trade	'22/'21	2022	2021	2020
N. America-ME/ISC	6%	1,498,100	1,412,800	1,421,000
ME/ISC-N. America	-5%	1,839,600	1,940,500	1,458,000
<b>Total trade</b>	<b>0%</b>	<b>3,337,700</b>	<b>3,353,400</b>	<b>2,879,100</b>
Imbalance	35%	341,500	527,700	37,000

Source: Container Trades Statistics

## Africa

The North American trade with sub-Saharan Africa contracted by eight percent in 2022 to 477,000 TEU, which was below even 2020's figure. The principal reason for this was the thirteen percent contraction in North America exports; the three percent growth recorded by imports only resulted in an extra 4,500 TEU along that leg. Notwithstanding these individual developments, southbound shipments out of North America were still dominant, albeit with the export surplus reduced to 146,000 TEU. Sub-Saharan Africa now returned 53 TEU for every 100 TEU of southbound cargo received. In 2021, the figure was 45 TEU sent back.

## North America-sub-Saharan Africa container trade, in TEU

Trade	'22/'21	2022	2021	2020
N. America-Africa	-13%	311,700	360,300	349,800
Africa-N. America	3%	165,800	161,300	132,000
<b>Total trade</b>	<b>-8%</b>	<b>477,500</b>	<b>521,600</b>	<b>481,800</b>
Imbalance	-27%	145,900	199,100	217,800

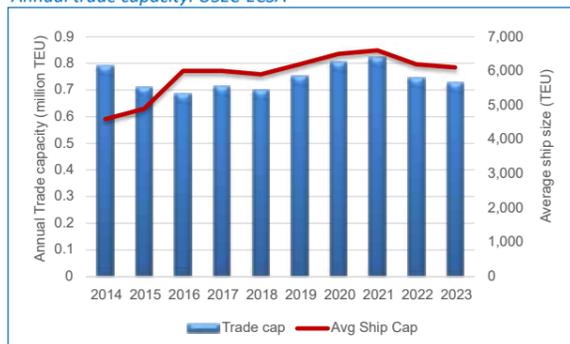
Source: Container Trades Statistics

## Latin America

## East Coast South America

As of April 2023, Annual Trade Capacity between North America (US East/Gulf Coast) and the East Coast of South America shrank slightly to 726,000 TEU. With service numbers staying the same since 2016 and vessel numbers virtually unchanged (suggesting frequencies are also in line with previous years), much of the difference came from average vessel capacity decreasing slightly to 6,100 TEU.

## Annual trade capacity: USEC-ECSA



Survey conducted in April of each year

## West Coast South America

Diagonal liner shipping connections between the United States East Coast (USEC) via the Panama Canal and West Coast South America (WCSA) have traditionally been few and settled, hence no need to trace market developments via Annual Trade Capacity analyses. That might need to change judging by the experience of end-2022/early-2023, which saw an atypical upsurge in activity.

Before this point, the direct USEC-WCSA trade was populated by two services. One was a full container loop offered by Seaboard Marine between Miami, the Caribbean, Ecuador and Peru. It was provided by vessels of around 1,800 TEU. The other was a regularly scheduled multipurpose service of 800 TEU ships (on average) operated by BBC Chartering. This connected the US/Mexico Gulf port of Houston with Ecuador, Peru and Chile.

In the space of a few months though, service provision doubled, and given the full container nature of the new arrivals, would have more than doubled Annual Trade Capacity. At the end of 2022, CMA CGM launched the "Americas XL" service using ships of around 2,500 TEU. This service connected the USEC with Colombia's Atlantic and Pacific coastlines, plus single port visits to Ecuador, Peru and Chile. This was followed up early in 2023 by ZIM's "ZCX" service employing vessels of 1,700 TEU. These also connected USEC, via Caribbean wayports, with the same three WCSA countries.

## Container carryings

The overall North America-Latin America trade shrank by a marginal 21,000 TEU in 2022, less than one percent, to stay at 5.6 million TEU. The muted behaviour reflected the relative changes of both directions with North American exports up by one percent and imports down by the same rate. However, this did result in a 52,000 TEU and nineteen percent increase in the North American surplus to 326,000 TEU. It also resulted in Latin America seeing its return ratio fall for the second year in a row, this time from the 91 TEU to 89 TEU for every 100 TEU it received.

## North America-Latin America container trade, in TEU

Trade	'22/'21	2022	2021	2020
North A.-Latin A.	1%	2,973,600	2,957,900	2,626,500
Latin A.-North A.	-1%	2,647,100	2,683,600	2,584,900
<b>Total trade</b>	<b>0%</b>	<b>5,620,700</b>	<b>5,641,600</b>	<b>5,211,500</b>
Imbalance	19%	326,500	274,300	41,600

Source: Container Trades Statistics

## Australasia

The North America-Australasia route grew by two percent in 2022, although this was only an extra 8,700 TEU. Growth was down entirely to the larger North America exports which added three percent. Imports from Australia shrank marginally. North America's export surplus thereby increased by 10,500 TEU to register approaching 110,000 TEU. As a result, Australasia now sent back 67 TEU per 100 TEU received, a reduction of 2 TEU compared with the previous year.

## North America - Australasia container trade, in TEU

Trade	'22/'21	2022	2021	2020
N. Am.-Australasia	3%	333,900	324,500	331,500
Australasia-N. Am.	0%	224,300	225,400	217,200
<b>Total trade</b>	<b>2%</b>	<b>558,300</b>	<b>549,900</b>	<b>548,700</b>
Imbalance	11%	109,600	99,100	114,300

Source: Container Trades Statistics

## Far East Trades

## Overview

In 2022, 25.8 million TEU of containerised cargo passed along the Far East's main North/South trade lanes. This represented a marginal decrease over the 26.0 million TEU of the year beforehand.

The change was brought about by the dominant Far East exports reducing by two percent to 17.7 million TEU. Return shipments to the Far East added two percent to move past 8.0 million TEU. As a result of these contrasting patterns, the Far East export surplus reduced by 621,000 TEU but was still a substantial 9.7 million TEU. This meant that the various North/South coastlines managed to send back 45 TEU for every 100 TEU received from the Far East, an improvement of 2 TEU compared with 2021.

## Main Far East-North/South Container Trades, in TEU

Trade	'22/'21	2022	2021	2020
From Far East	-2%	17,731,600	18,183,400	16,799,300
To Far East	2%	8,033,300	7,863,400	7,806,600
<b>Total trade</b>	<b>-1%</b>	<b>25,764,900</b>	<b>26,046,800</b>	<b>24,605,900</b>
Imbalance	-6%	9,698,200	10,319,900	8,992,600

Source: Container Trades Statistics



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Middle East/Indian Subcontinent

Middle East (Gulf)

In mid-2022, there were thirteen services offering direct shipping connections between the Far East and Middle East (Gulf). These were provided by seventy-three vessels averaging 8,000 TEU which is fairly high and a reflection of the fact that THE and the Ocean Alliances both incorporate the Middle East within their networks. Annual Trade Capacity came in at 3.3 million TEU.

Outside of the alliances, MSC operated a standalone service as did regional and feeder carriers Kaiso Line, SeaLead and X-Press, albeit with substantially smaller ships than the average. There were also three joint operations involving ten different parties in total, with RCL the only one to appear on two of those. These carriers also ranged from major operators as CoscoSL to regional types as Feedertech.

Middle East (Red Sea)

Along the Far East-Red Sea trade, there were three dedicated services. Two were provided by the Ocean Alliance, one being a cooperation with non-alliance member PIL. THE Alliance accounted for the third loop and which included a single vessel provided by non-alliance member Wan Hai. These services were ensured by fifteen vessels totalling 139,000 TEU at a rounded average of 9,300 TEU. The generated Annual Trade Capacity was 760,000 TEU.

Container carryings

In 2022, container traffic between the Far East and Middle East/Indian Subcontinent remained stable at 10.8 million TEU although there were contrasting fortunes in the different directions. The clearly dominant export trade from the Far East contracted by three percent to 7.6 million TEU, a difference of around 220,000 TEU. Coming the other way, imports to the Far East went up by eight percent and 232,000 TEU to 3.2 million TEU. As a result, the Far East's export surplus reduced by 452,000 TEU to 4.4 million TEU. This meant that the Middle East/Indian Subcontinent return ratio strengthened from 38 TEU to 43 TEU being sent back for every 100 TEU received.

Far East-Middle East/ISC container trade, in TEU

Trade	'22/'21	2022	2021	2020
Far East-ME/ISC	-3%	7,601,700	7,821,400	7,117,600
ME/ISC-Far East	8%	3,237,200	3,005,300	2,874,500
<b>Total trade</b>	<b>0%</b>	<b>10,838,900</b>	<b>10,826,700</b>	<b>9,992,100</b>
Imbalance	-9%	4,364,500	4,816,200	4,243,100

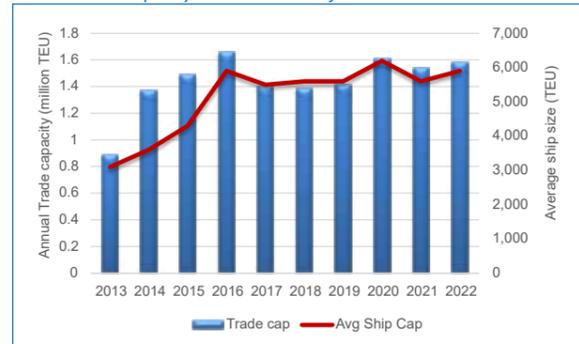
Source: Container Trades Statistics

Africa

West Africa

There were eight direct container shipping services between the Far East and West Africa in mid-2022. This number has been unchanged since 2017. The 2022 services were ensured by ninety-six ships which is a reduction of six units compared with one year previously. Helped by average vessel capacity increasing by well over five percent to 5,900 TEU, Annual Trade Capacity grew to nearly 1.6 million TEU.

Annual trade capacity: Far East-West-Africa



Survey conducted in June/July of each year

After three years of strong growth, Far East-West Africa cargoes slipped back somewhat in 2022 to drop below 1.8 million TEU, a fall of two percent. The different directions experienced contrasting fortunes with the headhaul Far East exports down by three percent and the smaller imports from West Africa growing by three points. As a result, the trade imbalance shrunk by five percent and 52,000 TEU to 1.0 million TEU. At a ratio level, West Africa now returned 26 TEU for every 100 received, an increase of 2 TEU.

Far East-West Africa container trade, in TEU

Trade	'22/'21	2022	2021	2020
Far East-West Africa	-3%	1,408,500	1,448,800	1,337,400
West Africa-Far East	3%	364,700	352,600	293,200
<b>Total trade</b>	<b>-2%</b>	<b>1,773,300</b>	<b>1,801,400</b>	<b>1,630,600</b>
Imbalance	-5%	1,043,800	1,096,300	1,044,200

Source: Seabury "World Ocean Yearly" Database. West Africa = Mauritania-DR Congo range including landlocked countries.

Southern Africa

Containerised trade between Southern Africa and the Far East also fell back slightly in 2022 but was still well above 1.0 million TEU. Both directions faltered, although Far East imports from South Africa contracted most acutely by eleven percent. The leading Far East exports only dropped by one percent. As a result of their relative performances, the imbalance grew by two percent to 634,000 TEU and also resulted in Southern Africa shipping just 23 TEU for every 100 TEU it received, a drop of 3 TEU.

Far East-Southern Africa container trade, in TEU

Trade	'22/'21	2022	2021	2020
Far East-S. Africa	-1%	830,700	840,400	722,900
S. Africa-Far East	-11%	194,900	219,200	200,100
<b>Total trade</b>	<b>-3%</b>	<b>1,025,600</b>	<b>1,059,600</b>	<b>923,000</b>
Imbalance	2%	635,900	621,200	522,900

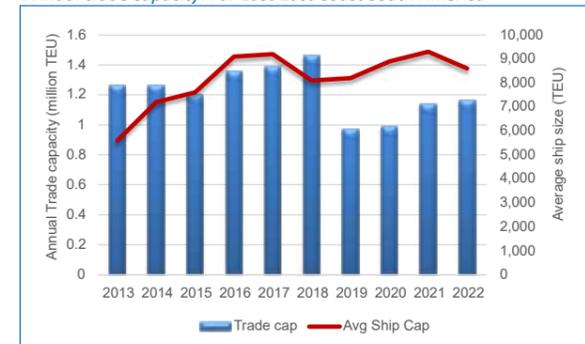
Source: Seabury "World Ocean Yearly" Database. Southern Africa = Angola-South Africa-Mozambique range, including landlocked countries (not Zimbabwe).

Latin America

East Coast South America

Annual Trade Capacity between the Far East and East Coast South America grew by a remarkable nineteen percent in 2022 to 1.47 million TEU. This came because an extra loop had been added after four years of stability. The new service was the "FIL" launched by HMM early in 2022. A standalone operation involving twelve vessels averaging 3,700 TEU, the Annual Trade Capacity (ATC) offered was not as large as the existing ones. The average vessel size for all services, including the "FIL", was 8,600 TEU. This was a reduction of 700 TEU compared with mid-2021 and was down entirely to the smaller ships employed by the new loop.

Annual trade capacity: Far East-East Coast South America

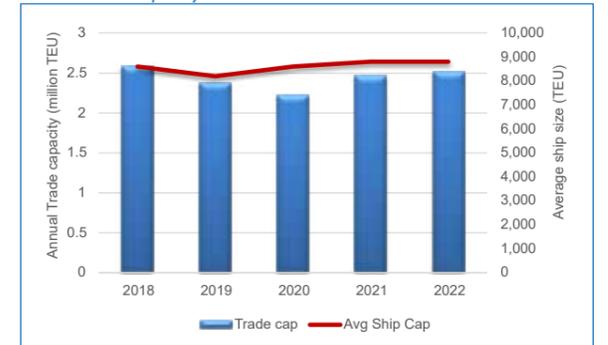


Survey conducted in June of each year

West Coast South America

To and from the West Coast of South America, Annual Trade Capacity built upon the fifteen percent spike of 2021 by increasing a further four percent to more than 2.6 million TEU. This is the highest figure ever noted by Dynamar and came from two new services and fifteen extra vessels. These new units were smaller in capacity as the average for all ships dropped by 600 TEU to 8,200 TEU. The trade gained two new services, both joint operations, launched by CMA CGM/CoscoSL ("ASCA5") and PIL/Wan Hai/Yang Ming ("WS6/AS2/SA8").

Annual trade capacity: Far East-West Coast South America



Survey conducted in June of each year

Container carryings

Container volumes between the Far East and all of Latin America (including Central America and the Caribbean) shrank by two percent to 6.3 million TEU. Both directions contracted although the weaker Latin America exports lost more relatively speaking at minus three percent. The dominant Far East exports only lost one percent, but due to the difference in absolute sizes of the respective directions, the trade imbalance remained stable at 2.5 million TEU. The return ratio did contract slightly as Latin America now only sent back 43 TEU for every 100 TEU it received, a reduction from the 44 TEU of 2021.

Far East-Latin America container trade, in TEU

Trade	'22/'21	2022	2021	2020
FE-L. America	-1%	4,418,300	4,478,600	3,686,700
L. America-FE	-3%	1,915,600	1,968,700	2,102,100
<b>Total trade</b>	<b>-2%</b>	<b>6,333,900</b>	<b>6,447,300</b>	<b>5,788,800</b>
Imbalance	0%	2,502,700	2,509,900	1,584,600

Source: Container Trades Statistics

Australasia

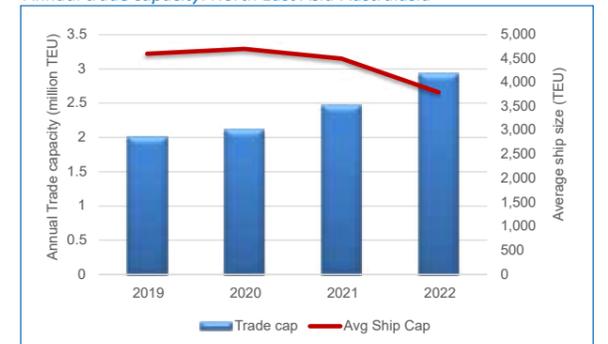
Australia/New Zealand

Between Northeast Asia and Australia/New Zealand, late in 2022, there were twenty-one services (up five) and 113 vessels (up thirty-one) that averaged 3,900 TEU (down 200 TEU). As a result, Annual Trade Capacity improved by eighteen percent to exceed 2.9 million TEU. When included with the previous two years of growth, from 2019 to 2022, ATC provision had expanded by fifty-one percent and 990,000 TEU.

In total, there were seven service changes with six coming in and one moving out. The new operations were offered by ANL (CMA CGM)/CoscoSL/OOCL, Cosco/OOCL (separately), Matson, T.S. Lines, and ZIM (two loops). The service leaving was provided by Mariana Express Lines (PIL).

In the meantime, one service had come and gone. This was the late 2021 launched service of BAL Container Line and followed the scaling down of its Transpacific activities. However, by the time of the 2022 survey, this operation was not in existence.

Annual trade capacity: North East Asia-Australasia

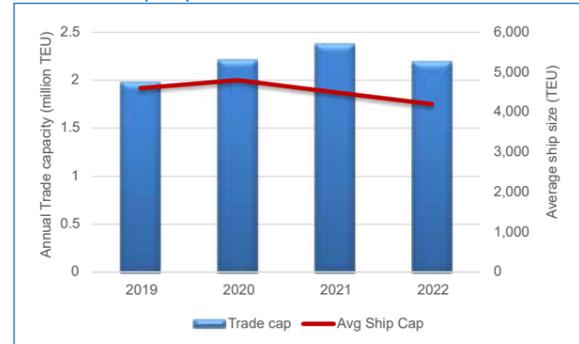


Survey conducted in November of each year



For the parallel route with Southeast Asia, sixteen services were noted, a decrease of one. The number of vessels deployed increased by eight although their average capacity dropped 300 TEU to 4,200 TEU. The Annual Trade Capacity fell by eight percent to register 2.2 million TEU. The service changes came from MSC, who cancelled two separate shuttles to Fremantle and Sydney that had only just appeared in the 2021 survey. Blue Water Shipping added a new service. This was provided by a 350 TEU multipurpose ship operating on a fortnightly frequency.

Annual trade capacity: South East Asia-Australasia



Survey conducted in November of each year

After the above survey, ZIM and its subsidiary Gold Star Line launched the “Thailand Fremantle Express” between Southeast Asia and Australia. As a result, two existing services that also extended to Northeast Asia, were closed. The Northeast Asia aspects of those services were transferred to a parallel ZIM/Gold Star loop.

Container carryings

The eight percent reduction in Annual Trade Capacity, almost mirrored the reduction of container volumes along the specific and dominant Far East to Australasia container trade. However, with the return leg growing, the overall trade only lost three percent overall to finish on 4.3 million TEU. Amongst all this, the difference between the two directions shrank by 238,000 TEU (-20%) so that the Far East export surplus retreated below the psychological 1.0 million TEU mark. The Australasian return ratio subsequently strengthened, for the second year in a row, to 64 TEU sent north for every 100 TEU sent south.

Far East-Australasia container trade, in TEU

Trade	'22/'21	2022	2021	2020
Far East-Australasia	-7%	2,606,500	2,799,700	2,840,200
Australasia-Far East	3%	1,660,700	1,616,300	1,592,200
Total trade	-3%	4,267,200	4,416,000	4,432,400
Imbalance	-20%	945,900	1,183,500	1,248,000

Source: Container Trades Statistics

REGIONAL TRADES

Intra-Regional trades

“Intra-regional” cargoes, such as intra-Europe, intra-Far East, intra-North America and so on, consistently account for over one third of all container cargoes. In 2022, this share resulted in approaching 61.0 million TEU being moved regionally. This was 1.8 million TEU and two percent down on the previous year’s figures yet was still a better performance than the intercontinental routes (East-West and North/South) who lost five percent.

The intra-Far East trade continues to be not only the largest “intra” trade but also be the largest defined trade in the world. On its own, it accounts for over three-quarters of all “intra” volumes and well over one quarter of the global figure.

Fortunes were mixed for the individual intra-trades in 2022. The Middle East/Indian Subcontinent managed to add a strong nine percent with intra-sub-Saharan Africa growing by three percent. All others contracted. The intra-Far East had the softest of all relative contractions (-2%), but this actually translated into the harshest of absolute losses at 858,000 TEU. In contrast, intra-North America cargoes lost the most relatively at minus fifteen percent, but this only resulted in an absolute fall of 47,000 TEU. Arguably, looking at the absolute/relative combination, intra-European cargoes were the worst affected, these being down by eight percent and 756,000 TEU.

Intra-Regional Container Trades, in TEU

Trade	'22/'21	2022	2021	2020
Far East	-2%	46,288,500	47,146,100	43,210,000
Europe	-8%	8,177,200	8,933,400	8,591,000
Mid East & ISC	9%	3,867,900	3,555,100	3,985,900
Latin America	-7%	1,480,100	1,585,700	1,481,200
Australasia	-5%	380,900	400,300	453,300
North America	3%	340,800	331,700	318,200
Sub Saharan Africa	-15%	254,500	301,100	305,500
Grand Total intra-trades	-2%	60,789,900	62,253,400	58,345,100
All global trades	-4%	173,282,700	180,780,300	168,868,500
Intra-Regional share	-	35%	34%	35%

Source: Container Trades Statistics; excludes feederage.

Intra-Far East

In 2022, a number of purely or principally domestic operators entered new markets. Zhonggu Logistics of China had already moved to the international scene with a loop to Ho Chi Minh (Vietnam) in 2021. It expanded again in 2022 with a China, Malaysia, Indonesia service.

Similarly, Ningbo Ocean Shipping had already evolved from a purely China domestic operator to run along the China-South Korea-Japan axis. In 2022, it then made its planned entrance to the Southeast Asia trade with a China to Vietnam service (2x 1,100 TEU).

Another China domestic carrier, Shandong Port Shipping of China, a part of the wider Shandong Port Group, started down a similar path. It launched its first international service, a single vessel shuttle (600 TEU) between China and Busan (South Korea).

It was not just Chinese domestic carriers either. Philippines-based Iris Logistics initiated a single vessel service that ran to Thailand and Vietnam as well. Early in 2023, this was replaced by a 2x 750 TEU operation run together with PIL between the Philippines and Thailand (although was cancelled a few months later).

Amidst all this, halfway through 2022, trials of relaxed Chinese cabotage rules covering certain ports came into place. Maersk is believed to have been the first to take advantage of the new regime by transshipping boxes originating from Vancouver over Shanghai onto its own tonnage for feederage to Tianjin. Previously, this final leg could only have been carried out by a Chinese domestic carrier.

Intra-Europe

Although some of the 2020-2021 entrants to the European deepsea trades only lasted a short while, others suggested they were in it for a more sustained period. This was shown by their nimbleness in moving from one deepsea trade to another, and/or establishing local connections to undoubtedly help if not supplement these intercontinental operations.

One of these relative newcomers was Ellerman City Liners. Initially operating a Far East-Europe service, in the closing quarter

of 2022, it opened a significant north Europe-Iberian peninsula (Atlantic Sain/Portugal) loop.

Within the Mediterranean, Kalypso Navigazione, which was established by Italian forwarder Rif Line to operate a Far East-Italy service in mid-2021, developed two separate intra-Mediterranean services over the second half of 2022. These linked Italy’s Adriatic coastline with Turkey and Libya. They were then later consolidated into a single 650 TEU vessel loop, minus the Libya element, early in 2023.

There was also the entrance of a more established operator in Global Feeder Shipping, whose antecedents can be found in the Dubai based regional feeder operator Simatech. Shortly before it was announced that stevedore AD Ports was to acquire a controlling stake in Global Feeder, the latter had introduced a new intra-Mediterranean service. This was a brand new market for it.

Intra-Australasia

During 2022, there was an awful lot of movement surrounding the usually steady trans-Tasman trade between New Zealand and Australia. Some of this change was still related to the COVID pandemic. Trans-Tasman traffic is mostly carried by deepsea services that connect Australia and New Zealand with the Far East. With the COVID related capacity shortage, trans-Tasman cargoes were not the main priority, which in turn pushed rates up for this shortsea route, encouraging others to join the trade.

However, before these could get up and running, halfway through 2022, Maersk closed down its trans-Tasman dedicated “Polaris” loop. This may well have been a sign of the market returning to its pre-pandemic pattern with trans-Tasman cargoes now able to be accommodated by the deepsea services.

Yet shortly after the “Polaris” closed down, CMA CGM opened its “ANZ Shuttle”. Whilst providing a trans-Tasman link, the Australia to New Zealand direction was routed via the Pacific Islands of Noumea and New Caledonia. A second vessel was added to the service late in the year, albeit without the Pacific islands detour.

However, the main events occurred towards the end of 2022 when two brand new operators launched separate trans-Tasman services. The first was FOCUS Container Line, which started in December. It was ensured by two chartered-in ships and a 3,000 unit strong fleet of container equipment. However, after a couple of months, this operator entered administration, hampered by the deadly combination of high charter rates, long charter periods and normalised, i.e. lower, freight rates.

The other newcomer, MOVE Logistics, a company publicly-listed in New Zealand, avoided the vagaries of the charter market by purchasing a 370 TEU general cargo ship. This was delivered late in 2022 since when it has been connecting a select number of New Zealand and Australia ports.

The activity between Australia and New Zealand did not stop as 2022 moved into 2023. In April, CoscoSL and its affiliated OOCL opened a new service, the “ANS”, between the two countries. What was novel about this one was the direct call to Tasmania, which is more usually served by Ro/Ro connections with the Australian mainland.

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**Figure 4**  
**NEW CONTAINER SERVICES LAUNCHED IN 2022**

East/West Trades							
Carriers/Consortium	Trade name	Trade	Month started	Frequency	Number of ships	Average TEU per ship	Annual TEU capacity
Wan Hai	AA9	Transpacific EC	Jan	7	8	2,500	104,300
ZIM	ZXB	Transpacific EC	Mar	14	7	4,000	83,400
SeaLead Shipping	AEC	Transpacific EC	Mar	14	4	6,000	125,100
CU Lines	TPN	Transpacific WC	Apr	21	2	1,900	26,400
Hapag-Lloyd	CGX	Eur-FE	Apr	7	8	4,200	175,200
Hapag-Lloyd	AT3	Transatlantic	Apr	14	2	2,500	52,100
MSC	Scan Baltic to USA	Transatlantic	Apr	7	6	5,000	208,600
MSC	Turkey Greece to USA	Med-USEC	Apr	7	8	4,000	166,900
Ocean Alliance	AWE7/CBX	Transpacific WC	Apr	7	10	10,000	417,100
Swire Shipping, UWL	Sun Chief Express	Transpacific WC	Apr	14	3	2,500	52,100
ZIM	ZMP	Med-FE-PNW	Apr	7	15	4,400	183,500
MSC	South Turkey-Israel-Egypt-USA	Med-USEC	May	7	6	6,000	250,300
FESCO	FVDL	Eur-SEA	Jun	30	2	1,100	10,700
MSC	Zephyr	Transpacific EC	Jul	7	10	5,000	208,600
Tailwind Shipping	Panda	FE-Eur	Jul	16	4	5,500	100,400
CMA CGM, OOCL	MedGulf	Med-USEC	Sep	7	6	2,800	116,800
Kalypso	Cristoforo Colombo	Transpacific EC	Nov	14	2	900	18,800
Ellerman	USX	Transatlantic	Nov	14	2	4,000	83,400
Akkon Lines	FE-Turkey	Med-FE	Dec	14	4	900	18,800
<b>Total new East/West services</b>				<b>19</b>	<b>109</b>	<b>4500</b>	<b>2,402,500</b>
North/South Trades							
Carriers/Consortium	Trade name	Trade	Month started	Frequency	Number of ships	Average TEU per ship	Annual TEU capacity
ZIM	C3A	NEA-Australia	Jan	7	7	1,350	56,300
X-Press Feeders	SIX	SEA-ISC	Jan	7	3	400	16,700
Kalypso	Salgari	Med-ISC	Feb	24	2	1,200	14,600
PIL, T.S. Lines, SeaLead, Yang Ming	SAE	NEA-Australia	Mar	7	6	4,200	175,200
Gold Star, Hapag-Lloyd, ONE, PIL	EA3	FE-EAF	Mar	7	7	3,000	125,100
Gold Star, Hapag-Lloyd, ONE, PIL	EAS	FE-EAF	Mar	7	7	2,000	83,400
Wan Hai	CI7	SEA-ISC	Mar	7	4	1,500	62,600
Interasia, PIL, RCL	CVI	FE-ISC	Apr	7	5	2,600	108,500
NPD	USA Fiji Direct	USA-Aus	Apr	60	1	2,600	12,700
Interasia	BTS	SEA-ISC	Apr	14	2	1,000	20,900
MSC	Bengal	FE-ISC	Apr	7	5	1,500	62,600
Unifeeder	MJI	ME/ISC-EAF	May	14	2	1,700	35,500
CoscoSL/OOCL, ANL	A3X	SEA-Australasia	May	7	5	4,200	175,200
CMA CGM	IEX	SEA-ISC	May	14	1	1,700	35,500
CMA CGM, CoscoSL	AXCA5	FE-WCSA	May	7	7	5,000	208,600
CUL, Emirates, GFS, RCL	RGA	SEA-ME	Jun	7	5	2,000	83,400
Modul	MIREX	Eur-ISC	Jun	50	1	1,100	6,400
MSC	NWC to Mexico Express	Eur-ECCA	Jun	7	6	2,700	112,600
PIL, Wan Hai, Yang Ming	WS6	FE-WCSA	Jul	7	10	3,300	137,700
Far Shipping	Straits-Bangladesh	Sea-ISC	Jul	14	1	900	18,800
CoscoSL/OOCL, ANL	AGI2	SEA-ME/ISC	Aug	14	2	2,200	45,900
Gold Star	IAX	ISC-EAF	Aug	7	3	1,100	45,900
Asean Seas Line	ACX	NEA-Australia	Sep	19	2	350	5,400
Safeen Feeders	China-UAE	FE-ME	Sep	21	1	900	12,500
CoscoSL/OOCL	BAE	FE-Australasia	Nov	7	5	2,200	91,800
MSC	India-West Med	ISC-Med	Dec	7	7	5,000	208,600
ZIM	TFX	SEA-Aus	Dec	7	7	2,200	91,800
<b>Total new North/South services</b>				<b>19</b>	<b>93</b>	<b>21,500</b>	<b>1,998,900</b>
Regional Trades							
Carriers/Consortium				Number of services	Number of ships	Average TEU per ship	Annual TEU capacity
Intra-Africa				4	4	1,100	184,000
Intra-Far East				55	114	1,400	2,621,000
Intra-Australasia				5	8	1,700	309,000
Intra-Americas				9	15	7,500	1,406,000
Intra-Europe				11	14	800	351,000
Intra-Mediterranean				28	50	1,100	1,192,000
intra-Middle East/ISC				12	15	1,500	546,000
<b>Total new regional services</b>				<b>124</b>	<b>220</b>	<b>1,700</b>	<b>6,608,500</b>

**Figure 5**  
**EAST-WEST ALLIANCES**

Alliance name	Partners
2M (to be dissolved in 2025)	Maersk Line, MSC
Ocean Alliance	CMA CGM, CoscoSL/OOCL, Evergreen
THE Alliance	Hapag-Lloyd, HMM, ONE, Yang Ming

**Figure 6**  
**ALLIANCES FLEET AND CAPACITY SUMMARY BY CARRIER**

2M					
Operator	Ships	TEU	Average	Share ships	Share TEU
Maersk Line	136	1,696,200	12,500	62%	56%
MSC	84	1,335,500	15,900	38%	44%
<b>Total</b>	<b>220</b>	<b>3,032,000</b>	<b>13,800</b>	<b>100%</b>	<b>100%</b>
Ocean Alliance					
Operator	Ships	TEU	Average	Share ships	Share TEU
CMA CGM	125	1,643,700	13,100	40%	39%
CoscoSL/OOCL	104	1,414,000	13,600	33%	34%
Evergreen	83	1,137,300	13,700	27%	27%
<b>Total</b>	<b>312</b>	<b>4,195,000</b>	<b>13,400</b>	<b>100%</b>	<b>100%</b>
THE Alliance					
Operator	Ships	TEU	Average	Share ships	Share TEU
Hapag-Lloyd	60	759,300	12,700	25%	26%
HMM	30	546,000	18,200	13%	19%
ONE	98	1,065,200	10,900	42%	37%
Yang Ming	48	530,100	11,000	20%	18%
<b>Total</b>	<b>236</b>	<b>2,901,000</b>	<b>12,300</b>	<b>100%</b>	<b>100%</b>

**Notes:**  
• As per mid-2023

**Figure 7**  
**ALLIANCES FLEET AND CAPACITY COMPARED TO CARRIER'S FLEETS**

2M						
Operator	Total fleet		Alliance fleet		Alliance deployed share	
	Ships	TEU	Ships	TEU	Ships	TEU
Maersk Line	682	4,127,000	136	1,696,200	20%	41%
MSC	759	5,073,000	84	1,335,500	11%	26%
<b>Total</b>	<b>1,441</b>	<b>9,200,000</b>	<b>220</b>	<b>3,032,000</b>	<b>15%</b>	<b>33%</b>
Ocean Alliance						
Operator	Total fleet		Alliance fleet		Alliance deployed share	
	Ships	TEU	Ships	TEU	Ships	TEU
CMA CGM	628	3,486,000	125	1,643,700	20%	47%
CoscoSL/OOCL	465	2,937,000	104	1,414,000	22%	48%
Evergreen	211	1,657,000	83	1,137,300	39%	69%
<b>Total</b>	<b>1,304</b>	<b>8,080,000</b>	<b>312</b>	<b>4,195,000</b>	<b>24%</b>	<b>52%</b>
THE Alliance						
Operator	Total fleet		Alliance fleet		Alliance deployed share	
	Ships	TEU	Ships	TEU	Ships	TEU
Hapag-Lloyd	254	1,852,000	60	759,300	24%	41%
HMM	72	792,000	30	546,000	42%	69%
ONE	214	1,618,000	98	1,065,200	46%	66%
Yang Ming	93	706,000	48	530,100	52%	75%
<b>Total</b>	<b>633</b>	<b>4,968,000</b>	<b>236</b>	<b>2,901,000</b>	<b>37%</b>	<b>58%</b>

**Notes:**  
• As per mid-2023

**Figure 8**  
**ALLIANCES FLEET AND CAPACITY SUMMARY BY TRADE**

**Alliances fleet and capacity summary**

Trade lanes	Totals		2M		Ocean Alliance		THE Alliance		Other	
	Ships	Capacity	Ships	Capacity	Ships	Capacity	Ships	Capacity	Ships	Capacity
Transatlantic (North Europe)	83	491,000	19	125,000	13	103,000	27	170,000	24	93,000
Transatlantic (Mediterranean)	77	482,000	17	138,000	3	25,000	3	26,000	54	293,000
Far East-North Europe	201	3,655,000	63	1,213,000	77	1,552,000	49	843,000	12	47,000
Far East-Mediterranean	116	1,656,000	38	750,000	41	450,000	29	423,000	8	33,000
Transpacific (West Coast)	219	2,151,000	20	252,000	78	814,000	64	636,000	57	450,000
Transpacific (East Coast)	266	2,520,000	63	554,000	82	999,000	43	584,000	78	383,000
Middle East (Gulf)	87	705,000	0	0	9	134,000	15	182,000	63	390,000
Middle East (Red Sea)	18	180,000	0	0	9	119,000	6	37,000	3	24,000
<b>Totals</b>	<b>1067</b>	<b>11,840,000</b>	<b>220</b>	<b>3,032,000</b>	<b>312</b>	<b>4,195,000</b>	<b>236</b>	<b>2,901,000</b>	<b>299</b>	<b>1,713,000</b>

**Alliance shares per Trade Lane**

Trade lanes	Totals		2M		Ocean Alliance		THE Alliance		Other	
	Ships	Capacity	Ships	Capacity	Ships	Capacity	Ships	Capacity	Ships	Capacity
Transatlantic (North Europe)	100%	100%	23%	26%	16%	21%	33%	35%	29%	19%
Transatlantic (Mediterranean)	100%	100%	22%	29%	4%	5%	4%	5%	70%	61%
Far East-North Europe	100%	100%	31%	33%	38%	42%	24%	23%	6%	1%
Far East-Mediterranean	100%	100%	33%	45%	35%	27%	25%	26%	7%	2%
Transpacific (West Coast)	100%	100%	9%	12%	36%	38%	29%	30%	26%	21%
Transpacific (East Coast)	100%	100%	24%	22%	31%	40%	16%	23%	29%	15%
Middle East (Gulf)	100%	100%	0%	0%	10%	19%	17%	26%	72%	55%
Middle East (Red Sea)	100%	100%	0%	0%	50%	66%	33%	20%	17%	13%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>21%</b>	<b>26%</b>	<b>29%</b>	<b>35%</b>	<b>22%</b>	<b>24%</b>	<b>28%</b>	<b>14%</b>

**Trade Lane shares per Alliance**

Trade lanes	Totals		2M		Ocean Alliance		THE Alliance		Other	
	Ships	Capacity	Ships	Capacity	Ships	Capacity	Ships	Capacity	Ships	Capacity
Transatlantic (North Europe)	8%	4%	9%	4%	4%	2%	11%	6%	8%	5%
Transatlantic (Mediterranean)	7%	4%	8%	5%	1%	1%	1%	1%	18%	17%
Far East-North Europe	19%	31%	29%	40%	25%	37%	21%	29%	4%	3%
Far East-Mediterranean	11%	14%	17%	25%	13%	11%	12%	15%	3%	2%
Transpacific (West Coast)	21%	18%	9%	8%	25%	19%	27%	22%	19%	26%
Transpacific (East Coast)	25%	21%	29%	18%	26%	24%	18%	20%	26%	22%
Middle East (Gulf)	8%	6%	0%	0%	3%	3%	6%	6%	21%	23%
Middle East (Red Sea)	2%	2%	0%	0%	3%	3%	3%	1%	1%	1%
<b>Totals</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

- Notes:**
- As per mid-2023
  - Capacity is total shipboard capacity deployed along the route



**Figure 9**  
**ANNUAL TRADE CAPACITY: EAST-WEST TRADES**

North Europe-Far East								Mediterranean-Far East							
Year	Number		Capacity (TEU)			Growth		Year	Number		Capacity (TEU)			Growth	
	Services	Ships	Average	Shipboard	Trade	%	Services		Ships	Average	Shipboard	Trade	%		
Jul-22	21	231	16,400	3,788,800	12,245,100	3.6	Jul-22	12	120	13,600	1,633,000	5,523,900	6.1		
Jul-21	18	218	17,300	3,778,800	11,820,000	17.4	Jul-21	10	108	14,400	1,558,700	5,204,400	2.5		
Jul-20	16	210	16,600	3,480,000	10,066,000	-11.1	Jul-20	11	120	12,900	1,547,000	5,075,000	-10.8		
Jul-19	19	233	15,200	3,546,000	11,327,900	3.9	Aug-19	12	125	12,600	1,578,900	5,687,600	1.9		
Aug-18	19	205	15,500	3,182,000	10,902,000	9.0	Aug-18	13	141	11,100	1,571,000	5,582,000	1.0		
Ave '20-16	24	259	10,700	2,768,100	9,819,300	13.6	Ave '20-16	18	187	7,800	1,450,800	5,060,100	8.7		
Ave '15-'11	31	277	8,900	2,476,800	8,643,800	-	Ave '15-'11	24	209	5,600	1,163,000	4,653,300	-		

Above refers to annual trade capacity based upon homogenous vessel capacity at 80% of nominal (vessel) space and as adjusted to exclude non-core ports

North Europe-North America								Mediterranean-North America							
Year	Number		Capacity (TEU)			Growth		Year	Number		Capacity (TEU)			Growth	
	Services	Ships	Average	Shipboard	Trade	%	Services		Ships	Average	Shipboard	Trade	%		
Dec-22	20	136	6,300	851,400	2,958,200	9.0	Sep-22	68	485	8,300	4,014,800	18,154,700	-1.2		
Dec-21	18	135	6,700	903,700	2,714,200	0.2	Aug-21	62	470	8,600	4,057,000	18,375,100	31.0		
Dec-20	17	131	6,300	820,400	2,709,900	8.8	Aug-20	46	387	9,300	3,589,300	14,029,500	8.0		
Dec-19	16	122	6,200	753,200	2,491,800	-1.7	Sep-19	45	366	8,700	3,199,600	12,989,800	-1.8		
Dec-18	16	117	6,100	716,000	2,534,000	6.8	Sep-18	46	352	8,400	2,963,000	13,231,000	-3.8		
Ave '20-16	16	118	6,000	703,600	2,433,680	33.2	Ave '20-16	46	372	8,500	3,164,220	13,480,460	8.8		
Ave '15-'11	17	126	4,700	593,880	1,826,980	31.7	Ave '15-'11	48	354	6,800	2,388,300	12,386,120	12.8		

Above refers to annual trade capacity based upon homogenous vessel capacity at 80% of nominal (vessel) space and as adjusted to exclude non-core ports. North America here = Canada + United States, all coastlines

Far East-North America West Coast								Far East-North America East Coast							
Year	Number		Capacity (TEU)			Growth		Year	Number		Capacity (TEU)			Growth	
	Services	Ships	Average	Shipboard	Trade	%	Services		Ships	Average	Shipboard	Trade	%		
Sep-22	68	485	8,300	4,014,800	18,154,700	-1.2	Sep-22	30	309	9,200	2,843,000	9,871,600	24.3		
Aug-21	62	470	8,600	4,057,000	18,375,100	31.0	Aug-21	23	249	9,600	2,396,400	7,943,000	11.0		
Aug-20	46	387	9,300	3,589,300	14,029,500	8.0	Sep-20	19	211	10,000	2,105,000	7,158,400	15.7		
Sep-19	45	366	8,700	3,199,600	12,989,800	-1.8	Sep-19	19	209	9,900	1,868,200	6,185,100	6.6		
Sep-18	46	352	8,400	2,963,000	13,231,000	-3.8	Sep-18	18	197	9,000	1,769,000	5,800,000	3.7		
Ave '20-16	46	372	8,500	3,164,220	13,480,460	8.8	Ave '20-16	19	210	8,600	1,809,360	6,001,920	41.0		
Ave '15-'11	48	354	6,800	2,388,300	12,386,120	12.8	Ave '15-'11	22	233	5,600	1,301,500	4,255,860	28.5		

Above refers to annual trade capacity based upon homogenous vessel capacity at 80% of nominal (vessel) space and as adjusted to exclude non-core ports. Services refers to weekly sailings and count all vessels allocated to multi-trade pendulums



**Figure 10**  
**ANNUAL TRADE CAPACITY: EUROPE TRADES**

North Europe-Indian Subcontinent							Mediterranean-Indian Subcontinent						
Year	Number		Capacity (TEU)			Growth %	Year	Number		Capacity (TEU)			Growth %
	Services	Ships	Average	Shipboard	Trade			Services	Ships	Average	Shipboard	Trade	
Feb-23	9	66	7,700	511,400	1,488,400	12.6	Feb-23	8	52	6,500	336,500	898,500	-12.6
Mar-22	6	52	8,400	438,700	1,322,400	10.3	Mar-22	10	70	6,700	467,600	1,028,500	11.3
Mar-21	5	40	9,900	395,000	1,198,400	-0.5	Mar-21	8	63	7,000	441,100	924,200	38.9
Feb-20	5	42	9,600	402,700	1,203,900	18.0	Feb-20	6	47	6,700	315,600	665,400	-5.8
Mar-19	4	32	10,300	330,800	1,020,200	9.7	-	-	-	-	-	-	-
Ave '20-16	4	35	9,500	337,840	991,140	36.1	-	-	-	-	-	-	-
Ave '15-'11	6	42	6,000	248,400	728,000	29.1	-	-	-	-	-	-	-
Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 80% of nominal (vessel) space and as adjusted to exclude non-core ports							Annual Trade Capacity based upon homogenous vessel capacity at 80% of nominal (vessel) space and as adjusted for multipurpose ships and non-core ports. Also includes services that pass through the Mediterranean en route North America and back.						
North Europe-West Arrica							Mediterranean-West Africa						
Year	Number		Capacity (TEU)			Growth %	Year	Number		Capacity (TEU)			Growth %
	Services	Ships	Average	Shipboard	Trade			Services	Ships	Average	Shipboard	Trade	
Mar-23	10	50	3,000	149,600	813,600	15.6	Mar-23	7	30	2,600	78,300	450,000	16.4
Mar-22	10	52	2,400	127,300	703,700	-13.2	Mar-22	7	30	2,400	73,400	386,500	-10.7
Mar-21	11	53	2,700	140,900	810,800	5.7	Mar-21	6	28	2,700	74,400	433,000	-5.3
Mar-20	12	55	2,500	137,200	767,200	-12.2	Mar-20	7	33	2,600	86,400	457,100	1.6
Mar-19	13	67	2,600	172,600	873,900	11.2	Mar-19	7	31	2,500	78,100	450,100	-
Ave '20-16	12	66	2,300	152,680	749,360	4.8	Ave '20-16	46	372	8,500	3,164,220	13,480,460	8.8
Ave '15-'11	18	84	1,700	147,000	715,200	29.5	Ave '15-'11	48	354	6,800	2,388,300	12,386,120	12.8
Annual Trade Capacity based upon homogenous vessel capacity at 70% of nominal (vessel) space and as adjusted for multipurpose ships and non-core ports							Annual Trade Capacity based upon homogenous vessel capacity at 70% of nominal (vessel) space and as adjusted for multipurpose ships and non-core ports						
North Europe-East Coast South America							North Europe-West Coast South America						
Year	Number		Capacity (TEU)			Growth %	Year	Number		Capacity (TEU)			Growth %
	Services	Ships	Average	Shipboard	Trade			Services	Ships	Average	Shipboard	Trade	
Nov-22	4	28	7,000	195,300	728,700	2.3	Jun-22	6	48	5,300	254,000	742,100	4.5
Nov-21	4	27	6,800	182,400	712,400	-1.6	Jun-21	7	58	4,800	280,600	709,900	8.8
Apr-20	4	27	6,700	182,200	724,000	0.5	Jun-20	7	56	4,700	262,300	652,600	-6.9
Apr-19	4	29	6,300	182,500	720,400	-1.2	Jun-19	8	62	4,200	261,700	701,100	-1.8
Apr-18	4	30	6,000	181,000	729,400	-20.8	Jun-18	7	56	4,500	251,500	714,300	-
Ave '20-16	4	31	6,200	194,220	799,900	-14.0	Ave '20-16	19	210	8,600	1,809,360	6,001,920	41.0
Ave '15-'11	6	43	4,500	195,800	930,200	3.2	Ave '15-'11	22	233	5,600	1,301,500	4,255,860	28.5
Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 70% of nominal (vessel) space and as adjusted to exclude non-core ports							Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 70% of nominal (vessel) space and as adjusted to exclude non-core ports						
North Europe-Caribbean							Mediterranean-Caribbean						
Year	Number		Capacity (TEU)			Growth %	Year	Number		Capacity (TEU)			Growth %
	Services	Ships	Average	Shipboard	Trade			Services	Ships	Average	Shipboard	Trade	
Sep-22	14	88	3,600	317,300	964,700	-7.3	Sep-22	6	43	5,800	251,300	359,300	-9.5
Sep-21	14	88	3,800	334,300	1,040,300	-0.9	Sep-21	6	48	6,200	296,400	397,100	-15.4
Sep-20	16	97	3,700	361,400	1,050,100	-8.3	Sep-20	7	56	5,000	280,100	469,300	15.4
Sep-19	16	97	3,900	378,300	1,144,600	10.0	Sep-19	7	55	4,500	246,300	406,700	-
Aug-18	14	82	3,800	313,000	1,041,000	-5.1	-	-	-	-	-	-	-
Ave '20-16	17	98	3,300	324,320	1,118,420	23.9	-	-	-	-	-	-	-
Ave '15-'11	18	105	2,000	210,800	902,840	38.4	-	-	-	-	-	-	-
Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 80% of nominal (vessel) space and as adjusted to exclude non-core ports. Services offering Caribbean connections en route South America and back also included							Services relates to average sailings per week and include wayport connections en route South America						

**Figure 11**  
**ANNUAL TRADE CAPACITY: NORTH AMERICA TRADES**

US East/Gulf Coast-East Coast South America						
Year	Number		Capacity (TEU)			Growth %
	Services	Ships	Average	Shipboard	Trade	
Apr-23	4	32	6,100	194,700	726,000	-2.6
Apr-22	4	31	6,200	193,400	745,000	-9.2
Apr-21	4	31	6,600	205,200	820,900	1.9
Apr-20	4	30	6,500	194,100	805,700	7.1
Apr-19	4	30	6,200	185,500	752,000	7.5
Ave '20-16	4	30	6,100	183,200	730,540	-0.7
Ave '15-'11	6	40	4,500	181,500	735,500	20.7
Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 80% of nominal (vessel) space and as adjusted to exclude non-core ports						

**Figure 12**  
**ANNUAL TRADE CAPACITY: FAR EAST TRADES**

Far East-East Coast South America							Far East-West Coast South America						
Year	Number		Capacity (TEU)			Growth %	Year	Number		Capacity (TEU)			Growth %
	Services	Ships	Average	Shipboard	Trade			Services	Ships	Average	Shipboard	Trade	
Jun-22	5	58	8,600	501,500	1,472,600	19.0	Jun-22	12	122	8,200	999,600	2,657,900	4.3
Jun-21	4	46	9,300	429,200	1,237,800	4.5	Jun-21	10	107	8,800	942,000	2,549,300	14.7
Jun-20	4	47	8,900	419,300	1,184,100	2.2	Jun-20	9	97	8,600	836,800	2,222,600	-6.5
Jun-19	4	49	8,200	402,000	1,158,700	2.1	Jun-19	10	107	8,200	882,000	2,377,500	-8.0
Jun-18	4	49	8,100	397,000	1,135,000	15.3	Jun-18	10	108	8,600	925,000	2,585,200	-
Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 70% of nominal (vessel) space and as adjusted to exclude non-core ports							Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 70% of nominal (vessel) space and as adjusted to exclude non-core ports						
NE Asia-Australia/New Zealand							SE Asia-Australia/New Zealand						
Year	Number		Capacity (TEU)			Growth %	Year	Number		Capacity (TEU)			Growth %
	Services	Ships	Average	Shipboard	Trade			Services	Ships	Average	Shipboard	Trade	
Nov-22	21	113	3,900	439,600	2,929,600	18.6	Nov-22	16	72	4,200	301,800	2,192,600	-7.8
Nov-21	16	82	4,500	373,000	2,470,500	17.0	Nov-21	17	70	4,500	313,900	2,377,700	7.7%
Nov-20	13	68	4,700	321,600	2,111,100	8.8	Nov-20	14	62	4,800	299,600	2,208,400	10.0
Nov-19	12	61	4,600	278,800	1,940,000	-	Nov-19	13	61	4,600	281,000	2,007,400	-
Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 70% of nominal (vessel) space and as adjusted to exclude non-core ports													
Far East-West Africa													
Year	Number		Capacity (TEU)			Growth %							
	Services	Ships	Average	Shipboard	Trade								
Jul-22	8	96	5,900	564,700	1,583,800	2.7							
Jul-21	8	102	5,600	571,300	1,541,500	-4.2							
Jul-20	8	105	6,200	650,600	1,609,000	13.8							
Jun-19	8	96	5,600	539,100	1,413,900	2.1							
Jun-18	8	96	5,600	539,000	1,385,200	-1.1							
Above refers to Annual Trade Capacity based upon homogenous vessel capacity at 70% of nominal (vessel) space and as adjusted to exclude non-core ports													

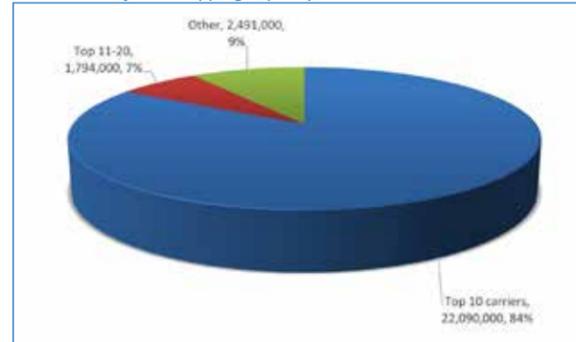
## COMPANIES

### CARRIERS

#### The largest carriers

At the end of 2022, the ten largest carriers by capacity controlled a fleet able to lift 22.1 million containers (TEU). This was an increase of 770,000 TEU compared with one-year earlier. The global share of the ten largest carriers remained steady at eighty-four percent. Those ranked eleventh to twentieth had a seven percent share arising from the 1.8 million TEU that they controlled. All told, the top twenty carriers now operated 23.9 million TEU, good for a share of ninety-one percent.

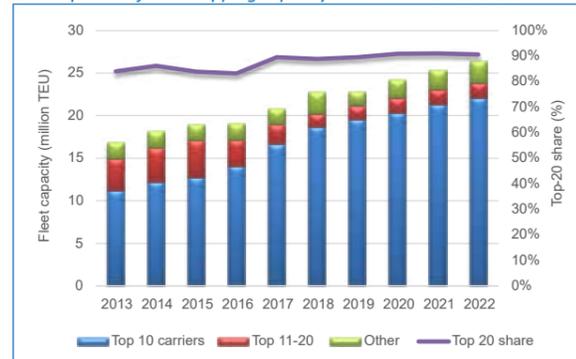
Distribution of liner shipping capacity end-2022



Figures based upon data sourced from Alphaliner

Over the past decade, the absolute and relative capacities provided by the largest carriers has continuously increased. With there being no major consolidation event since 2016, this has been due more to organic growth of late. This is a natural development as the largest carriers deploy the biggest ships, and each year seemingly brings a new record holder for the biggest ship in the world. Nowadays a number of the largest carriers are deploying multiple vessels in excess of 24,000 TEU, with many approaching that threshold. Just one ship of 24,000 TEU would, at the end of 2022, have been good enough for 45th place in the capacity ranking. A flotilla of two would have been equivalent to 33rd spot.

Development of liner shipping capacity distribution 2012-2021



Major developments involving carriers and groupings of all sizes, not just the top 20, are summarised below. Fleet, capacity and rankings in between brackets relate to year-end 2022. The carriers are discussed in capacity rank order.

#### MSC - Reaching number one and flying

(Rank - 1; Ships - 714; Capacity - 4,598,000 TEU)

At the start of 2022, the inevitable happened and MSC became the largest container shipping company by capacity as it over-

took Maersk. This happened after the delivery of the 5,000 TEU "Mexico", a second-hand ship it had agreed to buy six months earlier.

To become number one was a remarkable achievement by MSC. Aside from it acquiring a controlling stake in the small coastal operator Log-In Logistica of Brazil, its growth was organic. Further, MSC only launched its first full container shipping service in 1986.

After becoming the largest carrier, and admittedly because of differing fleet policies, by the end of 2022, MSC had further opened the gap on Maersk to 379,000 TEU. This difference exceeded Maersk's entire orderbook.

As a group, MSC also completed the acquisition of Bolloré Africa Logistics (BAL) in 2022. Contrary to expectations, BAL's twenty different terminal concessions, nearly all of which are located in West Africa, were not folded into MSC's own Terminal Investments Limited. Instead, BAL was kept as a distinct entity and thereby retained the numerous port agency, logistics and rail concession activities that also formed part of its operation portfolio. At the end of 2023's first quarter, BAL was relaunched as Africa Global Logistics.

In 2022, MSC announced the establishment of MSC Air Cargo. In 2023, it will receive the first of what will be four MSC branded new Boeing 777-200F aircraft chartered-in from Atlas Air Worldwide, who will also provide technical management and operations.

MSC Air Cargo branded Boeing 777-200F



The move into airfreight followed a similar one made by CMA CGM in 2021. These same two shipping lines also played a parallel game with legacy airlines in 2022. The major difference was that MSC and Lufthansa's joint attempt to buy into ITA Airways, the successor to Alitalia of Italy, proved unsuccessful, unlike CMA CGM's move into Air France-KLM.

According to local press, at the start of 2023, MSC sold its still young MedTug unit to Boluda Corporacion of Spain. In return, it was suggested that MSC received a 15.6% stake in the much more substantial Boluda Towage. Late in 2022, MSC's investment holding arm had already agreed to acquire tugs and towage provider Rimarchiatori Mediterranei, whose operations cover Italy, Malta, Singapore, Malaysia, Norway, Greece and Colombia. Approval for this deal was received from the relevant authorities early the following year.

#### Maersk - Big Blue now number two

(Rank - 2; Ships - 706; Capacity - 4,219,000 TEU)

At the very start of 2022, Maersk lost its long-held position as the largest container shipping operator in the world to MSC. It had been clear for a some time that this would happen and was by no means a surprise other, perhaps, than that it had not



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occurred sooner. Since the changeover, Maersk has remained the clear second largest, although the gap with MSC continued growing and looks like it will carry on doing so for a long time to come.

There was a generational change at the very top of the A.P. Moller-Maersk company with Mr. Robert Maersk Uggla becoming the new chair of the board. He is the great-great grandson of the company's founder, Mr. Peter Maersk Moller, and replaced the retiring incumbent, who also happens to be his mother, Ms. Ane Maersk Mc-Kinney Uggla. Mr. Uggla was already the CEO of A.P. Moller Holding, which takes care of the family interests in A.P. Moller-Maersk, Maersk Tankers and Maersk Drilling, amongst others.

At the start of 2023, a new senior management team took over at Maersk with Mr. Vincent Clerc replacing Mr. Soren Skou as CEO. There followed an immediate corporate and structural reorganisation into fifteen roles and responsibilities (that had clearly been in preparation).

One of the first moves of the new leadership team was to announce the consolidation of its separate Maersk, SeaLand and Hamburg Süd shipping brands into the unified "Maersk" identity. Group aspects not forming part of its integrated logistics strategy as tugs/towage provider Svitzer and Maersk Container Industry were excluded from the rebranding process, which is expected to take place over an extended period.

Ultimately, these other elements will be divested, perhaps across to A.P. Moller Holding, which is what happened later in 2023 to Maersk Supply Service. As for Maersk Container Industry, it still remains with Maersk after United States regulatory authorities blocked, in 2022, the agreed sale to CIMC, the world's largest container manufacturer.

One pathway that each of the three largest container shipping companies is undertaking is building own airfreight arms. In reality, Maersk already had its own operator in Star Air whose activities were transferred in 2022 to the newly formed Maersk Air Cargo. Star Air operated a mixed owned/chartered fleet of fifteen Boeing freighters, some of which worked on behalf of companies as UPS and the UK's Royal Mail. The physical operations hub of the new Maersk Air Cargo was moved to Billund, Denmark's second largest airport.

Maersk Air Cargo freighter



Aside from building its airfreight operations further, Maersk also continued its established strategy of evolving into an integrated container logistics group. To that end, it completed the 2021 agreed acquisition of LF Logistics. The target was active within the Asia Pacific region and represented a substantial deal, not only for the USD 3.6 billion price but also for bringing a network of 223 warehouses and 10,000 staff. LF Logistics was later rebranded into Maersk (2023).

### CMA CGM - Spending freely and widely

(Rank – 3; Ships – 595; Capacity – 3,393,000 TEU)

With a combined 2021 and 2022 net profit approaching USD 43 billion, only a few billion short of its shipping revenue for 2021, CMA CGM clearly had cash to spare and it was willing to spend it. A start was made in 2021, after more prosaic disbursements to alleviate its debts and to invest in new tonnage, when it moved into direct airfreight operations with the purchase of four Airbus A330-200F freighters. This built upon other airfreight related investments already made.

These investments in the air sector were further consolidated in 2022 when CMA CGM entered a strategic cooperation with, and, at the same time, became a so-called "reference shareholder" of the Air France-KLM group. This is the combination of the legacy national carriers of France and the Netherlands.

Commercial cooperation came in the form of a ten-year agreement to combine their fleets of full-freighter aircraft, four from CMA CGM and six from Air France-KLM. The agreement allows for the expansion of this fleet from outstanding orders (eight and four respectively) and also includes access to the "belly capacity" of the Air France-KLM passenger fleet of 160 units. As a "reference shareholder", CMA CGM committed to acquiring a nine percent stake in its new partner.

This was but a taste of CMA CGM's very acquisitive year, for throughout 2022 (and into 2023) it expanded its footprint in a number of sectors. Most remarkable, perhaps, was its entrance into the media. After a protracted process, it bought eighty-nine percent of Marseilles-based regional newspaper La Provence after the previous owner of that stake had died. It followed this up with the purchase of another paper that year, Corse Matin.

Rodolphe Saadé, CMA CGM

"...Don't look for any complex reasons: I read the paper and I like it. La Provence is on sale, so I went for it..."

Further acquisitions expanded what is now called "CMA CGM Medias". Late in 2022, CMA CGM confirmed it had acquired more than five percent - later clarified by others as ten percent - of M6, the second largest commercial broadcaster in France. It had been associated earlier in the year with an apparently failed consortium bid to take a forty-eight percent share. In April 2023, CMA CGM added online youth media platform Brut having participated in that outlet's latest funding round. Then, in mid-2023, it was announced CMA CGM would purchase the parent of La Tribune, a daily business paper and online resource present in France and Africa.

Another area that CMA CGM continued to build up was something more traditional and definitely more closely related for a shipping company, that of logistics. Early in 2022, it acquired Colis Privé, active in France as a last mile parcel collection and delivery company for both the private individual and corporate sectors.

This was followed soon afterwards with the purchase of GEFCO, an automotive logistics provider. The position of this company became complicated after the Russian invasion of Ukraine, as it was three-quarters owned by the state-owned Russian railways RZD, with the other 25% in the hands of car manufacturer Stellantis. CMA CGM ended up with close to 100% of Gefco and with it, control over a fleet of 3,000 railcars and thirty vehicle logistics centres.

The acquisition was actually carried out by CMA CGM's subsidiary CEVA Logistics into whom GEFCO was integrated. This deal also heralded a wider diversion into the shipping Ro/Ro sector, with reports early in 2023 that CMA CGM had chartered four

pure car/truck carriers for ten years. These will be operated by the new division created within CEVA by the GEFCO acquisition.

Robert Yildirim, Yildirim Group, shareholder in CMA CGM

"...I am very happy with the performance of CMA CGM... I have changed my mind and will stay as long as the Saadé family stays..."

More traditionally for a container shipping company, CMA CGM continued building up its terminal portfolio. First off, it re-acquired the ninety percent it did not own in the Fenix Marine Terminal in Los Angeles. Then, late in 2022, it agreed to purchase the New York and New Jersey (Bayonne) facilities that fell under Global Container Terminals.

Its appetite clearly not dimmed, in the first half of 2023, CMA CGM moved to acquire the Bollore Logistics assets and activities not included in the MSC/Bollore Africa Logistics deal. Other deals planned by CMA CGM were a twelve percent share in Brittany Ferries (France-UK-Spain, in return for financial support given during the COVID pandemic) and the takeover of another ferry company, La Méridionale (France-Corsica, Tangier).

CMA CGM Air Cargo plane



### Hapag-Lloyd - Busy buying, not just shipping

(Rank – 5; Ships – 248; Capacity – 1,783,000 TEU)

On the corporate front, short-term stability was ensured regarding ownership of Hapag-Lloyd. The three controlling shareholders, Kuhne Maritime, CSAV and the City State of Hamburg agreed to extend their alliance a further two years to the end of 2026. This was originally put in place to prevent the sale of, separation of or movements out of Hamburg (parts of) the company. Combined, these three shareholders control close to seventy-four percent of Hapag-Lloyd.

In 2021, Hapag-Lloyd acquired West Africa trades specialist NileDutch and followed this up in 2022 by purchasing another Africa specialist, Deutsche Afrika Linien (DAL) of Hamburg. This company was a founding member of the "SAECS" service between North Europe and South Africa, the successor of which it contributed a 6,600 TEU vessel to. It also operated a container equipment fleet of around 17,800 boxes.

DAL - a small but much (his)storied carrier

The origins of DAL go back to 1892 and the and the creation of Deutsche Ost-Afrika Linien (DOAL), its maiden voyage being a steamer that ran to South Africa via the Suez Canal and East Africa. It was taken over by Mr. John T Esseberger in 1941 and kept as part of the group that he built up. After his death in 1959, the group was carried on by his daughter, it including aspects by then as liquid bulk shipping.

DOAL remained true to its conventional liner routes until containerisation forced its way into the trades. As such, it was a founder member of the 1978-established "SAECS" consortium together with Safmarine and Nedlloyd and which also saw DOAL change into DAL. The "SAECS" partners provided a container shipping service between North Europe and Southern Africa

DAL also had an established presence on the Indian Ocean Islands trades, especially after acquiring Scandinavian East Africa Line (SEAL) in 1981, although DAL's services along this route had been ensured for years through slots. Thirty years after purchasing SEAL, DAL also took over Mauritius based United Africa Feeder Lines who was active along the Middle East/Indian Subcontinent-Southern Africa axis. However, UAFL was sold off in 2021.

As well as consolidating its position in the Africa trades, Hapag-Lloyd began taking significant steps to build up its terminal portfolio. At the start of 2022, its involvement in container terminals were limited to a long-held 25.1% stake in Container Terminal Altenwerder (Hamburg) and a more recent ten percent share of Tangier Alliance Terminal (2019).

Expansion started in 2022 with the takeover, agreed the previous year, of Maersk's thirty percent share in Container Terminal Wilhelmshaven. Then, as 2022 progressed, Hapag-Lloyd agreed to purchase a forty-nine percent stake in the Spinelli Group of Italy, this deal taking effect early in 2023. Amongst other activities, Spinelli is active in terminals in Salerno and Genoa (two facilities).

At around the same time as the Spinelli announcement, Hapag-Lloyd agreed to buy SAAM of Chile's ports and logistics businesses for around USD 1.0 billion. SAAM is involved in eight container facilities in Chile (4), Honduras, Ecuador, Mexico and United States (one each). Completion of the deal was still pending, as per mid-2023, as it is undergoing prolonged scrutiny by Chile's relevant authority, La Fiscalía Nacional Económica. Incidentally, SAAM is also indirectly related to Hapag-Lloyd through CSAV, a major shareholder of the carrier; CSAV and SAAM have the same majority shareholder, Quinenco.

Finally, over the first four months of 2023, Hapag-Lloyd agreed and concluded the purchase of a forty percent share in JM Baxi Ports & Logistics of India. This company operates container terminals in Visakha, Kandla, Haldia and a multipurpose terminal in Paradip with concessions awarded for terminals in Nhava Sheva and Tuticorin.

Carrier non-liner investments 2022

Target	Sector (coverage)	Buyer
Air France-KLM (9%)	Air passenger & freight (global)	CMA CGM
Colis Privé (100%)	Last mile parcel logistics (France)	CMA CGM
GEFCO (nearly 100%)	Automotive logistics (international)	CMA CGM
La Provence (89%)	Media (newspaper, France regional)	CMA CGM
M6 (10%)	Media (television, France national)	CMA CGM
JM Baxi Ports (40%)**	Terminal operations (India)	Hapag-Lloyd
SAAM (port terminal ops)*	Terminal operations (Americas)	Hapag-Lloyd
Spinelli Group (49%)	Terminal operations, logistics (Italy)	Hapag-Lloyd
LF Logistics	Distribution & warehousing	Maersk
Martin Bencher Group**	Project logistics & transport	Maersk
Pilot Freight Services	Logistics & transport (international)	Maersk
Mediclinic (50%)	Private hospitals (South Africa)	MSC
Rimarchiatori Mediterranei	Tugs and towage (international)	MSC

Notes: \*Announced/agreed not completed; \*\*Agreed 2022, completed 2023

### AD Ports Group - jumping into shipping

(virtual Rank – 22; Ships – 36; Capacity – 92,400 TEU)

Terminal operator AD Ports of Abu Dhabi, United Arab Emirates, had a very interesting corporate 2022. In some ways, parallels could be drawn with its much larger and more well-known neighbour, Dubai Ports, and as a result, could also provide a template for further developments.

Early in the year, AD Ports listed on the Abu Dhabi stock exchange. It followed this by taking controlling positions in two established carriers. The first was the seventy percent stake acquired in International Associated Cargo Carrier (IACC), parent of Egypt based carrier Transmar and stevedore Transcargo International (TCI).

This was AD Ports' first overseas acquisition. Both companies centre their activities on the Egyptian Red Sea port of Adabiya with Transmar usually operating one/two ships linking with elsewhere in the Red Sea. In 2021, it carried 109,000 TEU.

The other acquisition was the eighty percent stake bought in Global Feeder Shipping. Established in 2017, this company's origins are believed to date from the effective break-up of the well-established feeder operator Simatech. This also saw the formation of Feedertech by one member of the founding and controlling family behind Simatech. Although not formally confirmed, it is believed that other members of the family were involved in Global Feeder Shipping.

Alongside these purchased parties, AD Ports also has its own organic carrier, Safeen Feeders, which was established in 2020. It had built up to a fleet of around ten ships running along the Middle East (Gulf)-Indian Subcontinent-Far East axis, adding this last aspect in 2022. Global Feeder now forms the largest shipping brand within AD Ports, employing between twenty-five to thirty ships connecting the Middle East (Gulf) with the Red Sea, Indian Subcontinent, East Africa and Far East. Late in 2022, it also entered the intra-Mediterranean trade.

### FESCO - and interesting year

(Rank 44; Ships – 20; Capacity – 26,100 TEU)

Counter-intuitively, Russia's FESCO benefitted from sanctions imposed upon its home country following the military confrontation with Ukraine. With many carriers now effectively barred from carrying all but the most humanitarian of cargoes to and from Russia, FESCO's liner shipping business saw a sixteen percent increase in carryings in 2022 to 423,000 TEU. This helped feed a twenty-seven percent rise in liner and logistics revenue to (a converted) USD 4.7 billion.

However, there were changes in its shareholders during 2022 when the largest of those, Mr. Ziyavudin Magamedov, controlling 32.5% of FESCO, was found guilty of criminal conduct and embezzlement and sentenced to nineteen years in prison. His shareholding was seized by the state, the intention being, reportedly, to sell this on at some point in time.

### Other operators

Cosco Shipping Holdings, parent of **CoscoSL** and **OOCL** (Rank 4; Ships – 468; Capacity – 2,872,000 TEU), engaged in an interesting equity swap with Shanghai Automotive Industry Corporation (SAIC). Towards the end of 2022, it acquired a 5.0% stake in SAIC who, in turn, received 5.8% in CoscoSH. Both parties are publicly-listed yet ultimately Chinese state-controlled. In a more commonplace share purchase, early in 2023, CoscoSH agreed to acquire a 5.8% stake in Cofco Fortune, the logistics and food processing arm of the Chinese state-owned agribusiness group, Cofco.

**Swire Shipping** (Rank – 28; Ships – 34; Capacity – 68,400 TEU), essentially a multipurpose liner operator, bought **Westwood Shipping** from owners Sumitomo Warehouse Co. of Japan. Westwood's antecedents were in the United States based forest products group, Weyerhaeuser, and provided liner services carrying these cargoes out to the Far East, returning with containers and other breakbulk items. Later in 2022, Swire entered into a long-term service co-operation with logistics provider J.B. Hunt on the Transpacific trade, with two vessels operated by Swire renamed to reflect the J.B. Hunt connections.

**Pacific International Lines** (Rank – 12; Ships – 91; Capacity – 297,000 TEU) discontinued its Southeast Asia-Indian Subcontinent range feeder brand, **Advance Container Line** in March 2022. There was no reduction in service coverage as Advance's loops were already included within PIL's overall offering.

**Bengal Tiger Line** and **Caribbean Feeder Services** (virtual Rank – 43; Ships – 21; Capacity – 21,600 TEU) were both purchased in 2022 by HICO Investment. This company was established a year earlier by Mr. Tim Hartnoll, the Executive Chairman of X-Press Feeders, the world's largest common feeder carrier (end-2022 Rank – 18; Ships – 83; Capacity – 130,200 TEU). Bengal Tiger was the smaller carrier of the two, operating at the time six ships to, from and within the Bay of Bengal. Caribbean Feeder operated thirteen ships.

Another corporate development saw **Ningbo Ocean Shipping** (Rank – 34; Ships – 50; Capacity – 43,300 TEU) list on the Shanghai Stock Exchange in the second half of 2022. Plans put forward early in the year for **China United Lines** (Rank – 23; Ships – 29; Capacity – 76,300 TEU) to list on the Hong Kong bourse were still pending. As the end of 2022 neared, Taiwan's **T.S. Lines** (Rank – 19; Ships – 50; Capacity – 110,000 TEU) also applied to list in Hong Kong.

Finally, at the end of 2022, and presaging what would be a few withdrawals from liner shipping, the division responsible for chartering vessels operated by **Allseas Shipping** (no rank, Europe-Far East trade) entered administration. This effectively ended the service that had started early in 2021 under the **DKT Allseas** banner. For a similar reason, **Focus Container Line** (no rank, trans-Tasman trade), followed at the start of 2023 as did **BAL Container Line** (end-2022 Rank – 89; Ships – 2; Capacity – 7,500 TEU; Transpacific with Mexico), who returned its final vessel.

### DynaLiners Shares Index

Overview, DLSI (whole index)

After the stellar and arguably over-inflated performance of 2021, it was always going to be difficult for the DynaLiners Shares Index to keep on going in the same vein in 2022. To be fair, it did manage this for the first four to five months before commencing a gradual decline until the final quarter of the year whereupon it stabilised. The year low point was an index score of 1,692 (week 40, October) with the highpoint of 2,603 occurring twenty weeks earlier (week 20, May).

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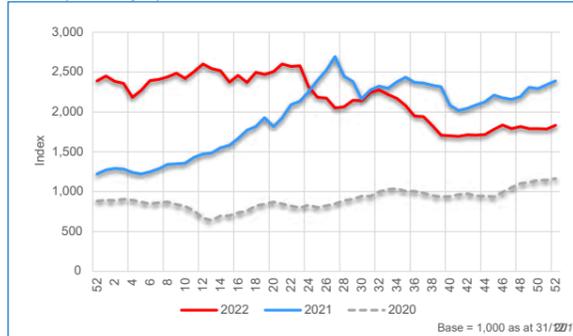
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Development of DynaLiners Shares Index 2022



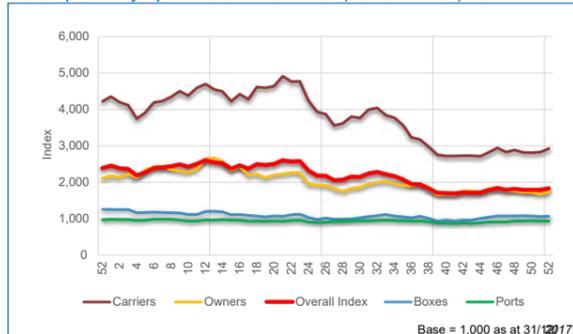
When looking at the year start and end points, the main index was down by 618 points to 1,832. All indices suffered with DLSI Carriers losing the most absolutely. It retreated by 1,424 points, around a third of its starting value, to finish on an admittedly still healthy 2,928.

DLSI Owners was the next in line following a 443 point drop (-20%) to finish on 1,731. DLSI Boxes shipped 188 points (-15%) to end the year on 1,066. In comparison, DLSI Ports got away relatively lightly as the 48 points it lost was only equivalent to five percent of the year-start figure. Yet, come end-2022, it was still the weakest of all indices with a modest score of 936.

#### Ex-dividend

Much of the downturn in the indices, especially DLSI Carriers, was a result of the substantial dividend payments made during 2022 (for the 2021 financial year). When a stock goes ex-dividend, it usually adjusts down by the amount of the dividend paid (per share).

Development of DynaLiners Shares Index (sector indices) 2022



#### DynaLiners Shares Index

Launched in 2019, the DynaLiners Shares Index tracks the share prices of around 130 companies involved in container shipping. The evolution of their share prices is placed into an index to gauge if not the health, then the (investor) perception and confidence in the container sector. The companies are weighted by a panel of Dynamar's editors, authors, consultants and analysts.

The qualification for participation in the index is that the listed company must be involved in at least one of the four container shipping segments of carriers, container boxes, ports/terminals and shipowners. If this is through a subsidiary, then the shareholding needs to be controlling. Thus, none of the "K" Line, MOL or NYK trio appear as they hold non-controlling minority stakes in ONE.

Each qualifying company is a member of the main and at least one of the sector indices. The start point for all indices is set at 1,000 and based upon closing prices for qualifying stocks as per end-2017. The index membership is reset every quarter to take into account IPOs, de-listings and shipping market changes that may require an amendment to a company's weighting.

## ALLIANCES

### Ocean Alliance (CMA CGM, CoscoSL/OOCL, Evergreen)

The Ocean Alliance had an initial duration of five years up to end-March 2022 until an option to extend this by another five was taken in 2019. Notice period to leave is one year and cannot be given until March 2026. Its service network covers the Transpacific, Far East-Europe, Transatlantic and the Far East-Middle East.

### THE Alliance (Hapag-Lloyd, HMM, ONE, Yang Ming)

THE Alliance, formally a vessel sharing agreement, had an initial duration of five years to April 2022 with one-year optional extension. It has been extended from 2022 to 2030 although any party can give twelve months' notice to leave after 1 April 2023. THE Alliance's service network covers the Transpacific, Far East-Europe, Transatlantic and the Far East-Middle East trades.

Since its creation, THE Alliance has changed composition. It brought Japan's three major carriers of "K" Line, MOL and NYK together as members of a single strategic grouping for the first time. They went on to form Ocean Network Express (ONE), which became operational in April 2018, and thereby replaced its three shareholders' in THE Alliance.

In April 2020, HMM joined THE Alliance. As a result, THE Alliance's network increased from twenty-nine to thirty-three services, ensured by 280 vessels instead of the previous 249. HMM also had to contribute USD 25 million to the grouping's contingency fund, which was established to meet container logistics costs should any member suddenly collapse. As a result of this injection, the fund rose to USD 75 million.

### 2M (Maersk Line, MSC)

The January 2015 launched 2M came together after Chinese regulatory authorities had blocked the formation of the even larger P3 Network. This would also have included CMA CGM, thereby bringing the then three largest carriers under one co-operative umbrella.

The 2M has an initial duration of ten years with a notice period of two years should one party wish to leave, although this can only take effect at the year-eight point even if issued before then. With these clauses to the agreement in mind, it was announced at the start of 2023 that the partnership would not be renewed beyond 2025.

Formally a vessel sharing agreement, the 2M's service network covers the Transpacific, Far East-Europe and Transatlantic. It has also included significant bilateral cooperation with carriers HMM and ZIM. For HMM, it helped bridge the period when it was sans alliance before it was able to join THE Alliance. The ZIM arrangement was initiated in 2018 and at its peak covered the Transpacific and Far East-Mediterranean trades. However, as from April 2022, the co-operation scaled back so that it now only covers the Transpacific (US East Coast) trade.

When considering why the 2M will come a natural close after a single ten-year term, one need initially to look at their respective fleet developments. From the time the 2M started up to the announcement of its pending dissolution, MSC added 216 ships and 2.06 million TEU to its fleet. In contrast, Maersk added 101 ships and 1.3 million TEU. As a result, MSC overtook Maersk to become the largest carrier in the world. The difference in their respective orderbooks, effective end-2022, also mean that the capacity gap between the two will only continue to grow.

The joint statement announcing the end of 2M also pointed to their "...individual strategies...". Alongside their fleets, these dif-

ferences in approach are also apparent at both operational and corporate levels.

Operationally, Maersk has never really avoided joint operations. For MSC, an independent streak has always been part of its culture, with any joint operations it was involved in borne out of necessary pragmatism. The 2015 formation of the 2M was the prime example of this.

Corporate strategies have also differed over the past decade. Maersk has removed its own vessels from the extremities of its network and has divested as many non-container activities and interests as possible. This is all part of its focus on being an integrated container supply chain provider, with divestments partially replaced by a number of logistics acquisitions.

In contrast, MSC has been both filling gaps in its service network and broadening its activities. It has achieved this by building up its extensive logistics operation (MedLog), enhancing its terminal portfolio, especially with the acquisition of Bollore Africa Logistics, establishing European railfreight activities (Medway), harbour tugs and towage (MedTug and then Boluda) and airfreight operations (MSC Air Cargo). Amongst all of this, Maersk's former COO, Mr. Soren Toft, is now MSC's CEO.

Considering MSC's fleet size and its orderbook, it clearly feels it is in a strong enough position to go alone. Maersk could be left in an awkward form of limbo by the breakup; too small to be truly independent but way too large to enter into an existing alliance for fear of upsetting current and undoubtedly delicate balances. Perhaps bilateral service agreements along selected routes with an alliance and/or individual carriers will be the way it goes.

## REGULATIONS (AND REGULATORS)

In mid-2022, the European Parliament adopted its own position on including shipping within the European Union's Emissions Trading System (ETS). Around two years earlier, the Parliament had already voted to include shipping within the wider

ETS. After consultation with industry stakeholders and the EU's executive arm, the European Commission, also proposing the inclusion of shipping within the ETS, a finalised solution was arrived at.

Essentially, as from 2025, forty percent of carbon dioxide emissions from intra-EU voyages and port stays reported in 2024 will fall under the ETS. This will require operators to buy EU carbon permits. The thresholds will rise to seventy percent in 2026 (for 2025 emissions) and one hundred percent in 2027 (for 2026). For voyages that start or end outside of the EU, the regulation will apply for half of all emissions as well as for all emissions when at berth in the EU. Those liable for the charges under the ETS are owners or operators who have responsibility for operational decisions that affect the vessel's (greenhouse gas) emissions.

In practise, there will be differences as to how the pricing mechanism will be applied to shipping in comparison with other sectors. Part of the revenues raised from ETS levies will actually be returned to shipping for investment into decarbonisation and energy efficiency research. This funding might also be available for non-EU companies, such as those located in the Far East.

It may well be that the IMO will also develop or adopt a carbon pricing scheme. If it does, it will be interesting to see how it compares with a single jurisdiction approach like with the EU. Either way, as the EU often considers its own regulations to be the minimum, it is not likely to reduce the cost impacts within Europe. This all said, there are still a couple of steps required from the European Council and Parliament before the application of ETS to shipping comes into full force.



Figure 13

**LINER OPERATORS AND THEIR SUBSIDIARIES**

Liner shipping groups and their main operating subsidiaries, sister companies or brands, effective May 2023

By parent			
<b>AD Ports Group</b>		Grimaldi Euromed, Naples Italy	
Global Feeder Shipping, Dubai, UAE		Malta Motorways of the Seas, Valetta, Malta	
Safeen Feeders, Abu Dhabi, UAE		<b>IRISL, Teheran, Iran</b>	
Transmar International Shipping, Cairo Egypt		HDS Lines, Tehran, Iran	
<b>Arkas Line, Izmir, Turkey</b>		Khazar Shipping, Bandar Anzali, Iran	
Emes Feederling, Milan, Italy		Valfajre Shipping, Tehran, Iran	
<b>Boluda Corporacion Maritima S.L., Madrid, Spain</b>		<b>Maersk, Copenhagen, Denmark</b>	
Boluda Lines, Valencia, Spain		Aliança Navegação e Logística, Sao Paulo, Brazil	
Naviera del Mercosur, Asuncion, Paraguay		Hamburg Süd, Hamburg, Germany	
<b>CMA CGM, Marseilles, France</b>		SeaLand Americas, Miramar, United States	
ANL Container Line, Melbourne, Australia		SeaLand Asia, Singapore	
APL, Singapore		SeaLand Europe & Med, Copenhagen, Denmark	
Cheng Lie Navigation, Singapore		<b>Mediterranean Shipping Company, Geneva, Switzerland</b>	
Comanav, Casablanca, Morocco		Log-In Logística Intermodal, Rio De Janeiro, Brazil	
Mercosul Line Navegação e Logística, Sao Paulo, Brazil		<b>Pacific International Lines, Singapore</b>	
Sofrana ANL, Auckland, New Zealand		Mariana Express Lines, Singapore	
<b>Cosco Shipping Holdings, Shanghai, China</b>		<b>Samskip Holding, Rotterdam</b>	
CoHeung Marine Shipping Co, Seoul, South Korea		Samskip hf, Reykjavik, Iceland	
Cosco Shipping Lines, Shanghai, China		Samskip Multimodal, Rotterdam, Netherlands	
Diamond Line, Hamburg, Germany		Sea Connect, Klaipeda, Lithuania	
New Golden Sea Shipping, Singapore		Nor Lines, Tananger, Norway	
Shanghai Pansia Shipping Co, Shanghai, China		<b>Shanghai Jin Jiang Shipping, Shanghai, China</b>	
OOCL, Hong Kong		Shanghai Hai Hua, Shanghai, China	
<b>DP World, Dubai, UAE</b>		<b>Sinokor Merchant Marine, Seoul, South Korea</b>	
P&O Ferries, Dover, United Kingdom		Heung A Line, Seoul, South Korea	
P&O Maritime Logistics, Dubai, UAE		<b>Swire Shipping, Singapore</b>	
Shreyas Shipping, Mumbai, India		Pacifica Shipping, Lyttelton, New Zealand	
Unifeeder, Aarhus, Denmark		Polynesia Line, San Francisco, USA	
Unifeeder FZCO, Dubai		Westwood Shipping, Pullayup, USA	
Unimed Feeder Services, Limassol, Cyprus		<b>Vietnam Maritime Corporation, Ha Noi, Vietnam</b>	
<b>Eimskipafelag Islands hf., Reykjavik, Iceland</b>		Bien Dong Shipping, Ha Noi, Vietnam	
Eimskip Island, Reykjavik, Iceland		<b>Wan Hai Lines, Taipei, Taiwan</b>	
Eimskip Norway, Tromsø, Norway		Interasia Lines, Taipei, Taiwan	
Faroe Ship, Tórshavn, Faroe Islands		<b>ZIM Integrated Shipping Services, Haifa, Israel</b>	
<b>Grimaldi Compagnia di Navigazione, Naples, Italy</b>		Gold Star Line, Hong Kong	
Atlantic Container Line, Westfield, New Jersey, USA			
Finnlines, Helsinki, Finland			
By subsidiary			
Aliança Navegação e Logística	Maersk	Mercosul Line	CMA CGM
ANL container Line	CMA CGM	Naviera del Mercosur	Boluda Corporacion Maritima
APL	CMA CGM	New Golden Sea Shipping	Cosco Shipping Holdings
Atlantic Container Line	Grimaldi Compagnia di Navigazione	Nor Lines	Samskip Holding
Bien Dong Shipping	Vietnam National Shipping Lines	OOCL	Cosco Shipping Holdings
Boluda Lines	Boluda Corporacion Maritima	P&O Ferries	DP World
Cheng Lie Navigation	CMA CGM	P&O Maritime Logistics	DP World
CoHeung Marine Shipping	Cosco Shipping Holdings	Pacifica Shipping	Swire Shipping
Comanav, Casablanca, Morocco	CMA CGM	Polynesia Line	Swire Shipping
Cosco Shipping Lines	Cosco Shipping Holdings	Safeen Feeders	AD Ports Group
Diamond Line	Cosco Shipping Holdings	Samskip hf	Samskip Holding
Eimskip Island	Eimskipafelag Islands	Samskip Multimodal	Samskip Holding
Eimskip Norway	Eimskipafelag Islands	Sea Connect	Samskip Holding
Emes Feederling	Arkas Line	SeaLand Americas	Maersk
Faroe Ship	Eimskipafelag Islands	SeaLand Asia	Maersk
Finnlines	Grimaldi Compagnia di Navigazione	SeaLand Europe & Med	Maersk
Global Feeder Shipping	AD Ports Group	Shanghai Hai, Hua	Shanghai Jing Jiang Shipping
Gold Star Line	ZIM Integrated Shipping Services	Shanghai Pansia Shipping	Cosco Shipping Holdings
Grimaldi Euromed	Grimaldi Compagnia di Navigazione	Shreyas Shipping	Unifeeder
Hamburg Süd	Maersk	Sofrana ANL	CMA CGM
HDS Lines	IRISL	Transmar International Shipping	AD Ports Group
Heung A Line	Sinokor	Unifeeder	DP World
Interasia Lines	Wan Hai Lines	Unifeeder FZCO	DP World
Khazar Shipping	IRISL	Unimed Feeder Services	DP World
Log-In Logística	MSC	Valfajre Shipping	IRISL
Malta Motorways of the Seas	Grimaldi Compagnia di Navigazione	Westwood Shipping	Swire Shipping
Mariana Express Lines	Pacific International Lines		

Figure 14

**MERGERS AND TAKEOVERS IN 2022**

Target	Buyer	From
Bengal Tiger Line	HICO Investment	CMIA Capital Partners
Caribbean Feeder Shipping	HICO Investment (majority stake)	Perez y Cia
Deutsche Afrika-Linien	Hapag-Lloyd	Rantzau Group
Sakhalin Shipping Co. (SASCO, 58.5%)	TransContainer	Shareholders
Transmar (& IACC group, 70%)	AD Ports Group	Shareholders
Westwood Shipping	Swire Shipping	J-WeSCO Ltd (The Sumitomo Warehouse Co.)

**Notes:**  
 • In the case of mergers, surviving entity is reflected under "Buyer"

Figure 15

**OTHER CARRIER CHANGES IN 2022**

Company	Change	Result
A2B-online	Shareholder	Majority shareholder, De Vierhouten, taken over by Van Uden
Advance Container Line (PIL)	Absorbed	by parent PIL
Cosco Shg Holdings	Shareholding	Shanghai Automotive acquires 5.8%
FESCO	Shareholding	Russian state seizes 32.5%
HMM	Shareholding	SM Line acquires 6.29% (in stages)
MTL Feeders	Name	Arcoship Lines
Ningbo Ocean Shipping	IPO	Ningbo Zhoushan Poot retains 72.9%
Oman Container Line	Name	Asyad Shipping Line

Figure 16

**CARRIERS ENTERING THE LINER SHIPPING SCENE IN 2022**

Company	Month	Trade(s)
Kalypso (Rif Line)	January	Shanghai-Civitavecchia
Fastic Logistics	February	China-Italy
Summit Shipping Line	April	China-Philippines
Arctic Container Line	June	Rotterdam-Norway
Blue Water Shipping	June	Port Kelang-Lihir (PNG)-Brisbane
Modul	June	India-St. Petersburg
Swift Line	June	China-Vostochny
Transcontainer	July	Nhava Sheva-Turkey-Novorossiysk
Carrier53	August	Transpacific (West Coast)
Global Field Line	August	Ningbo-Vladivostok
Iris Logistics	August	Philippines-Thailand-Vietnam
Marsa Ocean Shipping	August	intra-Middle East
Tailwind Shipping Line (Lidl)	August	Asia-Europe
Van Son Shipping	August	Ho Chi Minh-Hai Phong
Aladin Express	October	Mid.East (Gulf)-India
Feederlines	October	UAE-India/Pakistan
Neptune Logistics	October	Guangzhou-Vladivostok
Transmasters	November	China-St. Petersburg
Focus Container Line	December	Australia-New Zealand
MOVE Logistics	December	Australia-New Zealand
Oceanic Star Line	December	Mid.East (Gulf)-Pakistan
OVP Shg/Transfar	December	China-Novorossiysk
Sidra Line	December	Turkey-Novorossiysk
Trans Sinergia	December	Istanbul-Novorossiysk

Figure 17

**CARRIERS LEAVING THE LINER SHIPPING SCENE IN 2022**

Company	Month	Trade(s)
Allseas Shipping	December	Far East-Europe

Figure 18

**SENIOR MANAGEMENT CHANGES IN 2022**

Position	Carrier	In	Replacing
CEO	PIL	Mr. Lars Kastруп	Messrs. Kastруп & Gan Chee Yen
Chairman	A.P. Moller-Maersk	Mr. Robert Maersk Uggla	Ms. Ane Maersk Mc-Kinney Uggla
Chairman & MD	SCI	Capt. (Mr) Binesh Kumar Tiyaqi	Mrs. Harjeet Kaur Joshi
President	Regional Container Lines	Mr. Twinchok Tanthuwani	Mr. Sumate Tanthuwani
President & CEO	Qatar Navigation (Milaha)	Mr. Abdulrahman Essa Al-Mannai	Mr. Moh'd Abdulla Swidan*

**Notes:**  
 • \* = Temporary replacement

Figure 19

**INTERNATIONAL SHIPPING ORGANISATIONS**

Name and members
<b>Digital Container Shipping Association</b> CMA CGM, Evergreen, Hapag-Lloyd, HMM, Maersk, MSC, ONE, Yang Ming, ZIM
<b>Global Shippers Forum (GSF)</b> Australian Peak Shippers' Association, Freight Management Association of Canada, Korea Shipper's Council, Logistics UK, National Industrial Transportation League, New Zealand Shippers' Councils, Sri Lanka Shipper's Council, Swiss Shippers' Council, Union of African Shippers' Councils
<b>International Chamber of Shipping</b> Maritime Industry Australia Limited, Bahamas Shipowners' Association, Royal Belgian Shipowners' Association, Canadian Chamber of Marine Commerce, Cyprus Shipping Chamber, Danish Shipping, Shipowners of the Faroe Islands, Finnish Shipowners' Association, French Shipowners' Association, German Shipowners' Association, Union of Greek Shipowners, Hong Kong Shipowners Association, Irish Chamber of Shipping, Italian Shipowners' Association, Japanese Shipowners' Association, Korea Shipowners' Association, Kuwait Oil Tanker Co., Liberian Shipowners' Council, Malaysian Shipowners' Association, Grupo TMM S.A., Royal Association of Netherlands Shipowners, Norwegian Shipowners' Association, Filipino Shipowners' Association, Portuguese Shipowners' Association, Russian Chamber of Shipping, Singapore Shipping Association, Spanish Shipowners' Association, Swedish Shipowners' Association, Swedish Shipowners' Employer Association, Swiss Shipowners' Association, Turkish Chamber of Shipping, UAE Shipping Association, UK Chamber of Shipping, Chamber of Shipping of America
<b>Ocean Carrier Equipment Management Association</b> APL, CMA CGM, CoscoSL, Evergreen, Hamburg Süd, Hapag-Lloyd, HMM, Maersk, MSC, ONE, Wan Hai, ZIM
<b>World Liner Data Agreement</b> APL, ANL, CMA CGM, CoscoSL, Evergreen, Hamburg Süd, Hapag-Lloyd, HMM, Maersk, MSC, OOCL, ZIM, Westwood Shipping
<b>World Shipping Council</b> China Cosco Shipping Corporation (CoscoSL, OOCL), CMA CGM (including ANL, APL, Containerships), Crowley, Evergreen, Hapag-Lloyd, HMM, ICL, "K" Line, Matson, Maersk (incl. Alianca, Hamburg Süd, SeaLand), MSC, MOL, NYK, ONE, Swire Shipping, Wallenius Wilhelmsen, Wan Hai, Yang Ming, ZIM

Figure 20

**COMMON CARRIER E-PLATFORMS**

Name and members
<b>Cargosmart</b> Lines: ANL, Cheng Lie, CMA CGM, CoscoSL, Evergreen, Hapag-Lloyd, ICL, Maersk, Matson, MSC, ONE, OOCL, SM Line, Yang Ming
<b>INTRTRA (carriers only)</b> Lines: ACL, Aliança, ANL, Antillean Marine, APL, Arkas Line, Cheng Lie, CMA CGM, Containerships, CoscoSL, Crowley, Dole, Evergreen, FESCO, Gold Star Line, Grimaldi, Hamburg Süd, Hapag-Lloyd, HMM, ICL, Intermarine, Maersk, Marfret, MSC, North Sea Container Line, ONE, Pan Asia Line, PIL, Salam Pacific Indonesia Lines, Samskip, SeaLand, SM Line, Sinotrans, Swire Shipping, Unifeeder, Wan Hai, WEC, Yang Ming, ZIM

Figure 21  
TOP-12 OPERATORS BY FULL CONTAINER CARRIINGS

Rank 2022	Main/parent company	Growth 2022	2022 TEU	2021 TEU	2020 TEU	
4	CMA CGM	-1.4%	21,740,000	22,040,000	20,980,000	
1	CoscoSH	-7.3%	24,412,000	26,344,000	26,344,000	
7	Evergreen	4.0%	7,730,000	7,430,000	7,050,000	
5	Hapag-Lloyd	-0.2%	11,843,000	11,872,000	11,839,000	
11	HMM	-3.5%	3,682,000	3,817,000	3,894,000	
2	Maersk	-8.9%	23,848,000	26,178,000	25,268,000	
3	MSC	-1.3%	23,000,000	23,300,000	23,700,000	
6	ONE	-8.1%	11,081,000	12,061,000	11,964,000	
10	PIL	-2.4%	4,000,000	4,100,000	3,900,000	
9	Wan Hai	-10.4%	4,300,000	4,800,000	4,500,000	
8	Yang Ming	4.5%	4,610,000	4,410,000	5,071,000	
12	ZIM	-2.9%	3,380,000	3,481,000	2,841,000	
<b>Total top 12</b>			<b>-4.1%</b>	<b>143,626,000</b>	<b>149,833,000</b>	<b>147,351,000</b>
Estimated world total			-4.0%	176,000,000	183,300,000	173,100,000
Share top 12			82%	82%	85%	

## Notes:

- Selection based upon year-end 2022 Top 12 by fleet capacity
- Ranking by 2022 carryings
- Data originate from carriers and Dynamar estimates (italics)

Figure 22  
MAJOR OPERATORS BY OPERATING PROFIT AND TURNOVER

Main/parent company	2022		2021		2020	
	profit USD	revenue USD	profit USD	revenue USD	profit USD	revenue USD
CMA CGM	31,640	58,950	22,069	45,290	5,232	24,006
CoscoSH	23,625	55,662	20,167	51,527	1,838	25,393
Evergreen	12,204	20,424	10,269	17,643	1,234	7,370
Hapag-Lloyd	20,786	36,956	12,309	25,263	3,780	17,877
HMM	7,811	13,707	6,142	10,877	821	5,204
Maersk	33,770	64,499	21,432	42,734	6,545	24,920
ONE	29,282	16,320	18,279	30,098	3,484	14,397
Wan Hai	3,840	8,432	4,603	8,220	455	2,914
Yang Ming	7,186	12,239	7,332	12,029	693	5,384
ZIM	7,532	12,562	6,596	10,729	1,036	3,992
<b>Sub-total</b>	<b>177,676</b>	<b>299,751</b>	<b>129,198</b>	<b>254,411</b>	<b>25,118</b>	<b>131,457</b>

## Notes:

- Profit: Operating profit in million USD
- Turnover: turnover in million USD

Figure 23  
TOP-12 OPERATORS BY OPERATED VESSEL FLEET CAPACITY

Rank 2022	Main/parent company	Growth 2022	2022 TEU	2021 TEU	2020 TEU	
3	CMA CGM	7.1%	3,393,190	3,169,700	3,007,000	
4	CoscoSH	-2.1%	2,871,859	2,934,400	3,023,200	
6	Evergreen	10.8%	1,637,861	1,477,600	1,279,300	
5	Hapag-Lloyd	2.1%	1,782,689	1,746,800	1,728,900	
8	HMM	-0.4%	816,365	819,800	719,000	
2	Maersk	-1.4%	4,219,395	4,279,300	4,138,200	
1	MSC	7.8%	4,598,373	4,266,800	3,855,900	
7	ONE	-0.9%	1,528,921	1,542,300	1,598,200	
12	PIL	11.4%	297,163	266,700	287,400	
11	Wan Hai	3.7%	436,844	421,200	319,900	
9	Yang Ming	6.9%	707,354	662,000	617,400	
10	ZIM	29.0%	533,823	413,900	368,200	
<b>Total Top 12</b>			<b>13.3%</b>	<b>22,823,837</b>	<b>20,150,100</b>	<b>19,228,700</b>
World total			4.1%	26,375,308	25,344,834	24,236,200
Share Top 12			86.5%	79.5%	79.3%	

## Notes:

- Selection based upon year-end 2022 fleet capacity
- Ranking by 2022 operated capacity
- Based upon data sourced from Alphaliner

Figure 24  
MAJOR OPERATORS OPERATING PROFIT PER TEU

Main/parent company	2022		2021		2020	
	profit USD	liftings TEU	profit USD	liftings TEU	profit USD	liftings TEU
CMA CGM	1,455	21,740	1,001	22,040	249	20,980
CoscoSH	968	24,412	766	26,344	70	26,344
Evergreen	1,579	7,730	1,382	7,430	175	7,050
Hapag-Lloyd	1,755	11,843	1,037	11,872	319	11,839
HMM	2,122	3,682	1,609	3,817	211	3,894
Maersk	1,416	23,848	819	26,178	259	25,268
ONE	2,643	11,081	1,516	12,061	291	11,964
Wan Hai	893	4,300	959	4,800	101	4,500
Yang Ming	1,559	4,610	1,663	4,410	137	5,071
ZIM	2,228	3,380	1,895	3,481	365	2,841
<b>Sub-total</b>	<b>1,523</b>	<b>116,626</b>	<b>1,055</b>	<b>122,433</b>	<b>210</b>	<b>119,751</b>

## Notes:

- Profit: Operating profit USD per TEU
- Liftings: 1,000 TEU

## PORTS, TERMINALS AND ARTERIES

### PORTS

#### Catching up and rounding off

From last year's review, one of the stories covered had yet to reach its logical conclusion. This was the plan to merge the activities of the ports of Antwerp and Zeebrugge (Bruges) by creating a single joint port authority. Although there were some concerns that the deal could be too ambitious at a political level, it helped that there was no serious overlap in cargo segments with Zeebrugge generally considered a major Ro/Ro and LNG port whilst Antwerp specialises in breakbulk and chemical products. Early in 2022, the merger was approved by the Belgian Competition Authority and took place a few months later. The resulting Port of Antwerp Bruges is 80/20 Antwerp/Bruges owned.

#### Public to private to public

In 2022 and into 2023, there were a number of developments surrounding private and public sector involvements in the running of and operations within ports and terminals. Moving tasks and responsibilities from the public to private spheres is not always easy and often excites strong opposition from those who fear a loss of sovereign control over a piece of strategic national infrastructure. For this reason, the presence of the private sector in a port is not a given in every single jurisdiction in the world.

There are three broad models for port management and operations:

1. The fully public model whereby the public sector acts as the port authority and operator of specific terminals and facilities, albeit perhaps through different divisions or entities
2. The public landlord/private tenant model, which is probably most common. Here, the public sector controlled authority issues concessions to the private sector to operate terminals
3. The (near) fully private model whereby the authority is privately controlled, or perhaps the activities of the authority are concessioned out. There could still be some state related shareholding and individual facilities might still be concessioned out to other private parties

These are just the broad principles. There are variations on these themes in different jurisdictions around the world. Some of the developments from 2022 that related to public/private involvement in port management and operations are summarised below.

#### Israel, relatively smooth public to private

In 2022, the Israeli government put Haifa Port Company up for sale. This company holds an operations concession that runs up to 2054. Alongside other facilities, the concession includes the Carmel (1.0 million TEU) and Eastern (1.2 million TEU) container terminals. The port's third and newest terminal, Bayport (1.0 million TEU), is operated independently by Shanghai International Ports Group.

The winning bid for Haifa Port Company was the USD 1.18 billion put forward by Adani Ports of India and Israel-based chemicals and logistics concern Gadot in a 70/30 joint venture. It was accepted in mid-2022 but later in the year, the winners requested an extension on their first payment, due in October 2022, whilst

they were still working on the financing. At the start of 2023, the Haifa Port Company was transferred to the consortium.

#### South Africa, initial moves (again)

South Africa's ports fall under the remit of Transnet, a state-owned corporation, also known as a "parastatal", that controls the national landside freight infrastructure (excluding roads). It operates through six divisions all under the generic Transnet brand and covering: freight rail; engineering (rolling stock maintenance); pipelines; property; and most importantly here, the national ports authority (landlord of South African ports) and port terminals (port and terminal management and operations).

Transnet port terminals concentrates upon container, car and breakbulk/multipurpose sectors. It operates five container terminals located in Durban (two), Cape Town, Ngqura and Port Elizabeth. Multipurpose facilities are found in Durban and East London. There are no privately operated box facilities in South Africa.

Privatisation of South Africa's ports sector has not really been high on the national agenda. Other than a plan to privatise Ngqura Container Terminal, that process being cancelled by Transnet in 2013, there have been few concrete plans and even fewer attempts.

However, in 2022, there was the start of what could be substantive process after the South African President announced that Transnet would seek private sector involvement in Durban Pier 2 (DCT2) and Ngqura Container Terminal (NCT). By the end of the year, six parties had been shortlisted as potential partners in one or both facilities. These were Abu Dhabi Ports/Star Classic Investments (both); APMT (Ngqura only); China Harbour Engineering/Guangzhou Port (Durban only); Grindrod/HHLA (Durban only); Red Sea Gateway/MMC (both); TIL/Remgro Ltd (both). The successful bidders will enter into a 25-year-long joint venture with Transnet Port Terminals.

#### Brazil's new political wind turning about

In general terms, Brazil has adopted the landlord/tenant model for port activities. As a result, there is already substantial private involvement in physical port operations throughout the country. Port authorities, though, remain under public control.

However, under the government of President Jair Bolsonaro, a programme of bringing private involvement into five port authorities was launched. This covered the authorities of Companhia Docas de Espirito Santo (Codesa), Porto de Santos, Porto de Itajai, Companhia Docas da Bahia (Codeba) and Porto de Sao Sebastiao. Only the last did not incorporate significant container handling facilities, with Vitoria falling under Codesa's multi-port remit, and Salvador being one of Codeba's outlets.

The whole privatisation process for whichever port authority promised to be long and complicated, each having to negotiate a number of stages and secure permission or authorisation from the relevant bodies as it progressed. Alongside, there was something of a ticking time bomb under the plans. In October 2022, there was a general election in Brazil, which the challenger and former President, Lula da Silva, not a great fan of privatisation, ended up winning. He took office at the start of 2023.

Developments surrounding efforts to privatise three of the authorities with container handling facilities are summarised below.

**Companhia Docas de Espirito Santo (including Vitoria)**

Despite the potential for the process to be disrupted, the privatisation of Companhia Docas de Espirito Santo (Codesa), proceeded fairly smoothly. The port authority covers the ports of Vitoria and Barra do Riacho, the former of which is a reasonably sized container port (2022 handlings: 225,000 TEU).

In September 2022, the then Minister of Infrastructure signed the sale agreement of Codesa to a company controlled by Quadra Capital, also of Brazil. In return for USD 20 million, it received a 35-year-long management concession. When the costs of assuming Codesa's shares and liabilities, plus various annual payments and investments of around USD 165 million are also included, the final bill to Quadra could be around USD 310 million for the entire period.

Maybe because of the signing of the sale agreement, the new national government of President Lula da Silva confirmed that the privatisation of Codesa would continue.

**Porto de Itajai**

The process concerning the Port of Itajai (2022 handlings: 1.5 million TEU, when including Navegantes), might not go through following an announcement early in 2023 that it would indeed be reviewed. Technically, it is not a privatisation, more a change of concession holder. The current concession for the management of the port has been held by a local government owned entity since 1997 and was due to expire at the end of 2022. This was extended by two years so as to find a new (private) concession holder after that particular process had suffered delays.

Another difference in the Itajai process to those of elsewhere is that the proposed deal allowed the new "authority" to also be directly involved in terminal activities.

The extension of the port authority concession was also loosely tied in with the operating concession held by APM Terminals for the Itajai's container facility. This was also due to expire at the end of 2022 with APM Terminals showing no inclination to extend. As such, the port authority issued a tender to operate the terminal for two years, this coinciding with its own extension.

The tender was won by CTIL Logistica of Brazil, but when doubts emerged about the winner's experience and abilities, the port authority returned to APM Terminals to continue on an interim basis until a suitable replacement could be found. Whether anybody else would want to come into an unfamiliar facility in a port whose management outlook is uncertain, remains to be seen.

**Porto de Santos**

Privatising the port authority of Santos was a number of degrees more complicated than those for the other ports. Not only is it Brazil's largest port, but it is also the largest in South America. For containers alone, it handled 4.4 million TEU in 2022, over 1.4 million TEU more than the next largest, Cartagena in Colombia. Whatever the privatisation mechanism adopted, the winning party would receive a 35-year long concession in return for which they would have to invest anywhere between USD 3.1 billion and USD 4.6 billion. Of that, only USD 400 million would have to be spent on port infrastructure.

For a while, certain milestones in Santos' privatisation were reached. For example, as the final quarter of 2022 approached, the process was approved by Brazil's National Waterway Transport Agency (Antaq). However, a few months later, and just before the new government took office, Brazil's Federal Audit Court (TCU) requested extra time to evaluate the proposed deal, referring to the need for the incoming administration to evaluate the impacts of the then recently privatised Codesa (Vitoria).

Even so, the process surrounding Santos was not immediately halted with dialogue being held between the new government and the governor of the Sao Paulo (State) in which Santos is located. This latter was a proponent of privatisation and an infrastructure minister in the Bolsanaro government. The apparently cordial dialogue notwithstanding, as the first quarter of 2023 was closing, the relevant minister declared that privatisation of the port authority was a bad idea.

**East Africa, tentative or removed private involvement****Kenya**

The participation of the private sector in East Africa's major ports is conspicuous by its absence. There was an attempt to tender out the operations of Mombasa's then under development Kipevu Container Terminal, only for the process to be cancelled shortly before Phase I had been completed in 2016. This followed complaints from bidders and the project's effective sponsor and guiding hand, Japanese International Cooperation Agency.

Further news on any concession holder only became public a few months before Phase II of Kipevu was completed in mid-2022. This announced that Kenya National Shipping Lines (KNSL) would be the operator under a 25-year long concession.

Although it may have been intended to operate vessels, KNSL had only really been a non-vessel operating common carrier, so its experience in operating box terminals was minimal at best. The modern day KNSL was two-thirds owned by the government through the Kenya Ports Authority with MSC indirectly holding the rest. In preparing for the transfer of the Kipevu concession, through a merger and pre-emptive rights issue, KNSL is to (or has) become a 53/47 venture between KPA and MSC respectively. The concession had still not been handed over as per June 2023.

**Tanzania**

Whilst Kenya might be admitting private involvement in operating one container terminal, Tanzania was busy in 2022 removing its sole example. In Dar es Salaam, the operations concession for berths 8-11 was held by the Hutchison Ports controlled Tanzania International Container Services (TICTS). Originally awarded in 2000, when it was an ICTSI controlled entity, this concession lasted to the end of 2022 with the Tanzania Ports Authority (TPA) then taking over. However, given the TPA's inexperience in direct container terminal operations, for it soon brought in Adani Ports as a sub-contractor, which is different to being the concession holder, to run the terminal. The belief is that this is an interim measure.

**Angry nature**

Unfortunately, critical ports infrastructure is as vulnerable as other links in the supply chain to major incidents and disasters. Some of these can be caused by natural phenomenon as wildfires, floods and earthquakes. Others can be down to human error -at its kindest description- as shown by devastating explosions at the ports of Tianjin (2015) and Beirut (2020). Whatever the cause, the results often lead to widespread damage if not downright destruction with the attendant injuries to people and, tragically, even multiple fatalities.

These events do not necessarily need to occur within the port's boundaries. One in the hinterland can also have ripple effects that impact not only a port's operations but also the entire supply chain. Vancouver's unfortunate experiences of 2021 are a case in point. First off, in the height of the northern hemisphere summer, Dantean like wildfires -some two hundred or so spread through the west Canadian province of British Columbia leading to loss of life and widespread devastation. Later in the

year, rail lines and motorway connections were washed away by excessive rainfall, floods and landslides. Here too there was widespread damage, destruction and, tragically, fatalities. Both incidents caused disruption to the port's connecting infrastructure, which in turn led to the port filling up with containers and/or the number of ships waiting at port increasing significantly.

In 2022 and early 2023, there was a series of natural disasters afflicting container ports in different countries, and for whom the supply-chain impacts were anything but local.

**Durban (hinterland floods, 2022)**

April 2022 saw severe flooding in Durban's home province of KwaZulu-Natal. Responding to the disaster, South Africa declared a national state of disaster and deployed 10,000 troops to help with the relief effort.

As a result of the floods, some 4,000 homes were destroyed, 40,000 people displaced, roads and railways connecting the port were damaged and mobile communications were hampered with at least 900 masts down. Alongside, debris as household goods and logs were deposited by the flood waters into the harbour itself. The overall damage was estimated at around USD 675 million for the province, with fatalities said to exceed 400.

Port operations were initially suspended. Resuming at a limited capacity after around a week, the harbour's waters had to be dredged, and the container backlog that had built up required a number of days to be cleared.

**Iskenderun (regional earthquake, 2023)**

On Monday 6 February 2023, a 7.8 magnitude earthquake struck southern Turkey. The epicentre was near the town of Gaziantep, close to the border with Syria and around 120 kilometres northeast of the port of Iskenderun located in the north-eastern shoulder of the Mediterranean Sea. Shortly afterwards, a second quake of 7.5 magnitude occurred around 100km to the north with follow up earthquakes around a fortnight later of 5.8 and 6.4 magnitude also in the general area.

The devastation wrought by the initial quakes covered both Turkey and Syria. At least 160,000 buildings were damaged or destroyed in Turkey with the death toll, including Syria, estimated at over 50,000 people with more than double that injured. Alongside, 1.5 million people were rendered homeless with more than 500,000 housing units similarly damaged or destroyed. Rescue efforts, let alone normal day-to-day business, were hampered by damage and disruption to both Iskenderun port itself and connecting infrastructure.

Iskenderun is a typical gateway port with a hinterland stretching into Iraq, Turkey and Syria. As well as destruction and damage to the port, it also had to cope with flooded streets and, shortly afterwards, a large storm. The LimakPort container facility suffered considerable damage after a substantial fire broke out in its yard area destroying or damaging most of the 5,000 or so containers that were there. Luckily, the fire was brought under control after a day or so. The disruption to Iskenderun's activities was estimated by the Russell Group to potentially lead to a loss in trade of close to USD 680 million.

Understandably, the port was closed to cargo traffic, with container carriers diverting to Mersin, around 140 kilometres to the west of Iskenderun. As a result, this port started to experience congestion.

Such was the damage to Limak Port that commercial operations only resumed in April. Other facilities within Iskenderun started receiving vessels relatively quickly, these carrying humanitarian aid. Tartous and Lattakia in Syria seemed to have escaped sig-

nificant damage, whilst Assan Port Iskenderun, a few kilometres to the north of Iskenderun and patronised solely by MSC, was receiving regular calls by mid-March.

**New Zealand (North Island, floods and cyclone, 2023)**

The North Island of New Zealand was hit by two extreme weather events in almost as many weeks early in 2023. Both took place over the end-January/start-February period. First was the severe rainfall along the north coast, which on one particular day exceeded that for a whole summer. With the rain came extensive flooding and damage to hinterland in what was described then as the biggest non-earthquake disaster the country had ever experienced. This unwanted record then passed on to "Cyclone Gabrielle", which followed soon after, with the government declaring a state of national emergency for only the third time ever.

Whilst the floods particularly impacted the northern coastline where the port of Auckland is located, the cyclone's effects were felt more along the northeastern coastline, Hawke's Bay, where the port of Napier is located. Hawke's Bay and its environs also suffered considerable flooding -made worse by logs weighing hundreds of tons being carried along from the local forestry sector- with some areas completely cut off for a short while. Here too there were fatalities arising from both incidents, these easily reaching double figures.

Ports in the afflicted areas appeared to escape the worst with no significant damage reported and closures for up to a few days only as the cyclone passed through. There was still disruption to shipping services and considerable dislocation to the hinterland infrastructure (electricity, roads, railways, telecommunications and water) and economic activity. The region where "Cyclone Gabrielle" hit is associated with agriculture. Seventy percent of New Zealand's apple exports come from Hawke's Bay. With harvesting season approaching, it was feared that this, and other crops as grapes, kiwi and forestry, might be significantly disrupted.

**Not the only examples**

The above are just a selection of the extreme events that have implications for the ports and wider supply-chain sectors. Ports in the Caribbean, North America and Asia Pacific have to contend with their respective annual hurricane, typhoon or cyclone seasons. For example, "Typhoon Muifa" caused the temporary closures of Shanghai, Ningbo, Qingdao and Dalian in September 2022.

In Nigeria, widespread flooding afflicted a number of southern states for a protracted period of time resulting in around 600 fatalities, the destruction of over 200,000 homes and displacement of 1.3 million people. Although the direct impacts upon container shipping and ports were limited, the production and supply of LNG, a major export commodity, was disrupted.

Nature is certainly angry, it seems. And as all these events show, even if ports do escape the direct contact, what happens in the hinterland does also ultimately influence that what happens at the interface with the sea.

**Other ports developments****Indian Subcontinent**

Late in 2022, India's Ministry of Environment, Forest and Climate Change approved plans to develop a USD 9.4 billion greenfield port and associated infrastructure on Great Nicobar island, which is only 210 kilometres or so northwest of the Indonesian island of Sumatra. This rebooted a process that started with a request for expressions of interest (EOI) issued in 2019.

Another EOI was issued in 2023, with Adani Ports, JSW Infrastructure, Container Corporation of India and Essar Ports, all from India, registering their interest. The outline plan foresees a first phase of 4.0 million TEU, 2,300 metres of quay line and a 125 hectare container yard. Ultimate capacity could be 16 million TEU with concessions of thirty to fifty years.

The location is intriguing, especially given the island's limited population of just 8,000 people, but could be geopolitically important, proving to be a commercial thorn in the side of Colombo (Sri Lanka)'s Indian transshipment business, and a strategic thorn in the side of any proposed Kra Canal across Thailand.

#### Far East

The first three berths of the mega Tuas port project in Singapore were formally commissioned in 2022. This project, announced back in 2012, will ultimately relocate and consolidate all downtown container handling facilities to the southwest tip of the island state. Come 2040, as planned, it will comprise a total berth length of 26 kilometres (!) and have a capacity of 65 million TEU.

### TERMINAL OPERATORS AND OPERATIONS

As well as developments and themes surrounding individual ports, there were also some at terminal operator levels, and if there was one clear theme in 2022, it was the number of high profile terminal moves made by container carriers. With the exception of Hapag-Lloyd, who is establishing a position within the terminals segment, these moves were more of a further strengthening or consolidation of existing portfolios; the independent terminal operators might well say "further encroachment". A selection of these and other developments is summarised below, starting with carriers and followed by other terminal operators' news.

#### Hapag-Lloyd - Spinelli and SAAM (and more)

Hapag-Lloyd's involvement in container terminals was long limited to a 25.1% stake in Container Terminal Altenwerder in Hamburg. It even sold this to its shareholder in 2009 but was forced to buy it back almost immediately as collateral for the state loan guarantee it had accessed at that time. A decade later, Hapag-Lloyd took a ten percent stake in the operator of Tangier's Terminal 3 (Tangier Alliance Terminal, then a project, now operational). Since then, its activities have picked up speed.

Around two years after the Tangier deal, Hapag-Lloyd agreed to acquire the thirty percent held by Maersk in Container Terminal Wilhelmshaven, the deal taking effect in 2022. Later that year, Hapag-Lloyd joined with four other partners in a consortium to develop and operate what will be the 3.3 million TEU Terminal 2 at the Egyptian Mediterranean port of Damietta. Hapag-Lloyd is the largest shareholder in that venture with thirty-nine percent. At the start of 2023, it operationally underwrote this development, and its investment, by declaring that Damietta would become its East Mediterranean hub.

#### Spinelli (Italy)

In the meantime, Hapag-Lloyd agreed to purchase a forty-nine percent stake in the Spinelli Group of Italy, the deal taking effect early in 2023. Established in 1963, Spinelli is involved transport, warehousing and logistics alongside terminal operations. For this last, it is a thirty percent shareholder in Salerno Container Terminal, a forty-four percent shareholder in Terminal Rinfuse Genoa (multipurpose) and wholly owns the Genoa Port Terminal.

#### SAAM (Americas)

At around the same time as the Spinelli announcement (late 2022), Hapag-Lloyd agreed to buy SAAM of Chile's ports and logistics businesses for around USD 1 billion. Compared to the other agreements, this represented a potentially substantial expansion in Hapag-Lloyd's terminal portfolio. SAAM is involved in eight container facilities spread around Chile (4), Honduras, Ecuador, Mexico and United States (one each). Four facilities are joint ventures with either SSA Marine or Agunsa.

Alongside terminals and logistics, SAAM also includes substantial tugs/towage and airport logistics activities, neither of which will move across to Hapag-Lloyd. SAAM used to be a subsidiary of mainline carrier CSAV of Chile before it was spun off as a separately-listed entity in 2012. Both retained Quinenco as majority shareholder, situations that are still in place today (2023), meaning that ultimately, Quinenco is also a significant shareholder in Hapag-Lloyd.

Two years after SAAM was spun off, CSAV merged its container liner activities into Hapag-Lloyd, and after it withdrew from other direct activities as reefer and Ro/Ro shipping, it was essentially left as an investment company. It was, and still is, one of Hapag-Lloyd's two joint largest shareholders.

The potential acquisition of SAAM's terminal activities by Hapag-Lloyd has been held up by a prolonged period of scrutiny. This is being carried out by Chile's relevant authority, La Fiscalía Nacional Económica.

#### JM Baxi (India)

Whilst waiting for the SAAM deal to be approved, Hapag-Lloyd announced it had agreed to buy what, through a couple of mechanisms, would ultimately be a forty percent share in JM Baxi Ports & Logistics of India. This deal was completed in 2023.

Established originally in 1947, JM Baxi operates container terminals in Visakha, Kandla, Haldia and a multipurpose terminal in Paradip. It has also won concessions for terminals in Nhava Sheva (existing facilities, in consortium with CMA Terminals) and Tuticorin. Other activities include inland container terminals, container freight stations and logistics. Overall, JM Baxi is said to handle around 1.60 million TEU annually on the back of an estimated total terminal capacity of 2.25 million TEU.

As a result of all the developments summarised above, from its very small beginnings, Hapag-Lloyd's container terminal portfolio could well end up reading as below.



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## Hapag-Lloyd container terminal interests

Country/Port/Facility	Status	Capacity
Chile/Antofagasta/Antofagasta TI	***Acquisition pending, indirect 35% share	260KTEU
Chile/Iquique/Iquique TI	***Acquisition pending, indirect 100% share	315KTEU
Chile/San Antonio/San Antonio TI	***Acquisition pending, indirect 50% share	1.6MTEU
Chile/San Vicente/San Vicente TI	***Acquisition pending, indirect 50% share	1.2MTEU
Costa Rica/Pto Caldera/Berths 1-2	***Acquisition pending, indirect 51% share	-
Ecuador/Guayaquil/Term. Port. De Guayaquil	***Acquisition pending, indirect 100% share	1.1MTEU
Egypt/Damietta/Terminal 2 (Damietta Alliance)	Project, 39% share	3.3MTEU
Germany/Hamburg/CT Altenwerder	25.1% share	3.5MTEU
Germany/Wilhelmshaven/Eurogate CT Wilhelmshaven	30% share	2.7MTEU
India/Haldia/Haldia ICT	**indirect 40% share	250KTEU
India/JNPT/JNPT CT	**Concession pending, indirect 20% share	900KTEU
India/JNPT/JNPT CT [MPP]	**Concession pending, indirect 20% share	150KTEU
India/Kandla/Kandla ICT	**indirect 40% share	600KTEU
India/Paradip/Paradip Int. Cargo Term.	**indirect 40% share	200KTEU
India/Visakhapatnam/Visakha CT	**indirect 40% share	1.2MTEU
Italy/Genoa/Genoa Port Term	*indirect 49% share	600KTEU
Italy/Salerno/Salerno CT	*indirect 14.7% share	500KTEU
Mexico/Mazatlan/Term. Maritima Mazatlan	***Acquisition pending, indirect 100% share	100KTEU
Morocco/Tangier/Tangier Alliance Term	10% share	1.5MTEU
USA/Port Everglades/Port Everglades CT	***Acquisition pending, indirect 70% share	-

\*Via 49% shareholding in Spinelli; \*\*Via 40% shareholding in JM Baxi; \*\*\*Via agreed 100% acquisition of SAAM's terminal assets; MPP = Multipurpose

When adjusted for equity shares, the combined capacity of the above list could give Hapag-Lloyd interests equivalent to at least 7.6 million TEU in annual handling capacity.

## MSC and TIL - Africa and Italy

## Bollore Africa Logistics

At the end of 2022, MSC finally completed the takeover of Bollore Africa Logistics (BAL), which incorporated interests in more than twenty terminal concessions, sixteen being container facilities. Most were located in sub-Saharan Africa, with other facilities in Tuticorin (India), Port-au-Prince (Haiti) and Dili (East Timor, commissioned 2022). MSC already had extensive terminal interests via Terminal Investment Limited (TIL) and Marininvest.

The whole process started when MSC made a bid for BAL shortly before 2021 had finished. The purchase price of nearly USD 6.3 billion was agreed the following March. For Bollore, the sale of BAL was part of a strategic realignment of its activities (CMA CGM entered negotiations to acquire the separate Bollore Logistics in April 2023 for example).

That the purchase of Bollore Africa Logistics was completed without apparent demur from regulatory authorities did raise some eyebrows given the strong position BAL had in a number of African ports and hinterlands. In particular, was the situation in Lomé (Togo), where MSC's own terminal subsidiary, Terminal Investments Limited, operated the Lomé Container Terminal. In the same port, two other terminals were ultimately controlled by Bollore, the Togo Terminal (85% Bollore owned) and Lomé Multipurpose Terminal (95% Bollore owned).

The combination of these three facilities could (would) have given MSC a dominant position in Lomé. It was not surprise therefore, when, in the first quarter of 2023, it was announced the Togo government had increased the stake it held in the Togo

Terminal from five to thirty percent. This was to help maintain a competitive environment. Whether similar provisions were requested elsewhere remains to be seen.

The acquired Bollore activities were kept as a separate aspect of the MSC group. At the end of 2023's first quarter, they were unveiled under the new name of Africa Global Logistics.

## The new brand and logo for what was Bollore Africa Logistics



## Shoring up in Italy

Via its sixty percent subsidiary Terminal Investment Limited, MSC bought a thirty percent share in Trieste Marine Terminal in the port of the same name. Via another company, the affiliated Marininvest, it already owned a significant stake, this latest development giving the group an effective sixty-eight percent share. This was followed up at the start of 2023 with TIL agreeing to acquire Terminal Darsene Toscana in the port of Leghorn from its owner, Gruppo Investimenti Portuali. The same Marininvest referred to above also holds half of the multipurpose Lorenzi Terminal in the same port.

Finally, in 2022, and outside of Africa and Italy, TIL bought out its partner Perrigault's fifty percent stake in Terminaux de Normandie MSC in the French port of Le Havre. This made TIL the sole owner.

## CMA CGM - West to East Coasts of the USA

Over late 2021 and start 2022, CMA CGM acquired ninety percent of the Fenix Marine Services terminal (2.5 million TEU) in Los Angeles from EQT Infrastructure III. As CMA CGM already held ten percent, it became the sole owner. The deal reversed what happened when CMA CGM sold that stake in 2017. Back then though, pressurised by needing to reduce debt, CMA CGM received USD 820 million from EQT Infrastructure III. The agreed enterprise value for the return trip was USD 2.3 billion. It was clearly a good return on investment for EQT.

On the other side of the United States, and much later in the year, CMA CGM agreed to purchase the New York and New Jersey facilities controlled by the Global Container Terminals group (GCT). This operator, which also has two terminals in or around Vancouver in Canada, is owned by a consortium of institutional investors.

## Other carrier moves

Aside from those more extensive developments a number of other carriers made incidental moves in 2022:

Evergreen Marine entered the Abu Qir development on Egypt's Mediterranean coast via a twenty percent stake. The overall USD 730 million project is being led by Hutchison Ports.

Grimaldi, the Roll-on/roll-off and multipurpose operator, took control of the similarly multipurpose Antwerp Euroterminal buying out the one third share held by local stevedore Mexico Natie. It followed this up early in 2023 by taking an eighty per-

cent stake in the former EMA Terminal of the troubled Ter Haak Group. The facility is now known as Amsterdam Multipurpose Terminal with the minority partner being TMA Logistics, a joint venture of which Hutchison ports is part.

## AD Ports - moving the other way

Late in 2022, AD Ports agreed to buy Noatum of Spain in a standard stevedore/stevedore deal. Approval was received in the opening quarter of 2023. This was not the only acquisition that the ambitious Emirati operator made in the course of the year. In fact, like DP World before it with Unifeeder, Feedertech and Transworld, AD Ports was expanding its direct shipping footprint.

As well as listing on the Abu Dhabi Securities Exchange early in 2022, AD Ports bought seventy percent of Egypt-based Red Sea carrier Transmar and the affiliated stevedore Transcargo International. An arguably more substantial move followed with it taking an eighty percent share in Dubai-based Global Feeder Shipping, whose antecedents can be found in the old Simatech. The new acquisitions added to AD Ports's organic and 2020-established Safeen Feeders subsidiary.

As for Noatum, its portfolio covered thirty-five facilities around Spain plus one in Abu Dhabi (with AD Ports), although only four are container terminals, these being located in A Coruna, Cartagena, Castellon and Malaga. Of the remaining locations, eleven are multipurpose with reefer, Ro/Ro and bulk comprising the others.

## Global Ports Investments - shifting sands

Although listed on the London Stock Exchange for a long time, Global Ports Investments is a Russia based terminal operator with the focus of its activities being its home country. Obviously, the Russia/Ukraine conflict and the sanctions imposed by

many nations on Russia as a result were significantly impacted trading relationships with Russia.

Within this context, there were shareholding and facility amendments to Global Ports's portfolio. At the corporate level, in the course of 2022, Maersk's APM Terminals sold the 30.75% it held in the company to the Delo Group of Russia, who already owned 30.75%. However, there is mechanism whereby APMT can return later if it so wishes.

At specific facility levels, CMA CGM engaged in a swap of stakes held with Global Ports. The twenty-five percent CMA CGM held in the Moby Dik terminal and Yanin Logistics Park, both in St. Petersburg, moved out. In return, CMA CGM received twenty-five percent of Multi-Link Terminals (MLT), operator of container facilities in Kotka and Helsinki, both in Finland. Considering that CMA CGM already held twenty-five percent, MLT is now 50/50 owned by CMA CGM and Global Ports.

At a company level, and unsurprising considering that dealings in its shares were suspended very soon after the outbreak of hostilities (February 2022), Global Ports delisted from the London Stock Exchange around thirteen months later.

## Eurogate/HHLA

In mid-2022, compatriot terminal operators HHLA (involved in five Hamburg terminals, plus four others in Europe/Mediterranean) and Eurogate (three Bremerhaven terminals, one in Hamburg and one in Wilhelmshaven, plus eight others in Europe/Mediterranean) put a temporary halt on their discussions towards greater cooperation. This was due to uncertainties arising from the economic and geopolitical situation, in particular regarding Ukraine/Russia. Exploratory talks, which had been progressing steadily it seemed, had started around two years earlier.



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**Figure 25**  
**PROGRESS ON NEW TERMINALS IN 2022, includes**

Facility	Port	Action	Cap
<b>Europe/Mediterranean</b>			
Abu Kir CT	Abu kir	Ground-breaking	2.0
Trans Misr Term.	Alexandria	Commissioned	1.5
New MP term.	Cartagena	Approved	-
Cork CT	Cork	Commissioned	0.3
Container Terminal 2	Damietta	Announced	3.3
Enfidha MPP port	Enfidha	Agreement signed	-
DCT Gdansk T3	Gdansk	Agreement signed	1.5
MSC Terminal	Rotterdam	Agreement signed	6.0
Boluda Santander	Santander	Construction started	0.1
Pier 6 CT	Thessaloniki	Agreement signed	-
MSC terminal	valencia	Approved	5.0
<b>Far East</b>			
Container Terminal	Batam	Announced	-
Busan CT (phase 2-4)	Busan	Regular service	2.7
MSC Tranship. Term	Cai Mep	Proposed	-
Tibar Bay	Dili	Commissioned	0.2
New MPP terminal	Guangzhou	Announced	0.5
Nansha/Terminal 4	Guangzhou	Construction completed	4.9
Kijing Intl Port	Kijing	Commissioned	0.5
Mawlamyine	Myanmar	Proposed	-
Q. Automated CT	Qinzhou	Commissioned	1.0
Automated CT	Rizhao	Commissioned	-
Yanshan Deepwater	Shanghai	Construction started	11.6
New terminal	Sihanoukville	Announced	0.3
Tuas CT	Singapore	Commissioned	65.0
Lien Chu MPP port	Vietnam	Proposed	-
New CT	Yangpu	Announced	5.0
<b>North America</b>			
New CT	Baltimore	Agreement signed	-
Louisiana IT	New Orleans	Announced	2.0
<b>Indian Sub Continent/Middle East</b>			
CMA Term. Khalifa	Abu Dhabi	Ground-breaking	1.8
New DP World Term.	Bossaso	Agreement signed	-
Patenga CT	Chittagong	Trial Operations	0.5
Colombo West ICT	Colombo	Construction started	3.0
Great Nicobar Port	Great Nicobar	Approved	-
JCPDI	Jazan	Commissioned	1.0
Tuna-Tekra	Kandla	Approved	-
Terminal 5	mundra	Construction started	1.2
<b>Africa</b>			
Keta Seaport Project	Ghana	Announced	0.6
Cote d'Ivoire Term	Abidjan	Commissioned	-
Ndayane	Dakar	Ground-breaking	-
<b>Latin America</b>			
Antioquia Port	Colombia	Construction started	0.7

**Notes:**  
 • Capacity in million TEU  
 • Capacities are provisional

**Figure 26**  
**PROGRESS ON UPGRADING TERMINALS IN 2022, includes**

Facility	Port	Action	Cap
<b>Europe/Mediterranean</b>			
BEST	Barcelona	Planned	+0.7
CT Phases 1.2 & 2.0	Cadiz	Planned	-
Yilport Galve	Gavle	Construction completed	+0.3
Koper CT Pier 1	Koper	Commissioned	-
La Spezia CT	La Spezia	Agreement signed	+2.0
Normandie-P.Oceane	Le Havre	Announced	-
L. Gateway berth 4	London	Construction started	-
Suez Canal CT	Port Said	Agreement signed	+2.0
Sines CT, phase III/1	Sines	Commissioned	-
Thessaloniki Pier 6	Thessaloniki	Awarded	-
Trieste Marine Term	Trieste	Tender launched	+1.2
<b>Far East</b>			
Nansha Terminal 3	Guangzhou	Announced	+0.5
Ningbo Meishan b 3	Ningbo	Commissioned	+2.5
Quanzhou Pacific	Quanzhou	Commissioned	-
Belawan New CT	Belawan	Agreement signed	-
Patimban Phase 1-2	Patimban	Agreement signed	-
Tanjung Pelepas Term.	T. Pelepas	Announced	+1.0
MICT berth 8	Manila	Announced	-
Vostochny CT	Vostochny	Planned	-
Terminal D ph.II	Laem Chabang	Agreement signed	+3.5
<b>North America</b>			
Paul W. Conley CT	Boston	Commissioned	-
Jacksonville CT	Jacksonville	Commissioned	-
Everport	Los Angeles	Commissioned	-
Contecon Manzanillo	Manzanillo	Ground-breaking	-
Mobile CT	Mobile	Agreement signed	-
Ocean Terminal	Savannah	Approved	-
Terminal 5	Seattle	Commissioned	-
<b>Indian Sub Continent/Middle East</b>			
New berths 26-31	Jeddah	Agreement signed	-
Bharat Mumbai CT	Nhava Sheva	Ground-breaking	+2.4
Gateway Terms India	Nhava Sheva	Announced	+0.3
Salalah CT	Salalah	Announced	+1.5
Vishaka CT	Visakhapatnam	Construction completed	+1.3
<b>Africa</b>			
Kribi CT	Kribi	Agreement signed	-
Cotonou port	Cotonou	Approved	-
Kipevu CT phase II	Mombasa	Construction completed	-
<b>Latin America</b>			
Term. Santa Catarina	Itapoa	Planned	+0.8
Superterminais	Manaus	Planned	-
Portonave Term. Port.	Navegantes	Planned	-
Tecon Vila Do Conde	Vila Do Conde	Announced	-
T. Port Euroandinos	Paita	Commissioned	-
T. Cuenca del Plata	Montevideo	Agreement signed	+2.5
<b>Australasia</b>			
Victoria ICT (ICTSI)	Melbourne	Agreement signed	-
Wharf 6	Napier	Commissioned	-
Thorndon Ctr Wharf	Wellington	Commissioned	-

**Notes:**  
 • Capacity additions in million TEU  
 • Capacities are provisional

**Figure 27**  
**TERMINAL CRANES ORDERED IN 2022, includes**

Facility	Port	Description	Outreach	Facility	Port	Description	Outreach
<b>Europe/Mediterranean</b>				<b>Latin America</b>			
Bandirma	Bandirma	2x MHC	51m	APM Terminal	Pecem	1x StS	22-rows
Genoa Port Term.	Genoa	1x MHC	61m	Tecon Santos	Santos	2x StS	ZPMC 70m
Term. Del Golfo	La Spezia	1x MHC	-	John Fernandes	Georgetown	1x MHC	Konecranes
NUTEP	Novorossiysk	2x StS	17boxes	Muneshwers	Georgetown	1x MHC	Konecranes
ECT Delta	Rotterdam	3x StS	25 boxes	<b>Africa</b>			
Vostochnaya Steve..	Vostochny	2x MHC	16 boxes	Tin Can Island CT	Lagos	2x MHC	18 boxes
<b>North America</b>				<b>Indian Sub Continent/Middle East</b>			
PSA Halifax	Halifax	2x MHC	24 boxes	East CT	Colombo	14x StS	-
Intl Transp. Svcs	Long Beach	5x StS	25 boxes	Saudi Global Ports	Dammam	3x StS	25 boxes
Tenth Ave. Marine	San Diego	2x MHC	-				
DP World St. John	St. John	2x StS	21 boxes				
CICE MPT	Veracruz	1x MHC	-				

**Notes:**  
 • StS=Ship-to-Shore, MHC=Mobile Harbour Crane  
 • Overview is a selection of orders

**Figure 28**  
**TERMINAL CRANES DELIVERED IN 2022, includes**

Facility	Port	Description	Outreach	Facility	Port	Description	Outreach
<b>Europe/Mediterranean</b>				<b>Far East</b>			
El Dekheila CT	Alexandria	1x StS	23 boxes	Fuzhou ICT (PSA)	Fuzhou	1x StS	25 boxes
Trans Misr Terminal	Alexandria	4x StS	63m	Haikou CT	Haikou	3x StS	-
Pier 11	Alicante	2x Sts	-	Yongzhou CT	Ningbo	4x StS	-
Ashdod CT	Ashdod	5x StS	24 boxes	Tibar Bay	Dili	2x StS	-
Hadarom CT	Ashdod	5x StS	-	Jakarta ICT	Tanjung Priok	2x StS	24boxes
Noatum	Castellon	1x MHC	54m	Bintulu ICT	Bintulu	1x StS	16 boxes
DCCH	Damietta	3x StS	25 boxes	Tanjung Pelepas	Tanjung Pelepas	4x StS	-
Safipor Derince	Izmit	1x StS	23 boxes	Asia World Port Term	Yangon	2x StS	13 boxes
Koper CT	Koper	2x StS	24 boxes	Mindanao CT	Cagayan de Oro	1x MHC	-
Liscont	Lisbon	4x StS	22 boxes	New Cebu IC Port	Cebu	2x MHC	54m
Seaforth Term.	Liverpool	2x StS	-	PSA Tuas	Singapore	4x StS	25 boxes
Med Europe Term	Marseilles	2x StS	-	PSA Tuas	Singapore	4x StS	25 boxes
Westports	Port Kelang	3x StS	-	Busan CT	Busan	3x StS	-
TC Ravenna	Ravenna	1x StS	18 boxes	CT7-Kaohsiung ICT	Kaohsiung	4x StS	-
Noatum	Sagunto	1x MHC	48m	CT7-Kaohsiung ICT	Kaohsiung	4x StS	-
Salerno CT	Salerno	1x MHC	22 boxes	CT7-Kaohsiung ICT	Kaohsiung	3x StS	72m
Santander Terminal	Santander	2x StS	-	Wan Hat CT Taichung	Taichung	1x StS	-
Noatum Tarragona	Tarragona	1x MHC	48m	Terminal D	Laem Chabang	4x StS	25 boxes
Thessaloniki CT	Thessaloniki	2x StS	56m	Cai Mep IT	Ho Chi Minh	1x StS	23 boxes
CSP Valencia	Valencia	1x StS	24 boxes	Gemalink Cai Mep	Ho Chi Minh	2x StS	25 boxes
P&O Ferries Terminal	Zeebrugge	1x StS	-	Xiaochantan)	Yangpu	4x StS	-
<b>North America</b>				<b>Indian Sub Continent/Middle East</b>			
Wando Welch Term	Charleston	1x StS	22 boxes	New Mooring CT	Chittagong	4x StS	14 boxes
Bayport CT	Houston	3x StS	23 boxes	South Asia Gateway	Colombo	2x StS	-
Maher Newark	New York	3x StS	-	Adani Gangavaram CT	Gangavaram	5x StS	-
Norfolk Intl Term	Norfolk	2x StS	25 boxes	CT2	Hamad	4x StS	-
<b>Latin America</b>				<b>Africa</b>			
Muelle Norte	Callao	1x StS	-	Kandla ICT	Kandla	2x StS	36m
Coronel CT	Coronel	1x StS	23 boxes	Adani Mundra CT	Mundra	1x StS	-
TP Guayaquil	Guayaquil	1x StS	24 boxes	Mundra ICT	Mundra	2x StS	22 boxes
DP World Lirquen	Lirquen	2x StS	22 boxes	Adani ICT	Mundra	2x StS	-
APMT Pecem	Pecem	1x StS	-	<b>Australasia</b>			
Rio Haina	Rio Haina	2x StS	-	Newcastle	Newcastle	2x MHC	54m
ICAVE	Veracruz	1x StS	24 boxes	South Pacific ICT	Lae	2x StS	17 boxes

**Notes:**  
 • StS=Ship-to-Shore, MHC=Mobile Harbour Crane  
 • Overview is a selection of deliveries  
 • Includes repositions

**Figure 29**  
**INDIVIDUAL TERMINAL SALES IN 2022, includes**

Facility	From	To	Share
<b>Europe/Mediterranean</b>			
Antwerp Euroterminal	Mexico Natie	Grimaldi <sup>1)</sup>	50%
CSP Zeebrugge Term.	Antwerp-Bruges	CoscoSP <sup>2)</sup>	5.00%
Le Porte Ocean	Perrigault	TIL <sup>1)</sup>	n/a-
T. de Normandie MSC	Perrigault	TIL <sup>1)</sup>	50%
Hamburg/Tollerort CT	HHLA	CoscoSP	24.99%
CT Wilhelmshaven	APMT	Hapag-Lloyd	30%
Liscont CT	Eurogate	Yilport <sup>1)</sup>	16%
Advance CT Burgas	Advance Prop.	3SIIF	Minority
CT project	Hutchison Ports	Evergreen	20%
Trieste Marine Term.	T.O. Delta	TIL	30%
<b>Far East</b>			
Hijo port	ICTSI	Hijo Resources Corp	65.00%
<b>North America</b>			
Fairview Cove CT	NYK	PSA	100%
LA/Fenix Marine	EQT Infra.	CMA CGM	90%
Yusen Term. Oakland	MOL	ONE*	51%
<b>Indian Sub Continent/Middle East</b>			
Visakha CT	DP World	J.M. Baxi #	26%
Jebel Ali Port	DP World	Hassana Investment	10.2%
Jebel Ali Port	DP World	C. de Depot et Plac.	22%
Gangavaram Port	DVS Raju	Adani Ports	58.1%
Gangavaram Port	Andhra Pradesh	Adani Ports <sup>1)</sup>	10.4%
<b>Africa</b>			
Porto Pontal (project)	JCR group	Vinci Partners	100%

**Notes:**

- \* = agreed not approved/completed
- 1) Becoming sole owner
- 2) Taking share to 90%

**Figure 30**  
**TERMINAL GROUP SALES IN 2022**

Group	From	To	Share
Bolloré Africa Logistics	Bolloré group	MSC	100%
Boluda Maritime	Boluda Corp Mar.	DIF Capital	49%
Global Container Term	Shareholders	CMA CGM*	100%
Global Ports Inv.	Maersk	Delo Group <sup>1)</sup>	38%
Grupo Spinelli	Shareholders	Hapag-Lloyd <sup>2)</sup>	49%
Guangzhou Port	China COSCO	Cosco Shipping Hold <sup>3)</sup>	3%
Haifa Port Company	Shareholders	Adani Ports	70%
Haifa Port Company	Shareholders	Gadot Group	30%
Multi-Link Terminals	Global Ports Inv.	CMA CGM <sup>4)</sup>	25%
Noatum	Shareholders	AD Ports*	100%
SAAM S.A.	Shareholders	Hapag-Lloyd*	100%
SIPG	China COSCO	Cosco Shipping Hold <sup>5)</sup>	15%
TraPac Terminal	MOL	ONE	51%

**Notes:**

- \* = agreed not approved/completed
- 1) taking total up to 75%
- 2) completed January 2023
- 3) taking share to 6.5%
- 4) taking share to 50%
- 5) taking share to 15.6%

**Figure 31**  
**GLOBAL TERMINAL OPERATOR THROUGHPUT**

Rank 2021	Stevedores	2021 share	2021 TEU	2020 TEU	2019 TEU
3	APM Terminals	5.8%	50,400,000	45,700,000	46,800,000
16	Bolloré	0.4%	3,400,000	3,000,000	3,200,000
5	China Merchants	5.6%	48,000,000	47,100,000	41,500,000
12	CMA CGM	0.8%	7,300,000	6,300,000	8,300,000
4	CoscoSP	5.7%	49,000,000	46,200,000	48,600,000
6	DP World	5.5%	47,900,000	44,000,000	44,300,000
13	Eurogate	0.8%	6,700,000	5,900,000	6,300,000
11	Evergreen	0.9%	7,700,000	7,200,000	8,300,000
14	HHLA	0.7%	6,400,000	6,200,000	7,700,000
15	HMM	0.6%	4,900,000	4,700,000	5,000,000
7	Hutchison	5.4%	47,000,000	44,700,000	45,700,000
9	ICTSI	1.3%	11,000,000	10,100,000	10,100,000
18	MOL	0.3%	3,000,000	3,300,000	3,200,000
17	NYK	0.4%	3,200,000	3,300,000	3,400,000
2	PSA	7.4%	64,300,000	59,500,000	60,400,000
20	SAAM	0.3%	2,200,000	1,900,000	2,200,000
10	SSA Marine	1.0%	8,800,000	7,900,000	8,300,000
8	TIL	3.9%	33,700,000	31,800,000	28,800,000
19	Yang Ming	0.3%	2,600,000	2,200,000	2,300,000
1	Yilport	8.6%	74,000,000	6,300,000	7,100,000
<b>Total above operators</b>		<b>56%</b>	<b>481,500,000</b>	<b>387,300,000</b>	<b>391,500,000</b>
Estimated world total		100%	864,000,000	803,000,000	813,000,000

**Notes:**

- Data sourced from Drewry, equity based
- Throughput by equity share
- PSA and Hutchison adjusted to account for PSA 20% in Hutchison
- TIL excludes volumes of terminals owned directly by MSC

**Figure 32**  
**GLOBAL TERMINAL OPERATOR LOCATIONS**

<p><b>APM Terminals, The Hague</b></p> <p><b>Europe:</b> Aarhus, Algeciras, Aliaga, Barcelona, Bremerhaven, Castellon, Gijon, Gothenburg, Kalundborg, Marseilles, Poti, Rijeka, Rotterdam, Savona, Valencia</p> <p><b>Americas:</b> Buenaventura, Buenos Aires, Callao, Itajai, Itapoa, Lázaro Cárdenas, Los Angeles, Miami, Mobile, New York/New Jersey, Pecem, Progreso, Puerto Limon, Puerto Quetzal, Santos</p> <p><b>Asia:</b> Aqaba, Colombo, Guangzhou, Khalifi Bin Salman, Laem Chabang, Nhava Sheva, Pipavav, Qingdao, Saigon, Salalah, Shanghai, Tanjung Pelepas, Tianjin, Xiamen, Yokohama</p> <p><b>Africa:</b> Abidjan, Conakry, Cotonou, Lagos, Monrovia, Onne, Pointe Noire, Port Said, Tangier Med, Tema</p>	<p><b>Africa:</b> Abu Qir, Alexandria</p> <p><b>Australasia:</b> Brisbane, Sydney</p>
<p><b>China Merchants Ports, Hong Kong</b></p> <p><b>Europe:</b> Ambarli, Antwerp, Dunkirk, Le Havre, Marsaxlokk, Marseilles, Nantes/St. Nazaire, Odessa, Rotterdam, Thessaloniki</p> <p><b>Americas:</b> Antioquia, Houston, Kingston, Miami, Paranaguá</p> <p><b>Asia:</b> Busan, Colombo, Dalian, Hambantota, Kaohsiung, Laem Chabang, Ningbo, Qingdao, Saigon, Shantou, Shenzhen, Singapore, Tianjin, Xiamen, Zhangzhou, Zhanjiang</p> <p><b>Africa:</b> Casablanca, Lagos, Tangier Med, Lomé</p>	<p><b>HMM, Seoul</b></p> <p><b>Europe:</b> Algeciras, Rotterdam</p> <p><b>Americas:</b> Long Beach, Tacoma</p> <p><b>Asia:</b> Busan, Kaohsiung, Tokyo</p>
<p><b>CMA CGM, Marseilles</b></p> <p><b>Europe:</b> Algeciras, Antwerp, Dunkirk, Helsinki, Le Havre, Marsaxlokk, Marseilles, Nantes/St. Nazaire, Odessa, Rotterdam, Seville, Thessaloniki, Zeebrugge, Kotka</p> <p><b>Americas:</b> Antioquia, Degrad des Cannes, Dutch Harbour, Fort de France, Houston, Kingston, Long Beach, Los Angeles, Miami, New York/New Jersey, Pointe-a-Pitre</p> <p><b>Asia:</b> Abu Dhabi/khalifa, Beirut, Busan, Kaohsiung, Kobe, Laem Chabang, Lattakia, Mundra, Nhava Sheva, Qingdao, Saigon, Singapore, Tianjin, Tripoli, Xiamen, Yokohama</p> <p><b>Africa:</b> Alexandria, Casablanca, Kribi, Lekki, Tangier Med</p>	<p><b>ICTSI, Manila</b></p> <p><b>Europe:</b> Batumi, Gdynia, Rijeka</p> <p><b>Americas:</b> Buenaventura, Guayaquil, La Plata, Manzanillo (Mex), Puerto Cortes, Rio de Janeiro, Suape</p> <p><b>Asia:</b> Batangas, Cagayan de Oro, Davao, General Santos, Karachi, Manila, Subic Bay, Umm Qasr, Yantai</p> <p><b>Africa:</b> Matadi, Onne, Toamasina</p> <p><b>Australasia:</b> Lae, Melbourne, Port Moresby</p>
<p><b>Cosco Group/Cosco Shipping Ports, Hong Kong</b></p> <p><b>Europe:</b> Ambarli, Antwerp, Bilbao, Hamburg, Marseilles, Piraeus, Rotterdam, Savona, Valencia, Zeebrugge</p> <p><b>Americas:</b> Chancay, Long Beach, Los Angeles, Seattle</p> <p><b>Asia:</b> Abu Dhabi/khalifa, Busan, Dalian, Guangzhou, Hong Kong, Jeddah, Jinzhou, Kaohsiung, Lianyungang, Nanjing, Nantong, Ningbo, Qingdao, Qinhuangdao, Qinzhou, Quanzhou, Shanghai, Shenzhen, Singapore, Suzhou - Taicang, Suzhou - Zhangjiagang, Tianjin, Xiamen, Yangzhou, Yingkou</p> <p><b>Africa:</b> Port Said</p>	<p><b>"K" Line, Tokyo</b></p> <p><b>Europe:</b> Antwerp</p> <p><b>Asia:</b> Kobe, Nagoya, Osaka, Tokyo, Yokohama</p>
<p><b>DP World, Dubai</b></p> <p><b>Europe:</b> Antwerp, Constanța, Izmit</p> <p><b>Americas:</b> Buenos Aires, Callao, Caucedo, Lirquen, Nanaimo, Paita, Paramari-Posorja, Prince Rupert, Saint John, San Antonio, Santos, Vancouver BC</p> <p><b>Asia:</b> Batangas, Busan, Chennai, Cochin (Kochi), Dubai, Hong Kong, Jeddah, Laem Chabang, Manila, Mundra, Nhava Sheva, Port Qasim, Qingdao, Saigon, Surabaya/Gresik, Yantai</p> <p><b>Africa:</b> Algiers, Banana, Berbera, Bosaso, Dakar, Djen-Djen, Luanda, Maputo, Sokhna, Ndayane</p> <p><b>Australasia:</b> Brisbane, Fremantle, Melbourne, Sydney</p>	<p><b>MOL, Tokyo</b></p> <p><b>Europe:</b> Rotterdam</p> <p><b>Asia:</b> Hai Phong, Kobe, Laem Chabang, Nagoya, Osaka, Saigon, Tokyo, Yokohama</p>
<p><b>Eurogate, Bremen</b></p> <p><b>Europe:</b> Bremerhaven, Hamburg, La Spezia, Limassol, Ravenna, Salerno, Ust-Luga, Wilhelmshaven</p> <p><b>Africa:</b> Damietta, Tangier Med</p>	<p><b>MSC, Geneva</b></p> <p><b>Europe:</b> Ambarli, Antwerp, Bilbao, Bremerhaven, Civitavecchia, Genoa, Gioia Tauro, Iskenderun, Klaipeda, La Spezia, Le Havre, Marseilles, Naples, Rotterdam, Sines, Tekirdag, Trieste, Valencia, Venice, Leghorn, St. Petersburg</p> <p><b>Americas:</b> Balboa, Buenos Aires, Callao, Colon, Freeport, Freeport (Texas), Houston, Itajai, Long Beach, Los Angeles, Montreal, New Orleans, New York/New Jersey, Port Everglades, Rio de Janeiro, Santos, Seattle, Valparaiso, Vitória</p> <p><b>Asia:</b> Abu Dhabi/khalifa, Ashdod, Dili, King Abdullah Seaport, Mundra, Ningbo, Port Reunion, Singapore, Tuticorin</p> <p><b>Africa:</b> Abidjan, Alexandria, Conakry, Cotonou, Dakar, Freetown, Kribi, Lagos, Las Palmas de Gran Canaria, Libreville, Monrovia, Moroni, Pointe Noire, San Pedro, Tangier Med, Tema, Walvis Bay, Lomé</p>
<p><b>Evergreen, Taipei</b></p> <p><b>Americas:</b> Colon, Los Angeles, Oakland, Tacoma</p> <p><b>Asia:</b> Colombo, Kaohsiung, Laem Chabang, Osaka, Taichung, Taipei, Tokyo</p> <p><b>Africa:</b> Abu Qir</p>	<p><b>NYK, Tokyo</b></p> <p><b>Americas:</b> New York/New Jersey, Oakland</p> <p><b>Asia:</b> Dalian, Jakarta/Tanjung Priok, Kaohsiung, Kobe, Laem Chabang, Nagoya, Tokyo, Yokohama</p>
<p><b>Hapag-Lloyd</b></p> <p><b>Europe:</b> Genoa, Hamburg, Salerno, Wilhelmshaven</p> <p><b>Africa:</b> Damietta, Tangier Med</p>	<p><b>PSA, Singapore</b></p> <p><b>Europe:</b> Antwerp, Gdansk, Genoa, Mersin, Sines, Venice</p> <p><b>Asia:</b> Busan, Chao Praya River, Chennai, Dalian, Dammam, Fuzhou, Guangzhou, Incheon, Jakarta/Tanjung Priok, Kakinada, Kitakyushu, Kolkata, Laem Chabang, Lianyungang, Nhava Sheva, Qinzhou, Saigon, Singapore, Tianjin, Tuticorin, Umm Qasr</p> <p><b>Africa:</b> Balboa, Buenaventura, Buenos Aires, Eddystone, Halifax</p>
<p><b>Hutchison Ports, Hong Kong</b></p> <p><b>Europe:</b> Amsterdam, Barcelona, Felixstowe, Gdynia, Moerdijk, Rotterdam, Thamesport, Stockholm</p> <p><b>Americas:</b> Balboa, Colon, Ensenada, Freeport, Lázaro Cárdenas, Manzanillo (Mex), Veracruz</p> <p><b>Asia:</b> Ajman, Basra, Busan, Hong Kong, Huizhou, Jakarta/Tanjung Priok, Karachi, Kwangyang, Laem Chabang, Ningbo, Port Kelang, Ras Al Khaimah, Saigon, Shanghai, Shenzhen, Sohar, Umm Al Quwain, Xiamen, Yangon, Jazan</p>	<p><b>SAAM, Valparaiso</b></p> <p><b>Americas:</b> Antofagasta, Caldera, Guayaquil, Iquique, Mazatlan, Port Everglades, San Antonio, San Vicente/Talcahuano</p>
<p><b>Yilport, Kocaeli</b></p> <p><b>Europe:</b> Ferrol, Gävle, Gemlik, Huelva, Izmit, Leixoes, Lisbon, Marsaxlokk, Oslo, Setubal, Taranto, Figueira da Foz</p> <p><b>Americas:</b> Paita, Puerto Bolivar, Puerto Quetzal</p> <p><b>Africa:</b> Takoradi</p>	<p><b>SSA Marine, Seattle</b></p> <p><b>Americas:</b> Barranquilla, Charleston, Colon, Everett, Gulfport, Jacksonville, Long Beach, Manzanillo (Mex), Oakland, Philadelphia, Port au Prince, San Antonio, San Juan, San Vicente/Talcahuano, Santa Marta, Savannah, Seattle, Tacoma, Tuxpan, Wilmington (NC)</p> <p><b>Asia:</b> Cai Lan, Saigon</p>

Figure 33

## TOP 130 CONTAINER PORTS

Ranking 2021	Ranking 2020	Port	2022 TEU	'21/'20 %	2021 TEU	2020 TEU	2019 TEU	Ranking 2021	Ranking 2020	Port	2022 TEU	'21/'20 %	2021 TEU	2020 TEU	2019 TEU
59	55	Abu Dhabi	4,330	6%	3,440	3,233	2,791	18	19	Long Beach	9,134	16%	9,384	8,113	7,632
119	99	Alexandria	-	-12%	1,474	1,670	1,815	16	17	Los Angeles	9,911	16%	10,700	9,213	9,530
40	32	Algeciras	4,763	-6%	4,797	5,106	5,119	37	41	Manila	5,474	12%	4,976	4,438	5,315
125	123	Aliaga	1,494	9%	1,389	1,276	1,132	61	63	Manzanillo	3,474	16%	3,371	2,910	3,069
70	64	Ambarli	2,867	2%	2,943	2,888	3,105	69	75	Marsaxlokk	2,890	22%	2,970	2,440	2,710
14	13	Antwerp	11,147	0%	12,010	12,031	11,860	115	118	Marseilles	1,530	17%	1,539	1,318	1,455
109	106	Ashdod	-	3%	1,637	1,584	1,538	63	65	Melbourne**	3,233	14%	3,294	2,880	3,021
54	57	Balboa	3,349	13%	3,563	3,162	2,899	87	89	Mersin	1,990	8%	2,107	1,949	1,854
126	111	Bangkok	1,268	-2%	1,388	1,420	1,464	122	117	Mombasa	1,450	6%	1,436	1,360	1,417
55	62	Barcelona	3,522	19%	3,531	2,958	3,324	106	104	Montreal	1,723	8%	1,728	1,607	1,745
36	35	Bremerhaven	4,570	5%	5,019	4,771	4,857	27	27	Mundra	6,203	15%	6,515	5,650	4,820
117	119	Brisbane**	153	15%	1,495	1,304	1,342	75	73	Nagoya	2,680	10%	2,726	2,471	2,844
121	116	Buenos Aires	-	5%	1,446	1,372	1,485	67	59	Nanjing	3,200	3%	3,110	3,020	3,310
7	7	Busan	21,830	4%	22,538	21,599	21,764	90	91	Nantong	2,240	6%	2,030	1,910	1,542
31	46	Cai Mep	5,593	40%	5,385	3,858	3,742	19	21	New York	9,494	18%	8,986	7,586	7,471
79	81	Callao	-	10%	2,486	2,251	2,314	28	39	Nhava Sheva	5,993	22%	5,683	4,677	5,031
52	60	Cartagena	2,982	20%	3,612	3,003	2,813	3	3	Ningbo	33,350	8%	31,080	28,720	27,530
120	128	Caucedo	1,376	26%	1,470	1,169	1,264	80	74	Oakland	2,337	-1%	2,448	2,461	2,500
74	79	Charleston	2,792	19%	2,751	2,310	2,436	81	76	Osaka	-	3%	2,426	2,359	2,457
112	114	Chennai	1,470	15%	1,595	1,387	1,384	32	29	Piraeus	4,462	-2%	5,320	5,437	5,646
65	67	Chittagong	3,143	13%	3,214	2,840	3,088	12	12	Port Kelang	13,224	4%	13,724	13,234	13,581
24	23	Colombo	-	6%	7,250	6,850	7,230	41	43	Port Said	-	19%	4,765	4,010	3,816
38	40	Colon	5,103	9%	4,916	4,492	4,379	6	6	Qingdao	25,670	8%	23,700	22,010	21,010
49	31	Dalian	4,460	-28%	3,670	5,110	8,760	43	44	Qinzhou	5,410	17%	4,630	3,950	3,020
105	92	Dammam	-	-5%	1,769	1,863	1,823	97	80	Quanzhou	2,080	-14%	1,950	2,260	2,580
60	51	Dongguan	3,410	-1%	3,400	3,420	3,680	34	33	Rizhao	5,800	6%	5,170	4,860	4,500
11	11	Dubai	13,970	2%	13,742	13,488	14,111	10	10	Rotterdam	14,455	7%	15,300	14,349	14,811
77	71	Durban	2,605	4%	2,696	2,595	2,780	44	42	Salalah	-	4%	4,510	4,340	4,095
51	50	Felixstowe	-	4%	3,630	3,491	3,840	99	107	San Antonio	-	17%	1,840	1,571	1,710
108	120	Freeport	-	26%	1,643	1,300	1,397	118	109	San Juan	-	0%	1,490	1,490	1,452
58	49	Fuzhou	3,460	-2%	3,450	3,520	3,540	45	45	Santos	4,450	13%	4,394	3,901	4,165
86	90	Gdansk	2,072	10%	2,118	1,924	2,073	30	38	Savannah	5,892	20%	5,613	4,680	4,596
78	77	Genoa	2,533	9%	2,557	2,353	2,615	1	1	Shanghai	47,300	8%	47,030	43,500	43,300
66	56	Gioia Tauro	3,380	-1%	3,147	3,193	2,523	104	105	Shantou	1,760	13%	1,800	1,590	1,350
5	5	Guangzhou	24,600	4%	24,180	23,170	22,830	4	4	Shenzhen	30,040	8%	28,770	26,550	25,770
84	86	Guayaquil	-	4%	2,163	2,071	1,943	101	103	Sines	-	13%	1,820	1,612	1,423
46	47	Hai Phong	5,629	8%	4,027	3,739	3,487	2	2	Singapore	37,290	2%	37,571	36,871	37,195
116	113	Haifa	-	6%	1,496	1,410	1,379	102	96	Southampton	-	3%	1,818	1,762	1,878
91	87	Haikou	2,150	2%	2,010	1,970	1,970	88	84	St Petersburg	925	-3%	2,042	2,100	2,222
114	112	Hamad	1,409	9%	1,544	1,413	1,340	53	48	Surabaya	-	0%	3,602	3,600	3,930
20	18	Hamburg	8,283	2%	8,728	8,540	9,274	22	24	Suzhou	9,080	29%	8,110	6,290	6,270
23	20	Ho Chi Minh	8,397	1%	7,956	7,864	7,220	76	72	Sydney**	2,797	8%	2,704	2,494	2,640
9	9	Hong Kong	16,573	-1%	17,772	17,953	18,360	47	52	Tacoma/Seattle	3,384	13%	3,736	3,320	3,775
57	61	Houston	3,975	16%	3,453	2,989	2,990	94	94	Taichung	1,785	9%	1,979	1,821	1,794
62	54	Inchon	3,147	2%	3,325	3,249	3,080	92	102	Taipei	1,790	24%	2,009	1,618	1,620
110	124	Itajai	1,493	26%	1,610	1,273	1,233	25	26	Tangier	7,597	24%	7,170	5,771	4,802
96	95	Izmit	2,059	9%	1,968	1,801	1,715	64	58	Tangshan	3,340	5%	3,290	3,120	2,940
123	122	Jacksonville	1,298	10%	1,407	1,277	1,338	15	15	T. Pelepas	10,513	13%	11,088	9,846	8,940
42	37	Jeddah	-	0%	4,739	4,737	4,434	26	25	Tanjung Priok	-	10%	6,750	6,134	6,812
83	88	Jiaying	2,850	13%	2,220	1,960	1,870	103	110	Tekirdag	1,773	25%	1,812	1,444	1,414
100	100	Jinzhou	1,880	12%	1,830	1,640	1,880	113	121	Tema	1,206	21%	1,562	1,286	1,032
17	16	Kaohsiung	9,492	3%	9,864	9,622	10,429	8	8	Tianjin	21,020	10%	20,270	18,350	17,300
82	85	Karachi**	-	10%	2,290	2,080	2,098	39	36	Tokyo	4,932	2%	4,863	4,746	5,007
111	108	Keelung	1,623	4%	1,601	1,533	1,455	29	30	Valencia	5,076	4%	5,614	5,415	5,440
73	82	King Abdullah	2,905	31%	2,814	2,154	2,021	48	66	Vancouver	3,540	30%	3,679	2,841	3,399
95	101	Kingston	-	21%	1,975	1,631	1,648	56	68	Virginia Ports	3,703	25%	3,520	2,813	2,930
72	70	Kobe	2,891	7%	2,824	2,647	2,872	129	126	Weihai	1,400	10%	1,340	1,220	1,030
85	83	Kwangyang	1,862	-1%	2,123	2,151	2,377	13	14	Xiamen	12,430	6%	12,046	11,410	11,120
127	127	La Spezia	1,262	17%	1,376	1,174	1,409	130	130	Yangpu	1,770	28%	1,310	1,020	708
21	22	Laem Chabang	8,741	13%	8,523	7,546	7,981	50	53	Yantai	4,120	11%	3,650	3,300	3,100
107	129	L. Cárdenas	2,027	59%	1,686	1,064	1,319	33	27	Yingkou	5,000	-8%	5,210	5,650	5,480
68	78	Le Havre	3,039	29%	3,025	2,349	2,767	71	69	Yokohama	2,965	7%	2,859	2,662	2,994
35	34	Lianyungang	5,570	5%	5,030	4,800	4,780	124	125	Zhanjiang	1,540	14%	1,400	1,230	1,120
93	98	Lome	-	15%	1,986	1,725	1,501	128	115	Zhongshan	1,330	-1%	1,370	1,380	1,410
98	97	London	-	6%	1,857	1,747	1,764	89	93	Zhuhai	1,100	11%	2,040	1,840	2,500
<b>Notes</b>															
• Unit: 1,000 TEU, *Fiscal April-March, **Fiscal July-June															
• Selection based upon 2021 port throughput															
• Chinese port statistics often contain (substantial) inland barge handlings															
			<b>Total Top 130</b>			8% 721,327 669,851 673,933									
			Other ports			7% 142,673 133,149 139,067									
			<b>World total (est.)</b>			8% 864,000 803,000 813,000									
			Share Top 130			83% 83% 83%									

## SHIPS AND CONTAINERS

## SHIPS

## Global fleet developments

## Headline figures

At the end of 2022, the capacity of the global container shipping fleet was 26.4 million TEU, an increase of just over 1.0 million TEU and four percent year-on-year. Both figures were slightly down on the growth rates of 2021. Although the TEU increase was only the tenth largest this century, the number of ships grew by 196 units, a level not seen since the 2002-2008 period when the average was 216 each year.

At the end of 2022, the average ship could carry 4,050 TEU, some 40 TEU more than 2021. As with almost every single year, this is the highest average ever recorded. To place in context, in 2001, the average was 1,350 TEU, meaning that, on average, capacity has grown by seven percent each year, every year.

## Container capable fleet available to liner operators

Year	Ships	TEU	TEU Growth %	Growth TEU
2022	6,515	26,375,300	4%	1,030,500
2021	6,319	25,344,800	5%	1,108,600
2020	6,171	24,236,200	3%	622,200
2019	6,150	23,614,000	4%	883,700
2018	6,147	22,730,300	6%	1,220,300
2017	6,047	21,510,000	4%	830,000
2016	6,007	20,680,000	2%	422,000
2015	6,087	20,258,000	8%	1,436,000
2014	5,968	18,822,000	6%	1,058,000
2013	5,974	17,764,000	6%	961,000
2010	5,967	14,809,000	9%	1,166,000
2005	5,380	9,131,000	12%	963,000
2001	4,548	6,143,000	7%	-
<b>CAGR 10-yr</b>	<b>1.0%</b>	<b>4%</b>	<b>5%</b>	<b>957,000</b>
CAGR 2010	0.7%	5%	5%	964,000
CAGR 2005	1.1%	6%	6%	1,014,000
CAGR 2001	1.7%	7%	7%	976,000

As of 31 December of each year. Analysis based on data sourced from Alphaliner. Growth is year-on-year.

## Containership deliveries

There were 175 vessel deliveries in 2022, this figure being above the ten-year average by nine units. However, the capacity these could bring was only 998,000 TEU, this being well below the average and only the fourth year this past decade of fewer than 1.0 million TEU being delivered.

## More than delivered...

It is noteworthy that the containership grew by twenty-one more ships and 32,100 TEU than were delivered newbuild (an average of 1,528 TEU). Alongside, a very small number of ships were scrapped. This suggests that other ships from outside the containership sector came into the fleet. The most obvious and logical candidates are multipurpose ships. Although containers are not their core business, such vessels are eminently capable of carrying containers and are often employed as de facto containerships. Their increased presence in 2022 is supported by the large number of (new) services that turned to multipurpose tonnage to compensate for the lack of availability of cellular containerships.

The capacity share of the 2022 delivered fleet worked out at nearly four percent of the existing year-start fleet. This was also one of the weaker years and down one-and-a-half points on the ten-year average. Further, the average capacity of these latest deliveries fell significantly by 1,500 TEU to 5,700 TEU, a figure not seen since 2010 when it was 5,300 TEU.

## Containerships delivered

Year	Ships	Total TEU	Ave TEU	Fleet at year start	Delivery Share
2022	175	998,400	5,700	25,344,800	3.9%
2021	150	1,077,600	7,200	24,236,200	4.4%
2020	124	830,000	6,700	23,614,000	3.5%
2019	134	986,000			

**Containership recycling**

For the second year in a row, scrapping was very quiet with 2022 seeing only seven ships totalling 11,000 TEU sold for recycling. That activity occurred in either January (one ship), October (one ship) or December (the rest). The totals were the smallest number of ships and capacity since at least 2007. That the capacity exceeded 10,000 TEU was due only to a 5,600 TEU ship sold for recycling in December.

The average age of the 2022 scrapped ships approached twenty-nine years and was the second highest after 2021. The share of global capacity removed was but a trace. Placing 2022's performance in context, for the ten-year period, an average of 108 ships, aged 23.5 years and able to carry 278,000 TEU had been recycled each year.

**Containerships sold for demolition**

Year	Ships	Total TEU	Ave TEU	Ave Age	Fleet TEU at year start	Scrapped share
2022	7	11,100	1,600	27.7	25,344,800	0.1%
2021	12	12,800	1,100	29.6	24,236,200	0.1%
2020	82	201,000	2,500	23.6	23,614,000	0.9%
2019	95	198,900	2,100	23.1	22,730,300	0.9%
2018	58	113,000	1,900	23.4	21,510,000	0.5%
2017	152	441,000	2,900	20.8	20,680,000	2.1%
2016	201	699,000	3,500	18.6	20,258,000	3.5%
2015	94	215,000	2,300	23.3	18,822,000	1.1%
2014	173	417,000	2,400	23.2	17,764,000	2.3%
2013	204	477,000	2,300	21.9	16,803,000	2.8%
<b>Averages</b>	<b>108</b>	<b>278,000</b>	<b>2,600</b>	<b>23.6</b>	<b>21,176,000</b>	<b>1.4%</b>

Demolitions as noted by Dynamar from various sources. Differences between year-end fleet figures and the contributions from orders/demolitions may occur as ships will enter and leave the "global" fleet list for other reasons (e.g. casualty, conversion).

Within the first two months of 2023, the demolition figures of the previous year had already been surpassed. Twenty-one ships totalling 29,500 TEU had been sold for scrapping, ten of those (12,600 TEU) coming from Wan Hai alone.

**Containerships ordered**

Although containership ordering dropped back from 2021's busiest ever year, with 366 ships ordered able to deliver a further 3.0 million TEU, 2022 was still the second best year noted. Only 2007 came anywhere close with 429 ships and 2.6 million TEU ordered. The ordered capacity for 2022 was equivalent to 11.7% of the year-start fleet. This share was not only surpassed by 2021 (18.7%) and 2015, but it also lost out to 2011 (both around 12%).

**Containerships ordered**

Year	Ships	Total TEU	Ave TEU	Fleet at year start	Order Share
2022	366	2,967,700	8,100	25,344,800	11.7%
2021	540	4,533,000	8,400	24,236,200	18.7%
2020	92	735,000	8,000	23,614,000	3.1%
2019	87	749,000	8,600	22,730,300	3.3%
2018	174	1,070,000	6,100	21,510,000	5.0%
2017	75	599,000	8,000	20,680,000	2.9%
2016	68	284,000	4,200	20,258,000	1.4%
2015	229	2,258,000	9,900	18,822,000	12.0%
2014	133	1,002,000	7,500	17,764,000	5.6%
2013	207	1,653,000	8,000	16,803,000	9.8%
<b>Averages</b>	<b>197</b>	<b>1,585,000</b>	<b>8,000</b>	<b>21,176,000</b>	<b>7.5%</b>

For reasons particular to the market in which it operates, Matson of the United States often makes an appearance within the ships section of the Trades Review. Mostly, this is for the oldest ship(s) scrapped. Occasionally it is for a notable and most expensive order. This latter was the case in 2022 when it placed an order with compatriot Philly Shipyard for three ships of 3,600 TEU at USD 330 million each. This worked out at nearly USD 92,000 per TEU and was more than three times the equivalent price for the next most expensive set of ships that were ordered

in 2022. These were vessels of 1,300 TEU ordered at an equivalent of USD 30,000 per TEU.

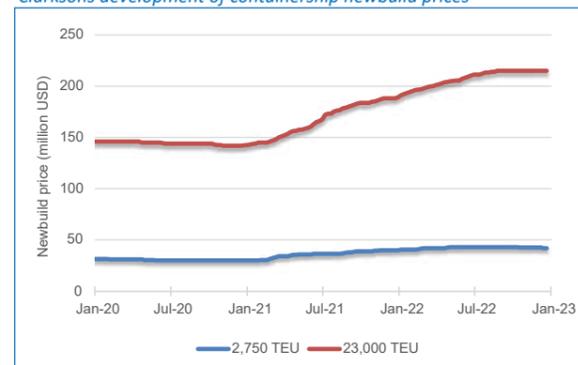
The Matson ships are LNG/dual fuel but can also be adapted later to run on another alternative fuel. Whilst this will add something to the cost, the main reason for their price tag is because they can work the United States domestic trades, which is Matson's core business. Implicit in this is the requirement for ships to be built in the United States which, in turn, adds considerably to the cost.

At the other end of the USD/TEU scale, CoscoSL and OOCL placed a combined order in 2022 for twelve ships of 24,000 TEU for USD 240 million each, in other words, USD 10,000 per TEU. The price per ship was still much cheaper than the much smaller Matson orders.

For the whole of 2021 through to October 2022, the average newbuilding prices for ships of 23,000 TEU grew each month. For 2022 alone, they started at USD 191 million and finished on USD 215 million, having been steady for the final quarter of the year. Even with that apparent hiatus, the year-start to end appreciation was still twelve percent.

Prices for newbuild ships of 2,750 TEU plateaued in June 2022. They then stayed at USD 43 million for five months until starting to tail off. The average of USD 42.3 million was clearly the best noted since 2019, even with this year-end softening, and the year-low of USD 40.4 million was still higher than the previous year's best.

**Clarksons development of containership newbuild prices**

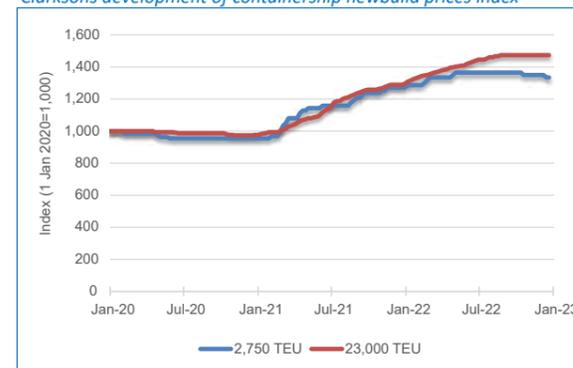


Source: Clarksons

Understandably, the newbuild price developments in USD are of a much greater magnitude for the larger 23,000 TEU ships than for the 2,750 TEU class. The former had a low/high variance of USD 23-24 million while for the smaller vessels, the distance between the highest and lowest was less than USD 3 million. However, at the relative level, both capacity classes developed in very similar ways.

With their prices indexed at 1,000 from the start of 2020, both classes struggled to keep at that level until mid-2021 when they started accelerating. They continued following each other to around mid-2022 when the price index for 23,000 TEU ships was 1,400 and for 2,750 TEU ships was 1,365. Thereafter, the smaller class stayed the same before tailing off to finish on 1,333. The larger class managed to gradually squeeze a few more dollars into the price to finish on an index value 1,473, although that too had been stable for four months.

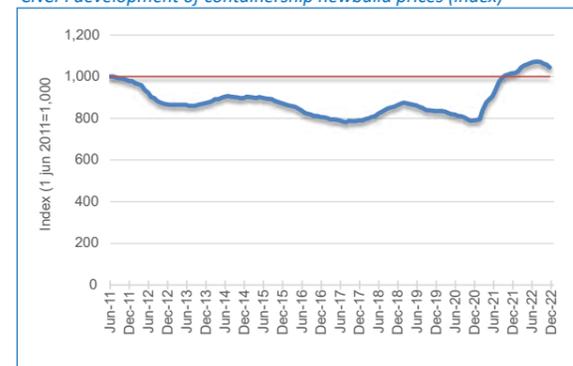
**Clarksons development of containership newbuild prices index**



Based upon data sourced from Clarksons

Another indicator, the China Newbuilding Containership Price Index (CNCPI), picked up from 2021's growth and kept adding. It opened the year at 1,017 until it reached a peak of just over 1,070 points in the third quarter. Alike the prices for 2,750 TEU ships, the index softened somewhat thereafter to close year on 1,044. However, all annual measurements, high, average and low, were by far the best ever noted since the index's inception in 2011.

**CNCPI development of containership newbuild prices (index)**



CNCPI table to blue pageWith orders significantly outpacing deliveries for two years in a row, the outstanding orderbook of all vessels still to be delivered jumped up by nearly 230 ships and 1.77 million TEU in 2022. This left 937 ships outstanding at the end of 2022, the highest number since 2008 and fifth highest this century. The capacity these ships could bring of 7.5 million TEU was actually the highest since 2000, beating 2008's previous best of 6.3 million TEU. The twenty-eight percent share of the year start fleet was the highest for eleven years but was equalled or surpassed by a number of earlier years this century.

**Containership orderbook development**

Year	Ships	TEU	Share	Ave TEU
2022	937	7,488,535	28%	8,000
2021	709	5,793,200	23%	8,200
2020	305	2,482,000	10%	8,100
2019	339	2,292,000	10%	6,800
2018	418	2,744,000	12%	6,600
2017	344	2,667,000	12%	7,800
2016	421	3,244,000	16%	7,700
2015	513	4,151,000	20%	8,100
2014	456	3,326,000	18%	7,300
2013	497	3,816,000	21%	7,700
Ave '16-'20	365	2,685,800	12%	7,400
Ave '11-'15	517	3,827,400	22%	7,400
Ave '06-'10	829	4,680,000	37%	5,700
Ave '01-'05	726	2,709,000	34%	3,600
<b>CAGR 10-yr</b>	<b>7%</b>	<b>8%</b>	<b>17%</b>	<b>7,700</b>
CAGR 2010	4%	6%	17%	7,600
CAGR 2005	-2%	3%	24%	6,800
CAGR 2001	4%	8%	26%	6,000

As at 31 December of each year.

Share = share of existing fleet

Analysis based on data sourced from Alphaliner

**Containerships laid-up**

The vessel lay-up pattern in 2022 was very similar to 2021 with it maintaining the historically low levels for the first nine months at least. Thereafter, the numbers, TEU and shares laid-up increased, but even with this, the averages were only slightly higher than for 2021.



## Containership lay-up development by month in 2022

Month	Ships	Total TEU	Share	Average
Dec	93	582,000	2.2%	6,300
Nov	93	566,000	2.2%	6,100
Oct	100	458,000	1.8%	4,600
Sep	72	261,000	1.0%	3,600
Aug	57	271,000	1.1%	4,700
Jul	63	218,000	0.9%	3,500
Jun	60	202,000	0.8%	3,400
May	57	207,000	0.8%	3,600
Apr	52	223,000	0.9%	4,300
Mar	65	204,000	0.8%	3,100
Feb	47	86,000	0.4%	1,800
Jan	46	117,000	0.5%	2,500
<b>Averages</b>	<b>67</b>	<b>283,000</b>	<b>1.1%</b>	<b>4,200</b>
2021	55	191,000	0.8%	3,500
2020	271	1,405,000	6.0%	5,200
2019	177	733,000	3.2%	4,100
2018	127	394,000	1.8%	3,100
2017	215	751,000	3.9%	3,500
2016	315	1,244,000	6.2%	3,900
2015	168	546,000	2.1%	3,300
2014	153	375,000	2.1%	2,400
2013	220	602,000	3.6%	2,700

Number of ships and total nominal capacity in lay up (all carriers/owners) in the 2nd half of each month

## Containership sales

Sales activity in 2022 was much more subdued than the frantic experience of 2021. Only 135 vessels were moved on, this being 243 fewer units than in the previous year. The capacity these ships offered was 452,000 TEU. On both counts, the figures were the lowest seen since 2016's 125 ships and 409,000 TEU. No ships larger than 10,000 TEU were sold during 2022.

## Vessel sales by capacity in 2022

Capacity range	Ships	Average TEU	Total TEU
1,000-2,999	84	1,800	148,600
3,000-4,999	23	4,100	93,800
5,000-6,999	13	6,300	82,500
7,000-9,999	15	8,500	127,200
10,000-13,999	-	-	-
14,000+ TEU	-	-	-
<b>Total 2022</b>	<b>135</b>	<b>3,300</b>	<b>452,100</b>
2021	378	3,500	1,323,500
2020	176	4,700	825,400
2019	155	4,600	708,500
2018	205	3,400	691,000
2017	292	3,900	1,134,000
2016	125	3,200	409,000
2015	179	3,200	578,000
2014	160	2,500	501,500
2013	146	2,500	361,600

Sales as noted by Dynamar from a variety of sources. Includes estimates in case of block sales for a range of ships where individual vessel capacities are not advised.

At the start of 2022, shipping capacity was still at somewhat of a premium, with tonnage owners continuing to command astronomical charter rates or sale prices. Indicative of this was the early 2022 purchase by CMA CGM of the 2013-built "Rhodos", a 6,900 TEU ship, for USD 140 million. Such a price would have been enough for a newbuilding of twice the size. The ship was already on hire to CMA CGM, but this was coming to an end. At a reported charter rate of USD 22,000 per day, the purchase price was the equivalent of over seventeen years charter costs. However, the renewal rate would have been much much high-

er; charters for a number of 6,500-6,800 TEU vessels extended in 2022 ranged from USD 45,000 per day to USD 59,000 at periods of three or five years.

For the second year in a row, MSC emerged as the most active carrier in the second hand market. Having been linked to the purchase of ninety-one ships totalling 300,000 TEU in 2021, it is believed to have bought thirty-four in 2022. This later tranche was able to carry 175,000 TEU, sufficient to be equivalent to a virtual thirteenth largest container liner operator in the world as at the end of 2022. Regional carrier SITC was the actual thirteenth largest with 108 ships and 162,000 TEU.

## Casualties

## Fires, groundings, or collisions

In October 2022, the "TSS Pearl" (2,000 TEU), operated by Tehama Shipping, was sailing in the Red Sea and suffered a cargo fire. The crew abandoned ship and was picked up by other vessels with their own ship left to drift until it sank a week later around 300 kilometres southeast of Port Sudan.

More serious because it ultimately ended in one fatality, was the engine room fire suffered in April by the 500 TEU "General Romulo" which was active in the domestic Philippines trades. The fire spread through the ship requiring the crew to abandon with three others being injured. The incident occurred whilst the ship was at anchorage off Cebu island.

As the last example shows, it is not only open waters where there are dangers. Indeed, there are a surprising number of vessels that capsize whilst moored alongside, often when they are undergoing cargo operations. This was the case for both the "Sea Eagle" (4,300-dwt general cargo but carrying containers) and the "Maya" (230 TEU), their incidents occurring in Iskenderun (Turkey) and Tokuyama Shimomatsu (Japan) respectively. Remarkably, no casualties were reported in either incident.

Even before mooring, accidents can happen whilst navigating within the harbour. The "Tiger Maanshan" (1,400 TEU) allided with quayside, a moored vessel and even a quayside crane in August 2022. This occurred at Hai Phong (Dinh Vu) port and, again remarkable, no injuries were reported. The vessel was detained and only released very late into the year.

A more conventional collision - an allision involves one immovable object- occurred in April 2022 when the "Haian City" (1,400 TEU) came into contact with an oil tanker in the Bay of Bengal. Two holds were flooded with some containers being submerged for over twenty days. The vessel was recovered and towed to Chittagong where close to 150 boxes were unloaded; general average had been declared.

Finally, and although not usually covered due to their frequency, there was a notable grounding in 2022. This involved the Evergreen operated "Ever Forward" (12,100 TEU) which makes it a fleet contemporary of the "Ever Given", whose grounding in March 2021 ended up blocking the Suez Canal for six days. For the "Ever Forward", it happened in Chesapeake Bay (Baltimore) and lasted around five weeks over March and April 2022. Luckily, it did not seem to seriously impede navigation, but there was still significant effort involved in freeing the stuck ship. In fact, it only became possible after some 500 containers had been lightered, around ten percent of what it had been carrying.

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#### Containership casualties in 2022 included:

Vessel	Owner/Opr	TEU	Incident
Ever Forward	Evergreen/ Evergreen	12,100	Ran aground Chesapeake Bay (Baltimore). Efforts to refloat failed and after lightering 500 containers, vessel was freed around five weeks after grounding. General average declared
General Romulo	Magsaysay Maritime/ Magsaysay	500	Fire in engine room whilst at Cebu anchorage led vessel to be abandoned despite assistance being rendered. Vessel was later recovered. Four crew casualties including one fatality
Haian City	Hai An Transport/ Samudera	1,400	Collided with oil tanker 'Orion Express' in Bay of Bengal resulting in two holds flooding and 180 boxes being submerged for over 20 days. Vessel was salvaged and returned to Chittagong for repairs. One (empty) container lost overboard. General Average declared
CMA CGM Lisa Marie	BoComm/ CMA CGM	9,500	Fire in cargo hold whilst off Malaysia. Crew able to extinguish it with no injuries reported. Vessel continued to destination Jeddah
Maya	Imoto Lines/ Imoto Lines	230	Vessel capsized during cargo operations in Tokuyama Shimomatsu (Japan). No injuries although bunker fuel was lost. Estimated around 100 containers went into the water with operations launched to recover them
CMA CGM Rabelais	Danaos/CMA CGM	6,500	Fire broke out in cargo hold whilst transiting Strait of Malacca. 1x injured crewman evacuated
Tiger Maanshan	Greathorse/ Tiger Gas	1,400	Allided with quay, shoreside crane (which suffered significant damage) and another vessel whilst berthing at Dinh Vu, Vietnam. Vessel detained for a period
Hua Hang 1	Fujian Hua- rong Marine/ Fujian Huarong	660	Suffered engine room fire en route Keelung from Taicang. Crew evacuated, no reports of injuries, vessel later returned to service
MSC Rachele	MSC/MS	8,200	Explosion and subsequent fire in engine room whilst 40km off Toulon (France, Mediterranean). Three crew injured and airlifted out. Vessel towed to Marseilles (Fos)
X-Press Kohima	X-Press Feed- ers/X-Press	1,600	Whilst undergoing cargo operations in Chittagong, was hit by a barge under tow
TSS Pearl	Tehama Shipping/ Tehama	2,000	Suffered a fire whilst sailing in the Red Sea and subsequently sank around 300km SE of Port Sudan
GSL Grania	Global Ship Lease/ Maersk	7,500	Collided with crude tanker 'Zephyr I' (59,700-dwt) whilst transiting Strait of Malacca with both vessels significantly damaged but no crew injuries reported
Onego Traveller	Alpha Ship- ping/?	550	Suffered ingress of water whilst south of Great Abaco Island (Bahamas) and subsequently sank in shallow water; total loss

#### Container box casualties at sea

Aside from casualties involving vessels per se, there are also those that involve or are the result of lost or destroyed containers. Dynamar noted sixteen of these incidents in 2022 (and which may include instances of double-counting with the vessel casualties), which was one fewer than in 2021. It is also worth remembering that there are many more container box incidents that do not reach the public domain.

The opening quarter of 2022 saw significant incidents in successive months. In January, the "Madrid Bridge", which was being operated by ONE, suffered a container collapse whilst sailing across the Atlantic to New York. Sixty boxes were lost overboard with another eight damaged.

The next month, with echoes of the "MSC Zoe" of barely twenty-four months earlier, the "Marcos V" lost twenty-six boxes off the North Holland coast during a storm. These were followed up in March by the Maersk operated "Dyros" losing ninety containers with a further 100 damaged during bad weather in the Pacific. The ship was diverted to Lazaro Cardenas on Mexico's Pacific coast for unloading of those.

The "Dyros" did not lose most containers in 2022 though, as the coastal containership "Maya", operated by Imoto Lines, capsized whilst alongside Tokuyama Shimomatsu port in July. The vessel was being worked at the time and around 100 containers were said to have fallen into the water, although operations were soon underway to recover as many as possible.

An even more costly incident -by numbers of boxes- happened the following month when the "Zim Charleston" experienced a fire in one of its cargo holds shortly after leaving Colombo (Sri Lanka). The combination of fire, smoke and water was estimated to have damaged -at the least- some 300 containers.

From those incidents noted by Dynamar in 2022, and not including the 300 estimated to have been impacted by the fire on the "ZIM Charleston", more than 450 containers were destroyed or lost (overboard) for whatever reason. This is an "at least" figure, even as some of those going overboard will have been recovered. From the sixteen incidents, seven were the result of bad weather, with fires and port operations accounting for a further three each.

In comparison with previous years, and under the same "at least" and "some recovered" conditions, 2,800 containers were counted in 2021. There were 2,300 boxes lost/destroyed in 2020, 1,720 going the same way in 2019, whilst for 2018 the figure was just 332. In these contexts, 2022 appeared to be a relatively quiet year.

According to the World Shipping Council, some 660 containers were lost overboard in 2022. The number was 6,200 for the pre-

vious two-year period, whilst for the three years before that, the total was around 2,150. (These numbers relate only to containers lost overboard and do not include those lost/destroyed by other events, unlike in the accompanying table).

#### Vessel casualties involving container boxes in 2022 included:

Vessel	Where	When	Circumstances
Madrid Bridge	Atlantic, en route New York	Jan-22	Vessel suffered a container collapse whilst sailing across the Atlantic to New York. 60 boxes were lost overboard with another 8 damaged
Marcos V	Off north Netherlands	Feb-22	Lost 26 empty containers in mid-February during Storm Eunice. All were recovered by salvors come early April
Dyros	Around 1,200nm north of Japan, en route Seattle	Mar-22	Maersk operated vessel lost around 90 containers during bad weather, 9 with dangerous cargo, plus another 100 boxes damaged. Vessel diverted to Lazaro Cardenas (APMT) for unloading
Haian City	Bay of Bengal	Apr-22	Collided with oil tanker in Bay of Bengal resulting in two holds flooding and 180 boxes being submerged for over 20 days. Vessel was salvaged and returned to Chittagong for repairs. One (empty) container lost overboard
Marintrust-01	Kolkata	Apr-22	Vessel capsized during cargo operations with 10x 40' containers going overboard and 18x 20' containers being submerged. Faulty stowage plan was (provisionally) blamed; problems surrounding the (unsuccessful) salvage saw the ship declared abandoned whilst still blocking access to the quay
Monte Alegre	Santos	Apr-22	2x containers fell overboard whilst alongside in port. Reason unknown; 1x container retrieved
Fortune II/Namthong 27	Andaman Sea, off Thailand	May-22	Tug/barge combination caught in cyclonic weather lost 18 boxes overboard, at least 5 of which washed ashore
Mega Daya 43/Marcopolo 188	Strait of Malacca, 10nm off Indonesia	May-22	Tug/barge combination where latter developed 60 deg. list in heavy seas resulting in tow line being released. Barge later grounded. It was carrying 108x 20' and 87x 40', losing an estimated 18
SL Tweety	Sea of Marmara	Jun-22	Fire broke out in cargo hold and extinguished by crew; no indications if or how many containers damaged
APL Vanda	Nr. Gulf of Aden	Jul-22	Around 55 containers reported as falling overboard with another 36 damaged during bad weather. Was en route Suez and diverted to Djibouti for unloading and inspection
Maya	Tokuyama Shimomatsu port	Jul-22	Vessel capsized during cargo operations with estimated around 100 containers going into the water. Operations undertaken to recover them
Zim Charleston	Near Colombo	Aug-22	Vessel experienced fire in cargo hold having left Colombo. Returned to port for firefighting operations. Combination of fire, heat, smoke and water affected an estimated 300 containers
MSR No.1	Off Jeju Island (South Korea)	Sep-22	Lost 72 containers overboard (as reported) during Typhoon Muifa. Vessel continued on otherwise unhindered arriving in Port Kelang two weeks later
Sea Eagle	Iskenderun	Sep-22	Vessel lost stability and capsized during cargo operations. Unknown number of containers fell into water
TSS Pearl	Red Sea	Oct-22	Fire broke out in container stacks just forward of superstructure. Crew abandoned and were rescued by other passing ships. The vessel was left to drift, sinking around a week later, some 300km SE of Port Sudan
Astrid L	Ashdod Anchorage	Dec-22	Lost 9 containers (at least 3x 40') during bad weather whilst at anchorage. Vessel taken into Ashdod where unloading of collapsed stack(s) took place

Such is the concern around containers being lost, the IMO's Sub-Committee on Carriage of Cargoes and Containers recommended in 2022 that, as from 2026, all vessels who lose containers overboard need to make vessels in the vicinity, plus the nearest coastal state and the vessel's flag state, all aware of the nature of the incident as soon as possible. The draft amendments to the SOLAS treaty to make this happen will be put forward for adoption by the International Maritime Organization's Maritime Safety Committee late in 2023.

#### Construction and design

##### Biggest ships

In June 2022, the 24,004 TEU "Ever Alot" became the largest operational containership afloat supplanting its corporate sister-ship, the July 2021 delivered and 23,992 TEU "Ever Ace".

The "Ever Alot" was originally advertised as having a capacity of 23,888 TEU, but China's Hudong Zhonghua Shipbuilding managed to squeeze in a few more boxes to push it beyond the 24,000 limit. In doing so, the ship gazumped the separate MSC and ONE 24,000+ TEU class leads whose deliveries were expected in the not too distant future.

From those succeeding series, it was the 24,188 TEU "OOCL Spain" that entered service first, in February 2023. As a result, it limited "Ever Alot"'s reign as the largest containership to barely eight months. However, the newly crowned successor only managed to hold onto its position for a matter of weeks, if not days, as the following month, it was superseded by the 24,346 TEU "MSC Irina".

##### Delivery of largest ships

What	Capacity	Delivery
MSC Irina	24,346 TEU	Mar-23
OOCL Spain	24,188 TEU	Feb-23
Ever Alot	24,004 TEU	Jun-22
Ever Ace	23,992 TEU	Jul-21
HMM Algeciras	23,964 TEU	Apr-20
MSC Gulsan	23,756 TEU	Jul-19
OOCL Hong Kong	21,400 TEU	May-17
Madrid Maersk	20,600 TEU	Apr-17
MOL Triumph	20,200 TEU	Apr-17
Barzan	19,900 TEU	Apr-15
MSC Oscar	19,200 TEU	Jan-15
CSC Globe	19,000 TEU	Nov-14
Maersk Mc-Kinney Moller	18,270 TEU	Jul-13
CMA CGM Marco Polo	16,000 TEU	Nov-12
Emma Maersk*	15,500 TEU	Sep-06

As at time of delivery; "Emma Maersk" and her sisters have subsequently been upgraded to 16,800 TEU

#### Autonomous shipping - big steps, little steps, lots of steps

"Yara Birkeland"  
Ever since fertiliser producer Yara and technology company Kongsberg announced in 2017 that they would construct a fully electric and autonomous container vessel, this particular project has been the reference point in the conversation. As such, every milestone it has reached draws attention.

The original timeline was for the ship to be operational in the second half of 2018, first as a manned vessel and then, the following year, transferring to remote operations. Fully autonomous mode would have followed in 2020.

Unfortunately, delivery of the "Yara Birkeland" was very much delayed and it was only handed over from the shipyard late in 2020. Thereafter, it underwent a period of testing and trials before its maiden voyage proper in November 2021.

Since then, it has kicked on, with this 80-metre long and 3,100-dwt ship soon entering commercial operations between Yara's production plant in Porsgrunn (Heroya), Norway, and the near-

by port of Brevik, a roundtrip voyage of around 25 kilometres made once a week.

At the moment, the “Yara Birkeland” is operated with a crew of five, but if all goes well, this will be reduced to two, perhaps by 2024, with another two years or so before it goes into fully autonomous mode. At that point, it will be monitored by a remote operations centre located around 80 kilometres away and from where corrective commands can be issued if necessary.

In the meantime, the project is concentrating upon data collection and learning. The ship’s artificial intelligence will undertake navigation making its own adjustments based upon input from radar, situational awareness cameras and infrared cameras, amongst others. It is also equipped with automatic mooring mechanisms.

“Yara Birkeland” alongside



Yet, it is not just the “Yara Birkeland” that booked progress. A number of other initiatives and tests resulted in 2022 being arguably the busiest year to date for autonomous shipping milestones. These are summarised below, and also include examples from outside of container shipping as these still provide relevant experience for the application of the various technologies.

#### “Marit” and “Therese”

Late in 2022, Norwegian produce wholesaler ASKO named its two 67-metre-long, sixteen trailer capacity, fully autonomous and electrically powered barges (after star Norwegian cross-country skiing athletes). They then entered a two-year long trial period that should hopefully see them certified to operate without crew. Initially, they are being operated by a crew of four, although it is possible to run them with as few as two people. The barges will sail across the Oslo fjord providing a maritime link between two of ASKO’s logistics facilities

One of Asko Maritime’s electric and ultimately autonomous barges



#### “Zhi Fei”

In China, the 110 metre long and 300 TEU autonomous vessel “Zhi Fei”, designed by Navigation Brilliance (Brinav) and built by Yangfan, completed trial operations late in 2021. A few months later, it entered commercial operations on behalf of the Shan-

dong Port Group shuttling between Qingdao and the satellite port of Dongjiakou. Depending upon the route, this distance could be around 80 kilometres. Although its later development has paralleled that of the “Yara Birkeland”, progress has been faster as the order for the “Zhi Fei” was only placed at the end of 2019.

Autonomous vessel “Zhi Fei”



#### “Mikage”

Whilst the previous examples cover (very) local journeys, at the start of 2022, a test of autonomous navigation was carried out in Japan by MOL subsidiary Imoto Lines whose 95.5 metre long, 1,900-dwt and 194 TEU vessel “Mikage” sailed from Tsuruga to Sakai, near Osaka, a distance of around 300 kilometres. Built in 2015 as a standard vessel, it was retrofitted with sensors, cameras and satellite navigation systems. For this autonomous test it was monitored remotely via a shoreside control centre.

Although the route had already been prepared, the autonomous navigation system still had to take into account wind, tides, currents and other factors in executing the plan. Its actions were fed by input from sensors, cameras and AIS positions on other vessels. The greatest challenges were posed by the enclosed and relatively busy waters that have to be navigated when entering and leaving port. Mooring was undertaken with the assistance of drones that lifted and dropped the mooring lines quayside.

“Mikage” with its drone assisted mooring



#### “Suzaku”

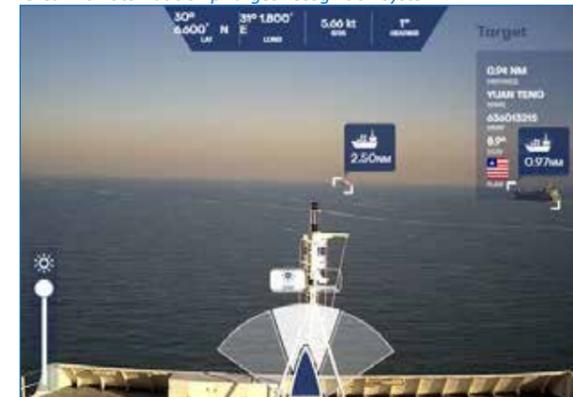
Another test in Japan was carried out shortly after that of the “Mikage”. This involved the 1,800-dwt general cargo vessel “Suzaku”, which, like the “Mikage”, was conventionally constructed and retrofitted for autonomous navigation, a process that took two months. It had been selected by NYK and Japan’s Designing the Future of Full Autonomous Ships (DFFAS) to trial an autonomous, artificial intelligence watchkeeping system developed by Orca AI of Israel

The “Suzaku” completed a forty hour long and near 800 kilometre voyage within the exceptionally busy waters of Tokyo Bay. Receiving input from eighteen onboard cameras able to provide an all-round view, the vessel performed 107 unaided course alterations and avoided up to 500 other vessels on its

outbound trip alone. For its whole trip, it required human intervention for 1-2% of the time.

The system concerned was built upon algorithms powered by artificial intelligence, deep learning and data collected from the ship for around one year. Further human backup was provided by a remote fleet operations centre in Tokyo. As a result of its experiences in this trial and all that led up to it, in April 2023, it was announced that NYK would adopt the Orca AI system across all vessels in its fleet

Orca AI’s Automatic Ship Target Recognition System



Despite the distances involved in the Japanese tests, they are still of the shortsea and coastal variety. Partly this will be because the concepts are still being tested and proved. For the “Yara Birkeland” and “Zhi Fei”, who are evolving towards fully autonomous modes, the lack of a regulatory regime, or rather the limited extent of the current regulations, mean that only in their respective jurisdictions can they eventually trade without crew, be that remotely and/or autonomously.

The challenges for autonomous deepsea shipping run much further than the lack of regulation though. There are also issues regarding the wear and tear involved in operating a ship. A failure at a local level can perhaps be resolved quickly, but in the middle of a great ocean, especially when only other remotely controlled or autonomous ships are around... what then?

#### “Mayflower”

Although no solution was provided to the conundrum posed above, the 16 metre long and five ton demonstration/concept trimaran “Mayflower” did highlight the real world impacts of mechanical limitations. Despite its small size, in mid-2022, the “Mayflower” became the largest uncrewed vessel to cross the Atlantic Ocean.

Although the artificial intelligence that was used to navigate the craft did suffer what were described as “intermittent” and “low-level” failures, these did not result in anything terminal. However, mechanical breakdown not related to the AI/autonomous element did require an unplanned two-week stop in the Azores.

Further mechanical problems led to the “Mayflower” prematurely finishing its Transatlantic crossing in Halifax, Canada, instead of Washington DC as originally envisaged (it eventually made its way to Plymouth, Massachusetts). Including the repair stop, the whole voyage from Plymouth (UK) to Halifax, a distance of around 5,600 kilometres, took forty days.

The “Mayflower” was fitted with over thirty sensors, six AI cameras and fifteen edge devices, all providing input to the AI “Captain” which made navigation choices, such as avoiding hazards, whilst keeping to maritime law. All the while, aided by the over

one million images it had taken, the AI was learning and considered alternative options before making a choice.

Cross section of the “Mayflower” trimaran



#### “Prism Courage” (LNG carrier)

Much more substantial, in size and scale at the least (and, admittedly not involving liner shipping), was the voyage undertaken in 2022 by the 299 metre long and 97,500-dwt LNG carrier “Prism Courage” from Freeport, Texas, to Boryeong in South Korea. Over half of this 20,000 kilometre voyage was undertaken using autonomous navigation. According to the system’s developers, Avikus (HD Hyundai), it recognised weather, wave conditions and other ships, making adjustments to avoid around 100 potential collisions and increasing fuel efficiency by around seven percent. The whole trip took thirty-three days.

#### More to come

The autonomous/artificially intelligent navigation concept is gaining momentum as evidenced by all the above. Another development, following a similar path as the “Yara Birkeland” and the “Marit” and “Therese” was announced in mid-2022 by logistics company DB Schenker. In partnership with Norwegian furniture retailer Ekornes, vessel designer Naval Dynamics and engineering companies Kongsberg and Massterly (also involved in the other Norwegian projects), it is to develop a 50 metre long, 300-dwt and approximately 25 TEU autonomous and electrically-powered coastal vessel. It will ultimately be deployed between Ekornes’ home port of Ikorndnes and the larger port of Alesund, a voyage of around 43 kilometres.

Naval Dynamics AutoBarge 250 to be used for DB Schenker



#### The autonomous ship discussion

Whilst all the above is encouraging, if not exciting, there is still a lot that has to be settled regarding autonomous ships and the application of artificial intelligence. It seems, for the moment at least, that fully autonomous vessels are best suited to short, regular and fixed routes. Undoubtedly though, as operational experience grows, this for both the human and artificial side of the equation, there is the possibility for the deployment of autonomous ships to be expanded to something more complex than what it is already achieving.

At the spreadsheet level, autonomous ships are attractive to owners and operators due to the distinct lack of crew, thereby

reducing costs. Although fully autonomous ships will still need to be monitored from a shoreside control centre, it will be possible for a team to cover multiple vessels. In that regard, these shoreside monitoring centres also provide a multiplier effect.

A further extrapolation is that without a crew, the accommodation and facilities needed for them will also be redundant, which could lead to an increase in cargo carrying capacity relative to the size of ship. Other savings will come from the software rather than the steel, with artificial intelligence (AI) able to provide optimal route choice and predictive maintenance, for example.

At the operational coalface level, (semi-)autonomous ships could also be beneficial to safety, with its enabling AI replacing the human element in repetitive and/or dangerous tasks. However, the regulation of the autonomous concept and its related artificial intelligence is still way behind even these steps.

How regulations surrounding these ships and systems is drawn up and finalised will, ultimately, have the greatest say in how they are deployed.

At the moment, the best guess is -and this is all it can be at this stage- if autonomous ships enter deepsea shipping there will probably still be a requirement for some form of human presence to provide engineering backup in case of not only mechanical but also system failure. For all the successes, the experience of the “Mayflower”’s Transatlantic voyage shows both are still pertinent concerns, and although the “Suzaku” may have only needed human intervention for around 1-2% of the time, this still approximated to 8-16 kilometres of its voyage or 36-72 seconds for every hour sailed. A lot can still happen in such a time or distance.

Human backup for mechanical or system failures could be the buffer that fully autonomous and even remotely monitored ships (and related artificial intelligence systems) hit. It will not be the end for the concept and the technology. More likely, we will end up with autonomous or remotely capable ships, and the AI systems that enable them will become another too for the -admittedly reduced- crew to carry out their functions more safely -it is to be hoped- and efficiently.

### Shipyards

At the start of 2022, the European Commission (EC) blocked the deal whereby troubled Daewoo Shipbuilding and Marine Engineering (DSME) and compatriot Korea Shipbuilding and Offshore Engineering (KSOE) would have merged. An alternative solution was found later in the year in the shape of the Hanwha Group, also of South Korea. It agreed to take effective control of DSME, this being formalised at the end of the year via an indirect 49.3% stake. The deal was approved by various regulators, and a few months later, DSME was renamed to Hanwha Ocean.

Approval was received probably because Hanwha is principally involved in the defence sector across a range of platforms. The EC’s principal objection to the DSME/KSOE coming together was the feared dominance the combined entity would enjoy in the LNG sector. In 2021, the separate companies combined to attract sixty percent of orders for such vessels. The EC wanted one of the yards to sell these activities before they could merge.

Also occurring in 2022, KH Investment group (KHI) acquired 95% of South Korea’s Daehan Shipbuilding. Although it is principally active in the dry and wet bulk sectors, Daehan did have one 700 TEU multipurpose, two 1,000 TEU and four 7,200 TEU containerhips on its orderbook. For KHI, the deal added to its existing K Shipbuilding unit, the former STX Offshore & Shipbuilding, which it acquired in 2021.

## ENERGY AND PROPULSION

### Now pushed (or pulled) by shippers?

The discussion around adopting alternatives to the conventional heavy fuel oil have long since been decided, principally by separate International Maritime Organization (IMO) regulations or commitments. These are aimed at reducing harmful sulphur emissions on the one side and carbon dioxide emissions on the other. These actions by the IMO, some might say, will also have come with reference to what other commercial sectors and a good chunk of the world were already doing, if not demanding.

Further encouragement to action is now coming from shippers and consignees. The increasing environmental and sustainability awareness of end consumers has, in turn, led cargo interests to promote their sustainable ideals and credentials to these people, their customers. As an extension, pressure now flows from the shippers into the logistics field and ultimately the container shipping market, the closest of all maritime sectors to the end consumer.

One example of this pressure is the establishment by shippers of Cargo Owners for Zero Emissions (coZEV) whose members have, as an ambition, to source their ocean freight requirements via zero-carbon fuel options by 2040. Launched in October 2021 by nine major shippers, including the likes of Amazon, IKEA, Michelin and Unilever, around a year later it added another ten members. These included similarly global names as Dupont, Electrolux and Philips. All told, coZEV is now a very influential group, and any container shipping line not listening to what these shippers want, would automatically exclude itself out of the running for substantial volumes of cargo.

### Choices, choices, choices

The choice for containership operators has, for some years now, been to decide which approach to adopt in mitigating harmful emissions. Essentially, there have only been three realistic options, and the third of those has itself been limited, up to now, to one alternative. In summary, the three broad approaches have been:

- Burn marine fuel that complies with the emissions regulations be it higher-grade yet conventional fuel oil or specially developed (very) low sulphur fuel oil
- Continue to burn conventional high sulphur fuel but use exhaust scrubbers
- Move to a new non-oil based but still compliant fuel type (LNG has been the only real choice)

Each option had its pros and cons, proponents and opponents, yet as time has gone on, a number of others have started to present themselves as more favoured or are being worked upon to that end. This is particularly so for anything that reduces or avoids the need to burn conventional or even low-sulphur conventional fuel types.

The standard bearer for the alternative marine fuels was LNG. However, it does have its drawbacks -as does any option truth be told- and could, in certain circumstances, be more harmful than conventional fuel.

Maybe because of this, or maybe because different options offer different advantages for different trading profiles, multiple carriers have started looking at a wider range of possibilities, rather than just settling on one. Some of those alternatives have gained more than just one champion.

Below is a summary of developments surrounding various options, all of which are at different stages of their evolution and

adoption as far as shipping is concerned. It is by no means sure that all of them will be adopted -the realities of economics will dictate that- but it is reasonable to suggest that one size (or alternative) will not fit all.

### Scrubbers

At the end of 2022, according to an analysis carried out by Alphaliner, those carriers with the largest scrubber-fitted fleets operated 778 so-equipped ships able to lift 7.98 million TEU. The figures worked out at twenty-three percent of their total number of ships and thirty-five percent of capacity.

MSC headed the ranking by number of ships (218) and TEU capacity (2.1 million TEU) but was already moving to alternative fuel options. Proportionally, Evergreen had the biggest scrubber-fitted fleet with 150 ships (72% of its whole fleet) and 1.3 million TEU (80%). HMM was not too far behind (65% and 83% respectively). The scrubber uptakes of Maersk and CMA CGM were relatively low as they had been focussing on using alternative fuels.

### Ten largest scrubber-fitted fleets, December 2022

Carrier	Ships (#)			Capacity (TEU)		
	Share	Scrubber	Total	Share	Scrubber	Total
MSC	30%	218	717	46%	2,132,700	4,609,900
Evergreen	72%	150	209	80%	1,322,600	1,663,200
Maersk	18%	129	705	36%	1,540,400	4,235,400
CMA CGM	12%	73	599	24%	805,800	3,399,700
HMM	65%	49	75	83%	676,300	816,400
Cosco Shipping	8%	38	465	12%	336,900	2,866,800
Hapag-Lloyd	14%	36	249	23%	421,600	1,796,200
Yang Ming	34%	32	93	17%	296,600	1,796,200
ONE	14%	28	204	24%	364,800	1,528,900
KMTC	38%	25	65	58%	86,500	148,500

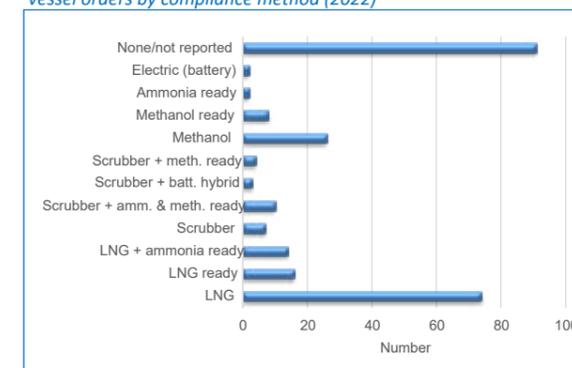
TEU, analysis based on data from Alphaliner

Despite the impressive figures, as an option, scrubbers were arguably already on the wane come 2022. This came, principally, from concerns about the open-loop scrubber system. Here, seawater is brought in, used as the scrubbing element, and passed out back into the sea. Even for the closed loop, which is more expensive and uses treated seawater that stays within the circuit, the wash water still needs to be disposed of somewhere and somehow.

Given the concerns surrounding scrubbers, a significant number of ports and/or jurisdictions have banned the operation of open loop scrubbers within their waters. Paralleling this, ship-owners have started looking at other options, these efforts being focussed on the alternative fuels aspect.

This is not to say that scrubbers, as a concept, are dead. Rather, they are diminished in their popularity. More recent ordering of scrubber installed newbuilds (those made public at any rate), have been notable for their rarity. In 2021, for example, Evergreen ordered two 24,000 TEU ships and MSC seven of 16,000 TEU. In 2022, Evergreen followed up with an order for another three ships of 24,000 TEU, Danaos four of 7,200 TEU, CU Lines two of 7,000 TEU and Lash Ship of Finland three of 1,200 TEU (and Wan Hai bought 4x 3,000 TEU already under construction). All told, based upon data sourced from Clarksons, just twenty-four scrubber-fitted containerhips were ordered in 2022, seventeen of those to also be ammonia and/or methanol ready or electric hybrid propulsion.

### Vessel orders by compliance method (2022)



Based upon data sourced from Clarksons, where none requires burning of compliant fuel oil

### LNG

The application of LNG as an alternative fuel has come under almost as much scrutiny as that for scrubbers. An earlier study (pre-2022) commissioned by Sea-LNG and the Society for Gas as a Marine Fuel concluded that the use of LNG as a maritime fuel could result in up to twenty-three percent savings in the emission of CO<sub>2</sub>, depending upon the engine configuration, alongside which went air quality benefits.

However, a World Bank report from 2021 saw only a limited role for LNG in the decarbonisation battle and that the combination of widespread and long-term use ran counter to the aims of reducing greenhouse gas emissions by half as of 2050. In some ways, this report reinforced the belief of many, including in shipping, that LNG was a bridging technology between high and low emissions.

Another hypothesis coming from the World Bank was of LNG demand actively reducing from the start of the 2030s. This would put at risk all the investment in LNG as an alternative fuel. The very first LNG containership only entered service in 2015. Yet with ships having a normal useful lifespan of twenty to twenty-five years, the not unreasonable question to ask from out of this was how owners and operators would feel with having assets that are obsolescent and, at their oldest, barely fifteen years but more likely considerably younger?

A newer report issued in 2022 by University College London Energy Institute (UCL EI) actually attempted to quantify the investment risk in LNG being only a bridging technology. When looking across all shipping sectors, a full write-down could be as much as USD 850 billion. If the LNG/dual-fuel fleet were retrofitted to burn hydrogen, ammonia or methanol, then the risk could be reduced to USD 113-185 billion. Either way, that is an awful lot of investment to be written off.

Understandably, industry group SeaLNG strenuously contested the hypotheses and findings pointing out, correctly, that the LNG vessels are dual-fuelled and can and do burn conventional low sulphur bunkers. In fact, many were forced to do so in the course of 2022 due to the extremely high prices of LNG resulting from the Ukraine/Russia crisis.

At around the same time as the UCL EI report, LNG’s sustainability credentials came under further scrutiny by another critical report, issued this time by the International Council on Clean Transportation. Focussing on ships trading with the European Union, if the use of LNG continued rising, even if the supply of it was 100% renewable in 2030, then greenhouse gas emissions could still increase when compared with 2019. This could be because of what is known as methane slip and the related strong near-term carbon effects of that gas.

For all the discussion, and to a degree, much of it was still hypothesising, the uptake of LNG in 2022 and beyond was still firmly on the up.

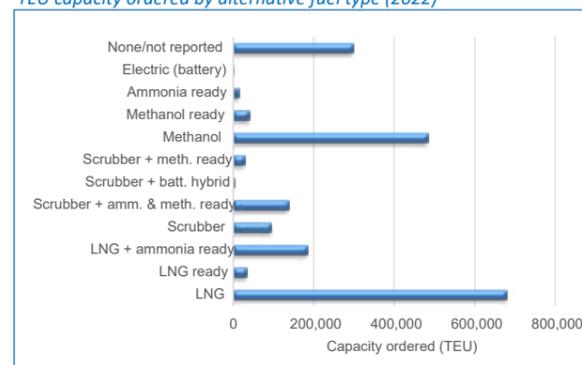
Having made a definitive switch to LNG in 2021, MSC received its very first LNG/dual-fuel vessel early in 2022. This was the 14,300 TEU chartered-in newbuild “MSC Washington”. MSC also continued ordering of LNG/dual fuel ships, including through non-operating owners, with its name being associated with orders for twelve of 16,000 TEU and four of 23,000 TEU.

CMA CGM placed substantial orders in 2022 (6x 7,900 TEU; 4x 23,100 TEU). It also announced plans to participate together with Engie to develop a facility in Le Havre able to produce 11,000 tons of methane from dry biomass which could be used to fuel its LNG/dual-fuel ships.

Other developments included non-operating owner Eastern Pacific placing an order for 4x 1,400 TEU that will be chartered-out to Crowley of the United States. In early 2023, ZIM received not only its largest ever containership but also its first LNG fuelled ship. This was the “Zim Samy Ofer”, a 15,000 TEU chartered-in newbuild, the first of a series of ten. In 2022, ZIM had concluded a ten-year long contract of at least USD 1 billion for Shell to supply LNG to these newbuilds, with the first bunkering operation taking place early in 2023.

Unsurprisingly given this activity, LNG fuelled ships topped the capacity chart for orders placed in 2022, despite not being the most popular option by number of vessels.

TEU capacity ordered by alternative fuel type (2022)



Based upon data sourced from Clarksons

The owners, operators, suppliers and others along the supply chain are not oblivious to the issues surrounding LNG as a fuel and have undertaken various measures to hopefully work towards mitigating these at the very least. One is the Methane Abatement in Maritime initiative. This was established by Lloyds Register together with seven partners, including MSC, Seaspan and Shell. It will gather data on the extent of methane slip to gain a better understanding of the scale of the issue. The hope is that this will then help with investment decisions, particularly surrounding whether liquified bio or synthetic LNG are other workable options. Membership was doubled early in 2023 with MOL among that particular tranche.

Elsewhere, the oil majors are also putting efforts into reducing methane slip upstream – it is also a supply-chain, not just consumption issue – with a target to remove such emissions by 2030, with engine manufacturers also working on the problem.

#### BFO - Biofuel Oils

Biofuels are making slow progress as an alternative fuel. Hapag-Lloyd, Maersk, CMA CGM, MSC and Unifeeder all trialled these prior to 2022. PIL, ONE, CoscoSL and its affiliated OOCL followed with their own trials in 2022.

Agreements to switch to a wider application of biofuels had been few and far between. One was reached in 2021 between intra-North Europe carrier Samskip and supplier GoodShipping to use biofuels to power, initially, an 800 TEU vessel. It was a singular example that year. In contrast, 2022 saw a number of announcements with shippers and other cargo interests prominent.

- MSC announced it had adopted sustainable biofuel
- A 1,000 TEU vessel operated by Unifeeder was bunkered solely with 400 tons of biofuel
- Kuehne + Nagel announced it had secured sufficient biofuel supplies to ship 40,000 TEU of cargo
- Bollore Logistics signed an agreement with Hapag-Lloyd to ship the equivalent of at least 100 TEU per week by using biofuel
- Hapag-Lloyd and DHL Forwarding signed an agreement which, in the initial stages, will see the German carrier use advanced biofuels to ship 18,000 TEU of cargoes for its compatriot logistics company
- Electrolux announced that it would ship 80,000 TEU of its oceanfreight, around one quarter of its annual requirements, on vessels powered by alternative fuels following agreements reached with Maersk (biofuel) and CMA CGM (biomethane and LNG)

#### Ammonia

As with all fuel types, traditional or alternative, there are upsides and downsides. The big environmental positive with ammonia (NH3) is that burning it does not produce carbon dioxide (CO2). Cost wise, the capital expenditure required for ammonia fuelled ships is much less than for LNG ones, the fuel itself is cheaper than methanol and hydrogen, and it has a lower flammability than other fuels.

On the downside, ammonia is very toxic and has a low energy density, this latter meaning that it would need a tank four times the size of one that stores traditional heavy fuel oil. Further, a lot of energy is required to produce ammonia, which also produces carbon dioxide if not done in a renewable way. There is also a great unknown: there is yet to be a marine engine running on ammonia, so there is a lot to learn from its emissions and whether further treatment is required.

Considering all this, developments surrounding this alternative are limited to “ammonia ready” ships, i.e. newbuilds that could be retrofitted to burn ammonia at a later date. How far away is such a ship? Well, in 2022, “K” Line received an Approval-in-Principle for the design of a 200,000-dwt dry bulk ship that would be ammonia fuelled, so maybe not too far away.

#### Methanol

This option has a number of advantages such as being easy to handle with no operational safety implications. It is also readily available and can be supported by the existing (fuel) supply infrastructure as bunker storage facilities and delivery systems can be converted to it. Shipping is already experienced in handling it and conversion costs for ships are much lower than with other options. And although methanol requires larger tanks than those currently used for conventional fuel oils or their derivatives, it does not emit methane like LNG and conventional fuels.

Despite the infrastructural advantages, methanol will still face start-up and scalability challenges, in particular from obtaining sufficient supplies and, most importantly, in a sustainable way. The use of methanol alone does not make the project sustainable or carbon free. Currently, it is produced on an industrial scale from natural gas by reforming it with steam and then con-

verting and distilling the resulting synthesised gas mixture to create pure methanol.

Conventional “fossil” methanol is actually more harmful on a so-called “well-to-wake” basis than conventional fuel oil, according to oil major Shell. Thus, in order to be truly sustainable, a synthetic or renewable methanol will be needed. This requires substantial amounts of renewable energy and involves mixing with carbon dioxide, which itself needs to be sourced renewably.

In terms of adopting of methanol as a marine fuel, Maersk has been at the forefront. Its order late in 2022 for another six methanol/dual-fuel ships brought its orderbook for this type to nineteen ships with a combined capacity of 296,000 TEU. The first example, the 2,100 TEU “Laura Maersk”, was floated out at the dockyard early in 2023. Building upon agreements signed in 2021, in 2022 it concluded others with companies as CIMC Enric, Debo Energy, European Energy, Green Technology Bank, Orsted, Proman and Wastefuel to be able to source at least 730,000 tons of sustainable methanol each year as from 2026.

Interestingly, the initial deepsea champion of LNG as an alternative fuel, CMA CGM, started down the path to adopting methanol fuel as well. In mid-2022, it placed an order for six ships of 15,000 TEU and with further orders made into the first quarter of 2023, it had grown its orderbook for such vessels to twenty-four units able to carry 342,000 TEU, thereby superseding Maersk’s orderbook.

Other orders placed over 2022 and into early 2023 for methanol/dual fuel ships included:

- MPC Containerships, 2x 1,300 TEU (for employment by North Sea Container Line)
- HMM, 10x 9,000 TEU
- Celsius Shipping 4x 3,000 TEU

Alongside were a number of methanol ready units, these coming from Asiatic Lloyd (2x 7,100 TEU), Danaos (2x 7,100 TEU) and Celsius Shipping (2x 3,000 TEU), for example. Early in 2023, methanol units on order numbered sixty-eight ships with a total capacity of 930,000 TEU, around twelve percent of the on order fleet. In terms of 2022’s ordering activity, methanol had actually overtaken LNG to be the third most popular choice by vessel numbers and second for TEU capacity (based upon data sourced from Clarksons).

Thus far though, there has been very little operational experience. Some was provided in 2022 when the MOL-owned “Cajun Sun”, a 50,000-dwt chemical/product tanker, completed a Transatlantic crossing. It was claimed to be the very first net zero voyage completed with bio-methanol produced from renewable natural gas.

#### Flexi options

In 2022, there also emerged a number of flexible options involving more than one alternative. There were fourteen ships ordered as LNG/dual fuel and ammonia ready. There were four ordered as scrubber-fitted and methanol ready and ten that were even ammonia ready on top of that combination.

The principle extended into the first quarter of 2023. MSC placed an order for ten dual-fuel/LNG + methanol ready ships (11,500 TEU). PIL ordered four LNG + ammonia ready (8,000 TEU) whilst ONE contracted ten methanol fuelled ships that would also be ammonia ready (13,700 TEU).

#### Ready or not?

The term “ready”, which is used in relation to some newbuilds in that they are “methanol-” or “ammonia-” ready, is a classic case of easier said than done. “Ready” in these contexts means that the design has taken into account the possibility of the ship being converted to run on a different fuel at a later date, however that may be achieved. Such a procedure can involve high costs in both money and time, this latter impacting the revenue generating ability of the ship concerned whilst it is in the shipyard.

In 2014, UASC named the first of what were seventeen so-called “LNG ready” vessels of either 15,000 TEU or 20,000 TEU. The first of those ships, the 15,000 TEU “Sajir”, effectively started its conversion process in September 2020 (in the meantime, UASC had been absorbed by Hapag-Lloyd). It only returned to service in April the following year, the process taking twice as long as expected (hoped). The other expectation was that the process would cost in the region of USD 25-30 million, however, because of the time and costs involved, Hapag-Lloyd decided against any further retrofits.

#### Hydrogen

Although the efficacy of hydrogen as a marine fuel option has been questioned by companies as Compagnie Maritime Belge (CMB) and Finnish engine manufacturer Wärtsilä in the past, as the first quarter of 2023 was closing, intra-North Europe operator Samskip displayed confidence with an order for two hydrogen fuelled vessels. Able to carry 365x 45’containers, alongside the hydrogen fuel cells there will also be a diesel generator for longer voyages. To be constructed by Cochin Shipyard of India, deliveries are expected in 2025 whereupon they will initially operate between Rotterdam and Oslo.

Samskip’s hydrogen-powered design



One of the disadvantages of hydrogen powered vessels is the amount of space needed to store the fuel. In general, this makes the form not particularly viable for long-distance voyages and why, perhaps, the only taker so far is the regional carrier Samskip.

#### Electric power (batteries)

After its maiden voyage in 2021, the following year, the electrically powered zero emissions “Yara Birkeland” entered commercial operations in Norway along its roundtrip route of around 25 kilometres. Initially running with a small crew, it is hoped that within two years or so it will operate fully autonomously. Staying in Norway, in 2022, grocery distributor ASKO received and named its two electrically powered and self-propelled roll-on/roll-off barges. Alike the “Yara Birkeland”, they too will be employed on a local fjord route, initially with a crew but also working up to be fully autonomous.

Norway certainly seems to be the centre for these electrically-powered autonomous units, for in 2022, a partnership of DB Schenker, Norwegian furniture retailer Ekornes, Naval Dynamics, Kongsberg and Massterly announced a project to develop a 50 metre long, 300-dwt and approximately 25 TEU electrically-powered autonomous coastal vessel. It will be deployed on a

local roundtrip voyage of around 85 kilometres. (See the “Ships: Construction and Design” chapter for further on these).

One other development saw the order, by Cosco Shipping Development, of a pair of 700 TEU electrically powered vessels. They will not be autonomous units and they will be deployed by the affiliated Shanghai Pan Asia for the river trade between Wuhan and Shanghai, a straight line distance of around 720 kilometres.

Cosco's electric feeder ship design



At the moment, it is clear that these initial steps are being taken in somewhat becalmed local riverine or similar waters. Yet, according to a study carried out by the University of California at Berkeley and the US Department of Energy, the application of battery-power (electric-power) to much larger oceangoing container ships could be a feasible proposition for as much as forty percent of the current fleet.

When looking purely at the economics and financial costs, and considering only current technology, a battery-electric ship of 8,000 TEU could be more economical than one running on heavy fuel oil for voyages up to 1,000 kilometres. When taking into account the wider societal impacts (particularly health) associated with reduced emissions coming from the conventionally-fuelled vessels, the latter increases to 5,000 kilometres, for all ship sizes.

However, whilst the above is optimistic, a different study carried out by the University of Valladolid in Spain pointed to a more fundamental problem for electric power. With the global drive to electrification, freight vehicles and vessels of whatever type will also be competing with passenger vehicles right down to the individual car and electric bicycles. As a result, it was likely that some of the metals needed for all these electric engines, such as cobalt, copper, manganese and nickel, could actually run out by 2050. If it becomes clear that this will come about, choices will have to be made as to which conveyances should be electrically powered and which will still have to burn something, be these fossil fuels or alternatives of whatever type.

### Complications and consequences

A major and reasonable concern is the variety of supply chains needed to produce all these alternatives, especially if these have to be carbon neutral and/or emissions free. None other than shipping economics guru Martin Stopford posited that the electricity generating capacity of thirty-six wind turbines would be needed to produce sufficient methanol for a single mega sized container ship running between Europe and the Far East. Indeed, it was suggested in 2021 that in order to produce the 360,000 tonnes of sustainable methanol Maersk required to meet its then projected needs, it would use more renewable

energy than was generated at the time by the country of Denmark in one year.

A report issued in 2022 by the International Chamber of Shipping suggested that shipping would need electricity from renewable sources that was equivalent to the then contemporary global capacity, around 3,000 TWh. In another example, the power required to produce sufficient sustainable ammonia to move a single 20,000 TEU containership would be the equivalent of that needed to supply a town of 139,000 households for one year.

The projected electricity expenditures are enormous and come at a time when a number of national grids are already under strain from ambient demand, let alone extras placed by data-centres or other developments as blockchain and crypto-currencies.

These are circles that still need to be squared away. It is therefore unlikely that conventional marine fuels, even the low-sulphur variety, will be completely removed from the equation for a while. Shell foresees there still being a demand for these, admittedly declining, into the 2040s.

As such, another alternative is also being looked at in the drive towards decarbonisation and sustainability, and one that harnesses the natural weather phenomenon of wind.

### Wind power and assistance

There were also developments in 2022 and early 2023 around the adoption of sail systems to either power or assist in propelling ships. Although most concerned concepts and designs, there were what appeared to be concrete steps towards construction.

#### Econowind - VentoFoil and Containerised Econowind

Definitely in the realm of wind-power assistance rather than prime mover, Netherlands-based Econowind has designed and manufactured small sail systems that can be (retro)fitted to vessels. In mid-2022, it retrofitted its VentoFoil product to the 3,600-dwt general cargo vessel “Ankje” part of Vertom’s fleet. This was actually an extension, literally, of an earlier trial that took place on the same vessel in 2021 with two sails of 10 metres. These were removed at the end of 2021 and replaced around six months later with two of 13m.

General cargo vessel “Ankje” with VentoFoil being retrofitted



Then, in April 2023, it was announced that Ocean Network Express was to trial two of Econowind’s containerised sail units. These would be fitted to a 1,000 TEU containership by the end of the year.

Impression of Econowind’s containerised system



#### Neoline Armateur - “Neoliner”

First announced back in 2018 as a project involving Renault and its compatriot Neoline, the initial plan was to design and construct two wind-powered Ro/Ro ships to carry cars by 2020. Whilst the project timeline clearly slipped, early in 2023, Neoline announced that equity financing of more than USD 65 million, had been received from sources that included CMA CGM and Corsica Ferries. Additional financing was also provided by various financial, regional and investment institutions.

The financing will go towards the first ship, “Neoliner”. Although the design has changed slightly, it will still be a 1,200 lane metre, 320 car/265 TEU capacity Ro/Ro vessel. It will feature a 76 metre tall and 3,000 square metre Solidsails unit that can be retracted and is fitted to folding masts. Alongside, it was announced that the vessel was to be constructed by RMK Marine of Turkey.

Artist’s impression of “Neoliner” wind-powered cargo vessel



#### Zéphyr & Borée, “Project Meltem”

In 2021, Zéphyr & Borée introduced its “Project Meltem”, an 1,830 TEU vessel that is 185 metres long and equipped with eight wingsails, with an eye to the Transatlantic trade. However, in mid-2023, it placed an order for five hybrid methanol-fuelled and wind-powered vessels of 1,200 TEU from Hyundai Mipo of South Korea. Their reported price of USD 62.2 million each was around twice that of standard designed. Deliveries are expected from late 2025 and into 2026.

Zéphyr & Borée, “Project Meltem”



## SHIPOWNERS

### Ship finance

According to Greece’s Petrofin, at the end of 2021 (start of 2022), the global ship finance sector had an estimated exposure of USD 308.8 billion, this coming from more than sixty companies. Of that, the forty largest lenders had an exposure of USD 290.1 billion. This represented a one percent increase over the figure of one year previously.

The ten largest ship financiers accounted for forty-eight percent of the top 40 sub-total, down by one percentage point. The composition of the top ten remained the same, although there were underlying movements with Credit Agricole and Sumi Trust swapping fifth and sixth places. HSBC gained two spots to eighth, thereby pushing Sumitomi-Mitsui and Credit Suisse down one spot each, even though their ship financing exposures were unchanged.

European financiers managed to retain their leading position within the top ten although their share of the top forty exposure dropped back slightly to twenty-nine percent. Chinese financiers within the top ten maintained an eleven percent share whilst Japanese financiers held on to their eight percent share. However, at the individual company level, the gap between number one, BNP Paribas, and two, China Exim, narrowed to just USD 1.0 billion. One year earlier it had been USD 4.0 billion.

Petrofin Top 40 Shipping Banks

Bank	end-2021	end-2020	end-2019
BNP Paribas	19.5	21.5	18.0
China Exim	18.5	17.5	16.5
KfW	17.2	16.2	16.7
Bank of China	14.5	15.0	15.0
Credit Agricole CIB	13.5	13.5	13.5
Sumi Trust	13.0	13.6	13.5
ING	12.5	13.5	13.5
HSBC	11.0	10.0	11.0
Sumitomi-Mitsui	10.5	10.5	9.5
Credit Suisse	10.0	10.0	12.0
Others (numbers 11-40)	160.0	155.6	167.3
<b>Total, Top 40</b>	<b>290.1</b>	<b>286.9</b>	<b>294.4</b>
Share Top 10, of which	48%	49%	47%
- Europe	29%	30%	29%
- China	11%	11%	11%
- Japan	8%	8%	8%

Source: Petrofin. Figures in USD billion and are as at end of the previous year. Includes estimates

The start of 2023 saw some hiccups in the wider banking world with Credit Suisse (around USD 1.5 trillion in managed assets, and number ten on the list) needing to be rescued by compatriot and competitor UBS. In the United States, a number of so-called regional banks -still substantial institutions in their own rights, despite their “regional” sobriquets- came under pres-

sure with some having their assets seized by regulators (First Republic) or collapsing altogether (Silicon Valley Bank). Despite these events, the ship financing sector was still generally confident that if these incidents developed into a contagion, it would (should) be relatively unaffected.

### Corporate developments

Buxriver of Germany bought out its partners in the NSB Group. These were Conti NSB, Gebab and Norddeutsche Reederei. At the time of the deal, early in 2022, the NSB Group owned a fleet of twenty-five vessels ranging from 2,500 TEU to 8,200 TEU.

Late in 2022, Poseidon Acquisition Corporation, a joint venture involving container carrier Ocean Network Express, Fairfax Financial Holdings and affiliates of the Washington family and Mr. David Sokol, reached agreement to purchase all the outstanding shares of publicly-listed Atlas Corporation. This company is the owner of major containership owner, Seaspan. Combined, Fairfax Financial, the Washington family and Mr. Sokol already held around sixty-eight percent of Atlas, with Mr. Sokol also the company's Chair. The near USD 11 billion acquisition took place in the first quarter of 2023 with Atlas subsequently delisted from the New York Stock Exchange.

Atlas was only established in 2020. It functioned as a new holding company for Seaspan, which had itself delisted after Canada-based insurance group Fairfax converted warrants and notes into shares. Alongside Seaspan in this new setup was APR Energy Limited, another of Fairfax's investments.

Whilst not delisting, Tufton Oceanic moved out of containership owning in the course of 2022 with agreement to sell its final ship, a 2,500 TEU unit, coming late that year. The sale actually took place early in 2023 when the ship's current charter came to an end. Over the space of around thirteen months, Tufton had sold six container ships. At one point, this multi-sector shipowner controlled nine containerships able to carry around 27,000 TEU.

### Listed owners' fleets, end-2022/early-2023

Non-operating Owner	Country	Vessels	TEU	Average
Capital Product Partners*	Greece	14	106,000	7,600
Cosco Shg Dev	China	76	508,000	6,200
Costamare	Greece	76	524,000	7,400
CSSC Shipping*	China	17	143,000	8,400
Danaos	Greece	68	421,000	6,200
Ernst Russ	Germany	29	49,100	1,700
Euroseas/Euromar	Greece	18	56,100	3,100
Global Ship Lease	United Kingdom	65	342,000	5,300
MPC Container Ships	Norway	61	132,000	2,200
Navios Containers	Monaco	35	167,000	4,800
Ocean Yield*/**	Norway	11	81,200	7,400
Seaspan Corporation***	Hong Kong	132	1,230,000	9,300
SFL Corporation*	Bermuda	36	324,000	9,000
<b>Total</b>		<b>640</b>	<b>4,083,000</b>	<b>6,400</b>
Global container fleet end-2022		6,515	26,375,000	4,000
Share of global fleet: end-2022		10%	15%	-

Source: Non-operating owners annual reports or announcements. Notes: Nationality based upon location of Head Office or Principal Executive Office (as per filings) or equivalent. Fleets are year-end where possible, if not early the following year. Asterisked\* are principally involved in other shipping sectors. \*\* some vessel capacities adjusted for ownership share.\*\*\*Part of Atlas Corporation

## CONTAINERS

### Global equipment fleet

In 2022, the global container box fleet is estimated to have expanded by a marginal one percent to 50.9 million TEU. This followed the remarkable seventeen percent expansion of 2021.

Based upon global shipping capacity as at the end of 2022, the ratio of container boxes (TEU) to slots (also TEU) dropped slightly 1.93. In other words, if a carrier operated 1,000 container

vessel slots, it would be expected to operate a container fleet of 1,930 TEU. This is a rate not seen since 2014, and although only a small difference, suggests that the market is returning to the situation it was prior to 2022.

For much of 2021, the constitutionally imbalanced nature of container shipping, plus the ambient congestion along the length of the supply chain, meant there was insufficient container inventory where it was needed. Essentially, containers were stuck at the imbalanced end of the trade.

As the market normalised in the course of 2022, container availability improved, clearly assisted by the orders for new equipment made the previous year. As these were delivered in both 2021 and 2022, subsequent orders (and deliveries) slowed down, hence the small increase in the global box fleet for that latter year.

### Boxes and slots

	'22/'21	2022	2021	2020
Containership capacity	4%	26,375	25,345	24,236
Total container box fleet	2%	50,885	49,888	44,162
Global Box/Slot ratio	-0.04pts	1.93	2.00	1.82

Situations as at year-ends. Figures in TEU x 1,000 except ratio. Analysis based upon data sourced from WorldCargo News/Drewry Maritime Research and Alphaliner.

When looking at the year-end box fleet and estimated global container carryings, these suggest that on average, containers undertook 3.46 paying trips in 2022. This was an eleven percent reduction compared with 2021's already low 3.87 and is a reflection of the still growing container box fleet set against the decline of containerised cargo volumes.

### Boxes and carryings

	'22/'21	2022	2021	2020
Global container trade	-4%	175,100	183,300	173,100
Ave. container box fleet	7%	50,670	47,309	43,440
Movements per box	-11%	3.46	3.87	3.98

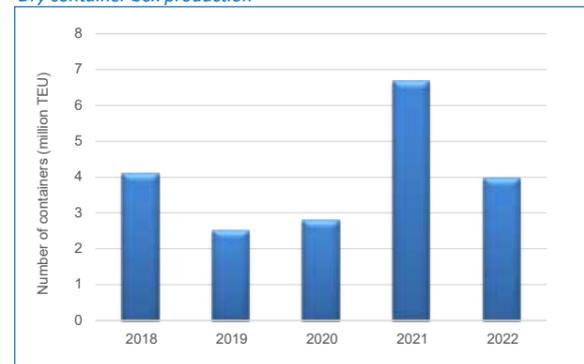
Container trade as estimated by Dynamar and for the whole year. Container box fleet as at year-end, as sourced from WorldCargo News. All figures except annual movements per box are TEU x 1,000.

## Manufacturing

### Overview

Container manufacturing experienced a substantial drop in 2022 with the output of dry boxes, usually accounting for around ninety percent of all output, estimated to have dipped just below the 4.0 million TEU barrier. This would represent a forty-one percent drop year-on-year.

### Dry container box production



Source: World Cargo News/Drewry Maritime Research. 2022 = Dynamar estimate based upon 9M

Coupled with the reduction in production, there was also a severe contraction of new container prices. For the three main dry van types, the year averages fell by approaching thirty percent in 2022.

### Newbuild container prices

Manufacturer	'22/'21	2022	2021	2020
20' dry	-28%	2,660	3,690	2,250
40' dry	-28%	4,300	5,940	3,610
40' HC dry	-27%	4,620	6,370	3,860

Source: Figures in USD per container, average for the year. Source: World Cargo News/Drewry Maritime Research.

### Sales

With production directly related to sales activities -new containers tend not to be built upon speculation - the three major manufacturing groups barely sold half in 2022 of what they did in 2021. Of those, Singamas did best of all as its sales only dropped by thirty-one percent. Shanghai Universal (Dong Fang, ultimately part of Cosco Shipping Development) saw its sales contract by forty-two percent with CIMC's efforts a further eleven points down. CIMC was still the dominant force, though, with a touch over half of the sub-total.

### Container newbuild sales by manufacturer

Manufacturer	'22/'21	2022	2021	2020
	Change (%)	TEU	TEU	TEU
CIMC	-53%	1,238,700	2,659,600	1,131,200
Singamas	-31%	238,900	345,000	112,000
SULE	-42%	958,900	1,645,000	866,100
<b>Sub-total</b>	<b>-48%</b>	<b>2,436,500</b>	<b>4,649,600</b>	<b>2,109,300</b>

Source: Manufacturers and WorldCargo News. SULE = Shanghai Universal Logistics Equipment.

With the container supply situation more than stabilised in 2022, the rush to publicise the order or receipt of new boxes stopped almost entirely. In the 2021 Trades Review, there were twelve announcements for dry/specials reported, and thirteen for reefer containers. The below tables list only nine all told.

### Dry or special box orders/deliveries in 2022 included

Receiver	Order	Notes
Marfret	2,250 TEU	Deliveries: 500x 40'HC + 500x 40' HC palletwide, builder CXIC
MACS	500 TEU	Deliveries: all 20' DV
Evergreen	9,000 TEU	Orders + deliveries, all from Evergreen HI. Figure relates to 'boxes'
Yang Ming	18,600 TEU	Orders: builder Dong Fang
Concor	10,000 TEU	Orders: relates to boxes, builder APPL Containers [India]

Abbreviations: DV = Dry Van [i.e. standard container]; HC = High Cube; FR = Flat Rack

### Reefer container orders/deliveries in 2022 included

Receiver	Containers	Notes
PIL	1,750	Deliveries: all 40'HC with Carrier machinery
Samskip	150	Deliveries: all 45' HC
Alaska Marine Lines	852	Deliveries: believed all 40' HC
ONE	6,500	Orders/deliveries: new units to be added 2022

Unless otherwise stated, all refer to 40' high cube boxes (HC).

### MCI sale

In 2021, Maersk embarked upon a process to sell off its container manufacturing arm, Maersk Container Industry (MCI). Once a substantial player with factories providing dry or reefer units in China, Denmark and for a short while Chile (after the Denmark factory had closed), it had shrunk to just a single reefer factory based in Qingdao. This site also houses MCI's Star Cool refrigeration machinery factory.

A number of companies entered the competition to purchase MCI, with the global leader in box building, CIMC, emerging as the winner with a reported bid of USD 987 million. This was still subject to the usual regulatory scrutiny with, in particular, the relevant authorities in Germany and the US Department of Justice (DoJ) opening investigations.

Acknowledging the cooperation it received from the Bundeskartellamt in Germany, it was the US DoJ that ended up blocking the sale of MCI, its announcement coming in August

2022. Its reasons were twofold, namely the dominant capacity position CIMC would establish in reefer box building, and a reduction in the number of manufacturers from four to three.

### Other manufacturing news

In the course of 2021, when container availability was very tight and newbuild prices spiked, alternative manufacturing projects were announced in India and Vietnam.

In India, the state-owned container blocktrain operator, Concor, placed an order with the new manufacturer and compatriot APPL Containers for 10,000 boxes for a reported USD 60 million. Although this worked out at USD 6,000 per box, Concor containers usually have different specifications, such as side doors. In comparison, contemporary (3Q 2022) average newbuild prices for a 40' high cube container, as advised by Drewry, was USD 5,200. For a 20' dry box, they were less than USD 2,500.

APPL was established by Aawadkrupa Plastometch Pvt Ltd of Bhavnagar, Gujarat (northwest India) and fell within India's wider efforts to encourage domestic manufacturing and to reduce reliance upon imports. Another factory, SM Containers, is also said to be under development in the same area.

Vietnamese state-owned but still publicly-listed steel producer Hoa Phat has been developing a container manufacturing facility in Ba Ria/Vung Tau, southern Vietnam. In the first phase, the plant will have an annual capacity of 200,000 TEU, which could ramp up to 500,000 TEU. Although there were hopes for trial production in the third quarter of 2022, followed in the next trimester by commercial operations, the timetable slipped back well into 2023.

### Container Leasing and financing

For a number of years, container leasing companies had owned the majority of containers. However, in 2022, the combined equipment fleet of the shipping lines (carriers) and others involved in containerised logistics grew by five percent whilst that of the lessors shrank marginally. As a result, the leasing sector share of the global container fleet fell to forty-nine percent.

### Container fleet lessor/carrier shares

	'22/'21	2022	2021	2020
Carriers (+ others)	5%	25,737	24,410	21,137
Lessors	-1%	25,148	25,478	23,026
<b>Lessor share</b>	<b>-</b>	<b>49%</b>	<b>51%</b>	<b>52%</b>

Situations as at year ends. Figures in TEU x 1,000 except ratio. Data sourced from WorldCargo News/Drewry Maritime Research.

In 2022, Mitsubishi HC Capital, integrated its two container leasing entities under the CAI brand. It had bought this company in 2021 (fleet: 1.8 million TEU) and was already owner of Beacon Intermodal Leasing (1.5 million TEU).

A more substantial acquisition is in the works, however, with the first half 2023 announcement that Brookfield Infrastructure Partners agreed to purchase the listed container leasing giant, Triton International. It is the biggest lessor in the world with a fleet of some 7 million TEU. Based upon a purchase price of USD 85 per share, Brookfield could end up paying USD 13.3 billion.

Figure 34

## TOP 20 CARRIERS OPERATED FLEET VERSUS ORDERBOOK

Rank	Parent/main company	Operated fleet		Orderbook		Share
		Ships	TEU	Ships	TEU	
3	CMA CGM	595	3,393,200	366	1,806,201	53%
4	Cosco Shipping	468	2,871,900	291	1,303,039	45%
6	Evergreen	208	1,637,900	81	710,198	43%
5	Hapag-Lloyd	248	1,782,700	128	671,278	38%
8	HMM	75	816,400	38	260,499	32%
15	IRISL	32	143,500	-	-	-
14	KMTC	65	148,500	33	62,053	42%
2	Maersk	706	4,219,400	361	1,683,816	40%
1	MSC	714	4,598,400	301	2,511,895	55%
7	ONE	204	1,528,900	114	741,334	48%
12	PIL	91	297,200	20	103,530	35%
20	Q. An Sheng	92	97,000	47	26,976	28%
13	SITC	108	162,400	19	21,547	13%
19	T.S. Lines	50	109,700	18	31,558	29%
17	Unifeeder	83	132,100	83	132,087	100%
11	Wan Hai	145	436,800	32	91,737	21%
18	X-Press Feeders	83	130,200	49	66,550	51%
9	Yang Ming	94	707,400	43	491,008	69%
16	Zhonggu Shg	103	136,100	68	55,436	41%
10	ZIM	138	533,800	130	505,142	95%
Sub-total		4,302	23,883,300	2,222	11,275,900	47%
Rest		2,213	2,492,000	-1,285	-3,787,300	-152%
World total		6,515	26,375,300	937	7,488,500	28%
Share Top-20		66%	91%	237%	151%	-

## Notes:

- Operated fleet: all container capable ships operating in liner services, Orderbook: cellular vessels only, Analysis based on data sourced from Alphaliner
- As at 31 December 2022

Figure 35

## OWNED AND CHARTERED CAPACITY BY LINER OPERATOR

Rank	Rank	Operator	Operated capacity	Owned capacity	Owned share	Chartered capacity	Chartered share	Share of total charter capacity %
Chart. Cap.	Oper. Cap.	(main company)	TEU	TEU	%	TEU	%	
2	3	CMA CGM	3,393,200	1,587,000	47%	1,806,200	53%	15.1%
4	4	Cosco Shipping	2,871,900	1,568,800	55%	1,303,000	45%	10.9%
6	6	Evergreen	1,637,900	927,700	57%	710,200	43%	5.9%
7	5	Hapag-Lloyd	1,782,700	1,111,400	62%	671,300	38%	5.6%
10	8	HMM	816,400	555,900	68%	260,500	32%	2.2%
-	15	IRISL	143,500	143,500	100%	0	0%	0.0%
15	14	KMTC	148,500	86,500	58%	62,100	42%	0.5%
3	2	Maersk	4,219,400	2,535,600	60%	1,683,800	40%	14.1%
1	1	MSC	4,598,400	2,086,500	45%	2,511,900	55%	21.0%
5	7	ONE	1,528,900	787,600	52%	741,300	48%	6.2%
12	12	PIL	297,200	193,600	65%	103,500	35%	0.9%
18	20	Quanzhou An Sheng	97,000	70,000	72%	27,000	28%	0.2%
19	13	SITC	162,400	140,900	87%	21,500	13%	0.2%
17	19	T.S. Lines	109,700	78,200	71%	31,600	29%	0.3%
11	17	Unifeeder	132,100	0	0%	132,100	100%	1.1%
13	11	Wan Hai	436,800	345,100	79%	91,700	21%	0.8%
14	18	X-Press Feeders	130,200	63,600	49%	66,600	51%	0.6%
9	9	Yang Ming	707,400	216,300	31%	491,000	69%	4.1%
16	16	Zhonggu Shipping	136,100	80,700	59%	55,400	41%	0.5%
8	10	ZIM	533,800	28,700	5%	505,100	95%	4.2%
Total of the above companies			23,883,500	12,607,600	53%	11,275,800	47%	94.4%
Total liner fleet (owned & chartered)			26,375,300	14,427,300	55%	11,948,000	45%	100.0%

## Notes:

- TEU capacity is just a snapshot, chartering or redelivery of vessels obviously has its impact on the fleet operated by the individual carrier
- Analysis based on data sourced from Alphaliner
- As at 31 December 2022

Figure 36

## CELLULAR FLEET COMPOSITION

Size category	Cap	Fleet		Orderbook		
	Share	Ships	TEU	Ships	TEU	
18,000+	50%	153	3,210,600	68	1,620,500	
13,300-17,999	68%	353	5,053,400	229	3,449,000	
10,000-13,299	7%	206	2,262,200	13	149,600	
7,500-9,999	19%	478	4,242,952	103	801,868	
5,100-7,499	17%	437	2,727,100	75	454,600	
4,000-4,999	3%	630	2,855,700	18	82,200	
3,000-3,999	28%	271	937,400	80	261,700	
2,000-2,999	16%	793	2,014,600	121	315,800	
1,000-1,999	16%	1,436	2,062,200	214	334,200	
-999	1%	949	629,900	17	8,600	
Total ships		29%	5,706	25,996,052	938	7,478,068

## Notes:

- Analysis based on data sourced from Alphaliner
- As at 31 December 2022

Figure 37

## INDICATIVE CHARTER RATES 20

## Hamburg Index

In USD/slot/day (based on homogeneous 14 tons TEU capacity)

Category	800-999	1,000-1,260	2,000-2,299	3,100-3,500	3,950-4,400	6,000-7,000
	TEU	TEU	TEU	TEU	TEU	TEU
January	51.72	28.82	20.75	39.05	10.53	8.58
February	32.14	31.42	20.75	46.36	10.53	8.58
March	49.03	35.80	20.75	46.36	10.53	9.26
April	35.83	37.09	20.75	46.36	10.53	9.26
May	43.69	38.36	20.75	46.36	23.57	15.66
June	43.69	38.36	20.75	46.36	23.57	15.66
July	43.69	51.19	20.75	49.05	14.29	15.66
August	34.88	38.14	20.75	49.05	16.67	15.66
September	23.24	29.24	20.75	12.85	16.67	15.66
October	23.24	29.24	20.75	12.85	16.67	15.66
November	16.65	12.57	20.75	7.51	7.40	15.66
December	16.65	11.75	20.75	7.51	7.40	15.66

## Average Dynamar-calculated monthly charter rates

In USD/ship/day (based on nominal TEU capacity)

Category	1,100	1,700	2,750	4,400	6,800	9,000
	TEU	TEU	TEU	TEU	TEU	TEU
January	33,625	53,375	75,000	107,750	127,750	157,625
February	37,375	58,875	80,875	118,000	136,750	167,000
March	41,000	65,000	82,625	121,125	139,000	170,000
April	40,200	64,400	82,600	121,100	139,500	170,000
May	37,250	62,125	81,688	121,000	139,500	170,000
June	35,813	60,188	80,875	121,000	139,500	170,000
July	33,800	53,300	80,400	120,100	139,200	169,400
August	32,563	49,625	78,125	118,250	138,875	168,750
September	24,300	30,100	54,000	76,400	102,400	137,800
October	12,563	14,375	23,625	30,875	56,250	96,875
November	11,813	13,875	20,438	25,375	49,938	80,375
December	11,880	14,000	19,700	24,350	41,800	72,700

Figure 38

## ACTUAL CHARTER RATES REPORTED IN 2022

Month	Year of built	TEU	USD	Months
January	2010	4,308	42,000	46-50 mths
February	2003	6,492	50,000	60 mths
March	2005	3,091	160,000	1-2 mths
April	2014	13,808	49,500	60 mths
May	2013	3,868	125,000	6 mths
June	2009	8,814	175,000	70-80 days
July	2024	7,700	42,288	12 yrs
August	2006	4,000	40,000	5 yrs
September	2014	10,010	35,000	70-78 mths
October	2003	4,444	35,000	12 mths
November	2004	4,992	25,000	6 mths
December	2003	6,078	30,000	2-3 mths

## Notes:

- In USD per ship per day for the period indicated

Figure 39

## CHINA CONTAINERSHIPS NEWBUILDING PRICES INDEX

Month	2022	2021	2020	2019
Jan	1,017	792	835	870
Feb	1,025	796	835	874
Mar	1,043	842	831	871
Apr	1,054	877	825	868
May	1,059	892	819	865
Jun	1,066	907	818	862
Jul	1,071	938	811	855
Aug	1,072	973	809	849
Sep	1,071	994	804	840
Oct	1,062	1,006	796	838
Nov	1,057	1,011	788	836
Dec	1,044	1,015	789	835
Average	1,072	1,015	835	874
High	1,053	920	813	855
Low	1,017	792	788	835

Figure 40

## CONTAINERSHIP NEWBUILDING PRICES

Month	2,750 TEU			23,000 TEU		
	2022	2021	2020	2022	2021	2020
Jan	40.4	30	31.5	191.3	143.3	146
Feb	40.6	30.4	31	195.4	145	146
Mar	41.9	32.7	31	198.4	147.8	146
Apr	42	34.6	31	201.3	154.1	146
May	42.6	35.9	30.5	204.3	157.5	145
Jun	43	36.3	30	206.5	161.9	144.6
Jul	43	36.5	30	210.4	170.3	144
Aug	43	36.6	30	213	176.4	144
Sep	43	38	30	214.8	180.5	144
Oct	43	39	30	215	183.4	143.5
Nov	42.5	39.5	30	215	185.6	142.1
Dec	42.4	40	30	215	188	142
Average	42.3	35.8	30.4	206.7	166.1	144.4
High	43	40	31.5	215	188	146
Low	40.4	30	30	191.3	143.3	142

## Notes:

- Figures are USD x million and are the monthly averages of weekly reports, these being based themselves on three-month trends. SOURCE: Clarksons Shipping Intelligence Weekly

Figure 41

## INDICATIVE VESSEL ORDERS USD/TEU

Owner	TEU	Ships	USD Million	USD/TEU
CoscoSL	24,000	5	239.9	9,994
Maersk Line	17,000	6	188.5	11,088
MSC	16,000	12	180.0	11,250
CMA CGM	15,000	6	175.0	11,667
Wan Hai	13,100	5	131.8	10,061
RCL	12,000	2	133.0	11,083
Sinokor	8,000	6	98.0	12,250
Cido Shipping	7,600	4	120.7	15,882
Sinokor	1,800	6	27.0	15,000
Capital Maritime	2,800	4	45.5	16,250
Asean Sea Lines	1,800	2	32.6	18,111
Sinokor	1,000	2	25.0	25,000

Figure 42  
CONTAINERSHIP ORDERS

By/for carriers (either directly or through non-operating owners)

Operator	Month	Ships	TEU	Total TEU	Operator	Month	Ships	TEU	Total TEU
Asean Seas Line	Jan	1	1,800	1,800	MSC	Apr	10	8,300	83,000
Asean Seas Line	Mar	2	1,800	3,600	MSC	Jun	4	2,400	9,600
Asean Seas Line	May	4	1,180	4,720	MSC	Jun	10	11,400	114,000
Asean Seas Line	Jun	4	1,640	6,560	MSC	Oct	12	16,000	192,000
Asyad	May	2	2,782	5,564	MTT Shipping	Mar	1	1,800	1,800
BAL	Jun	2	14,700	29,400	MTT Shipping	Mar	2	1,800	3,600
BG Freight	Jun	1	1,380	1,380	North Sea CL	Jul	2	1,300	2,600
CMA CGM	Jan	1	1,096	1,096	ONE	May	10	13,800	137,700
CMA CGM	Feb	3	7,928	23,784	OOCL	Oct	7	24,000	168,000
CMA CGM	Mar	4	7,600	30,400	Pan Ocean	May	2	1,800	3,600
CMA CGM	May	5	7,928	39,640	PIL	Jan	4	14,000	56,000
CMA CGM	May	6	15,000	90,000	PIL	Jul	4	8,000	32,000
CMA CGM	Oct	4	23,104	92,416	RCL	Feb	2	7,600	15,100
CoscoSL	Oct	5	24,000	120,000	RCL	Mar	2	11,900	23,700
Crowley	Sep	4	1,400	5,600	RCL	May	2	7,000	14,000
CU Lines	Feb	2	7,600	15,100	Samudera	Feb	3	1,900	5,700
Dong Young Shipping	Jan	2	1,000	2,000	Seatrade	Jun	4	1,800	7,200
Dong Young Shipping	Aug	2	2,500	5,000	Sinokor	Jan	4	2,500	10,000
Evergreen	Mar	3	24,000	72,000	Sinokor	Mar	8	8,000	64,000
Hai An Transport	Feb	4	1,800	7,200	Sinokor	Mar	4	2,800	11,100
HMM	Jun	2	7,700	15,400	SITC	Apr	10	1,800	18,000
HMM	Jul	3	1,800	5,400	T.S. Lines	Jan	1	2,900	2,900
Interasia	Apr	3	3,100	9,200	T.S. Lines	Mar	2	7,500	15,000
Interasia	Oct	3	3,100	9,200	Transit	Aug	1	1,900	1,900
Maersk	Jan	4	16,000	64,000	Trawinds Shipping	Aug	2	4,600	9,300
Maersk	Oct	6	17,000	102,000	Turkon Line	Jun	2	4,000	8,000
Matson	Oct	3	3,600	10,900	Wan Hai	Mar	5	13,100	65,500
Meratus	Jan	1	1,800	1,800	X-Press Feeders	Jan	4	7,500	30,000
MSC	Jan	6	15,000	90,000	X-Press Feeders	Mar	2	7,500	15,000
MSC	Jan	10	1,800	18,000	ZIM	Jan	3	7,900	23,800
MSC	Jan	6	16,000	96,000	ZIM	Mar	2	5,500	11,000
MSC	Apr	6	7,900	47,200					
		<b>Total</b>					<b>245</b>	<b>8,900</b>	<b>2,181,400</b>

By/for non-operating owners (without charterer attached or known)

Operator	Month	Ships	TEU	Total TEU	Operator	Month	Ships	TEU	Total TEU
Asiatic Lloyd	Mar	2	7,100	14,200	Euroseas	Feb	2	2,800	5,600
Capital Ship Mgmt	Jan	3	1,800	5,400	Euroseas	Mar	3	1,800	5,400
Capital Ship Mgmt	Mar	4	2,900	11,400	Euroseas	May	2	2,800	5,600
Celsium Shipping	Feb	2	3,000	6,000	Goto Shipping	Mar	2	2,500	4,900
Celsium Shipping	Apr	2	3,000	6,000	Hainan Zhuomei Shg	Oct	1	1,500	1,500
Cido Shipping	Mar	4	7,600	30,400	Hartmann	Sep	3	3,500	10,500
Cosmoship	Jan	2	1,000	2,000	Langh Ship	Sep	3	1,200	3,500
Cosmoship	Jul	2	1,800	3,700	Locktek	Jan	1	1,800	1,800
Cosmoship	Aug	2	1,200	2,400	Navios	Apr	2	5,300	10,600
Danaos	Mar	2	7,100	14,200	Schoeller Holding	Apr	2	2,700	5,400
Danaos	Apr	4	8,000	32,000	Songa Box	Apr	1	1,800	1,800
Doun Kisen	Feb	2	1,900	3,800	Tsakos Shipping	Feb	4	2,800	11,100
Doun Kisen	Apr	2	1,900	3,800	Tsakos Shipping	May	4	2,800	11,100
Eastern Pacific	Mar	8	3,000	23,600	Xiamen Dingxiangshun	Aug	1	2,200	2,200
Eastern Pacific	Mar	2	1,800	3,600	Zodiac Maritime	Feb	6	16,500	99,000
		<b>Total</b>					<b>80</b>	<b>4,300</b>	<b>342,700</b>

Figure 43  
CAPACITY EVOLUTION OF THE POSTPANAMAX CONTAINERSHIP

Ship	Year of Launch	Capacity TEU	Dwt (t)	Draught (m)	Length over all (m)	Breadth (m)	Width (boxes)	Speed Knots
<b>NewPostPanamax (by Length over all and/or Breadth)</b>								
MSC Irina	2023	24,346	240,000	17.0	399.9	61.3	24	-
OOCL Spain	2023	24,188	228,300	16.5	399.9	61.3	24	22.5
MSC Tessa	2023	24,116	240,700	17.0	400	61.5	24	22.5
Ever Alot	2022	24,004	242,000	17.0	399.9	61.5	24	22.5
Ever Ace	2021	23,992	240,200	16.5	400	62.0	24	22.5
HMM Algeciras	2020	23,964	232,000	16.5	399.9	61.0	24	22.4
MSC Gulsan	2019	23,700	228,100	16.4	399.8	61.0	24	22.0
CMA CGM Jacques Saade	2020	23,100	215,000	16.0	399.9	61.0	24	22.0
OOCL Hong Kong	2017	21,400	191,300	16.0	400	58.8	23	22.0
Madrid Maersk	2017	20,600	190,300	16.0	399	58.6	23	22.0
MOL Triumph	2017	20,200	193,200	16.0	400	58.8	23	22.5
Barzan	2015	19,900	195,600	16.0	400	58.6	23	21.0
MSC Oscar	2014	19,200	199,300	16.0	395.4	59.0	23	22.8
CSCL Globe	2014	19,000	195,000	16.0	400	58.6	23	23.0
Maersk McKinney Moller	2013	18,300	200,000	16.0	400	59.0	23	22.0
CMA CGM Benjamin Franklin	2015	17,900	185,000	16.0	399	54.0	21	22.2
CMA CGM Marco Polo	2012	16,000	186,500	16.0	394.4	53.6	21	24.1
Emma Maersk	2006	15,600	175,000	16.0	397	56.4	22	24.0
<b>NewPanamax</b>								
CMA CGM Argentina	2019	15,100	156,900	16.0	366	51.0	20	22.0
Sajir	2014	15,000	140,000	15.5	368.5	51.0	20	22.0
Cosco Shipping Himalayas	2017	14,600	153,800	15.5	366	51.2	20	22.5
CSCL Star	2011	14,100	155,500	15.5	366	51.2	20	24.0
MSC Daniela	2008	13,800	155,400	15.6	366	51.3	20	23.5
Rayen	2018	14,700	148,600	16.0	366	48.2	19	21.8
CMA CGM G. Washington	2017	14,400	148,000	16.0	366	48.2	19	22.0
Umm Salal	2011	13,500	145,000	15.5	365.5	48.2	19	25.0
Maersk Edinburgh	2010	13,600	140,530	15.5	366	48.2	19	24.0
MSC Filomena	2010	13,400	142,400	15.5	366	48.2	19	26.0
CMA CGM Andromeda	2009	11,400	128,760	15.5	363	45.6	18	24.7
ZIM Antwerp	2009	10,100	116,440	15.0	349	45.6	18	24.0
Cosco Europe	2007	10,100	115,000	15.0	349	45.6	18	25.0
<b>PostPanamax</b>								
CMA CGM Ivanhoe	2008	9,700	120,000	15.0	350	42.8	17	24.5
Maersk Altair	2007	9,600	110,800	15.0	337	45.6	18	24.0
CSCL Long Angeles	2006	9,600	112,000	14.5	350	45.6	18	25.0
Cosco Guangzhou	2006	9,500	108,000	14.5	350	42.8	17	25.4
CMA CGM Rigoletto	2006	9,400	107,500	14.5	349	42.8	17	24.1
CMA CGM Carmen	2006	8,500	101,000	14.5	335	42.8	17	25.0
MSC Pamela	2005	9,200	110,000	14.5	336	45.6	18	25.0
Gudrun Maersk	2005	9,100	115,000	14.8	367	43.0	17	24.0
Colombo Express	2005	8,800	104,400	14.6	335	42.8	17	25.0
Axel Maersk	2003	8,200	109,000	15.0	352	42.8	17	24.0
OOCL Shenzhen	2003	8,100	99,500	14.5	323	42.8	17	25.0
Long Beach Bridge	2002	5,600	69,000	14.0	278	40.0	16	25.0
Hamburg Express	2001	7,500	100,000	14.5	320	42.8	17	25.0
P&O Nedlloyd Houtman	2001	6,800	88,700	13.5	299	42.8	17	25.0
MSC Flaminia	2001	6,700	84,900	14.5	304	40.0	16	25.5
Hyundai Patriot	2001	6,500	80,600	14.0	304	40.0	16	24.4
MOL Vigilance	2000	4,900	67,300	13.6	294	32.3	12	24.0
Hanjin Amsterdam	1999	5,600	69,000	14.0	279	40.0	16	26.0
Svendborg Maersk	1998	8,000	104,700	14.5	347	42.8	17	24.0
NYK Sirius	1998	6,100	82,300	14.0	300	40.0	16	23.0
Cosco Qingdao	1997	5,400	69,300	14.0	280	39.8	15	24.5
Regina Maersk	1996	7,000	82,100	14.0	318	42.8	17	24.5
OOCL Hongkong	1995	5,300	68,000	14.0	276	40.0	16	25.0
President Truman	1988	4,500	53,600	12.5	275	39.4	15	24.0

**Notes:**

- By year, since the launch of the first postPanamax unit in 1988

**Figure 44**  
**TANK CONTAINER FLEET**

Operators	Share 2022	2022 Units	2021 Units	2020 TEU
Bertschi Group	4%	31,100	28,300	26,400
Bulkhaul	3%	23,000	24,000	24,000
China Railway Log.	3%	27,500	27,500	23,200
Den Hartogh Log.	3%	24,500	23,000	20,000
Hoyer Group	5%	39,900	35,500	35,500
Int. Tank Transport	2%	20,000	19,000	17,000
Newport	5%	38,500	37,500	37,500
NRS Ocean Log	2%	15,600	7,000	7,000
Stolt Tank Cont.	6%	47,000	43,000	40,300
Sutton Intl	2%	13,900	14,100	9,500
Other	36%	287,800	155,900	176,600
<b>Total operators</b>	<b>71%</b>	<b>568,800</b>	<b>489,900</b>	<b>443,100</b>
Shippers & other	25%	199,100	211,300	199,100
Idle leasing	5%	36,900	38,800	44,400
<b>Total Fleet</b>	<b>100%</b>	<b>804,800</b>	<b>740,000</b>	<b>686,600</b>

Leasing Companies	Share 2022	2022 Units	2021 Units	2020 TEU
Albatros Tank	3%	9,900	7,500	9,500
CS Leasing	8%	29,200	18,000	15,500
Eurotainer	15%	55,000	49,500	48,500
EXSIF Worldwide	19%	70,000	66,500	64,000
Peacock*	6%	20,000	18,000	16,100
Raffles Lease	8%	30,000	16,000	15,100
Seaco Global	12%	43,000	43,000	42,000
Trifleet Leasing	6%	22,400	19,000	17,800
Triton Int.	3%	12,200	13,000	12,500
TWS Rent-A-Tainer	2%	7,700	7,700	0
Other	17%	61,600	56,500	61,600
<b>Total</b>	<b>100%</b>	<b>360,900</b>	<b>323,000</b>	<b>316,700</b>

**Notes:**  
• Source: ITCO



**Figure 45**  
**THE 15 LARGEST CARRIERS BY REEFER PLUG CAPACITY**

Rank TEU	Rank Plugs	Main/Parent Company	Number of ships	Total TEU capacity	Reefer plugs	plugs/TEU
3	3	CMA CGM	560	3,281,300	358,500	0.11
4	4	Cosco Shipping	459	2,889,500	235,300	0.08
6	6	Evergreen	202	1,578,200	139,300	0.09
5	5	Hapag-Lloyd	244	1,746,000	181,800	0.1
8	8	HMM	74	814,400	63,400	0.08
13	16	KMTC	68	152,100	17,300	0.11
2	1	Maersk	731	4,272,400	503,900	0.12
1	2	MSC	674	4,451,500	458,500	0.1
7	7	ONE	204	1,511,200	129,400	0.09
12	12	PIL	86	284,200	33,700	0.12
14	15	SITC	98	143,000	19,200	0.13
11	11	Wan Hai	172	465,000	55,800	0.12
15	13	X-Press Feeders	83	135,900	23,900	0.18
9	10	Yang Ming	93	685,200	56,400	0.08
10	9	ZIM	135	502,300	60,700	0.12
<b>Top-15</b>			<b>4,364</b>	<b>23,888,200</b>	<b>2,436,300</b>	<b>0.10</b>
<b>Other carriers</b>			<b>1,858</b>	<b>884,800</b>		
<b>Total</b>			<b>6,222</b>	<b>24,773,000</b>		

**Notes:**  
• One reefer plug fits two TEU  
• As of 1 July of each year

**Figure 46**  
**GDP/POPULATION DEVELOPMENT**

NAFTA	2024	2023	2022	2021	2020
GDP (USD x billion)	3.0	30,437.2	28,890.8	26,283.1	23,626.3
Population (millions)	508.4	505.2	502.2	499.4	497.0
GDP per capita	5.9	60,243.2	57,528.1	52,631.3	47,535.8
Share global GDP	0%	29%	29%	27%	28%
Share global population	6%	6%	6%	6%	6%
GDP per capita	0%	451%	450%	424%	431%
North America Free Trade Agreement (NAFTA) Members: Canada, Mexico, United States					

Caricom	2024	2023	2022	2021	2020
GDP (USD x billion)	115.4	111.9	105.5	92.5	80.8
Population (millions)	19.8	19.6	19.4	19.2	19.0
GDP per capita	5,830.4	5,710.3	5,439.9	4,820.7	4,255.1
Share global GDP	0.1%	0.1%	0.1%	0.1%	0.1%
Share global population	0.2%	0.2%	0.2%	0.2%	0.2%
GDP per capita	42.0%	42.7%	42.5%	38.9%	38.6%
Caribbean Community (CARICOM) Members: Antigua & Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat*, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Suriname, Trinidad & Tobago. Countries asterisked* = figures not available.					

SAARC	2024	2023	2022	2021	2020
GDP (USD x billion)	4,885.3	4,524.6	4,182.2	3,891.4	3,431.0
Population (millions)	1,925.9	1,906.3	1,886.6	1,866.7	1,846.7
GDP per capita	2,536.6	2,373.5	2,216.8	2,084.7	1,857.9
Share global GDP	4%	4%	4%	4%	4%
Share global population	24%	24%	24%	24%	24%
GDP per capita	18%	18%	17%	17%	17%
South Asian Association for Regional Cooperation (SAARC) Members: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka.					

GCC	2024	2023	2022	2021	2020
GDP (USD x billion)	2,108.9	2,092.8	2,108.1	1,681.0	1,419.4
Population (millions)	62.1	61.0	59.8	58.4	57.6
GDP per capita	33,962.4	34,330.1	35,233.8	28,767.7	24,656.1
Share global GDP	2%	2%	2%	2%	1%
Share global population	1%	1%	1%	1%	1%
GDP per capita	245%	257%	275%	232%	224%
Gulf Co-operation Council (GCC) Members: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, UAE					

African Union	2024	2023	2022	2021	2020
GDP (USD x billion)	3,276.0	3,035.2	2,840.0	2,571.7	2,288.9
Population (millions)	1,404.0	1,370.3	1,337.5	1,305.5	1,274.8
GDP per capita	2,333.3	2,215.0	2,123.3	1,970.0	1,795.5
Share global GDP	3%	3%	3%	2%	2%
Share global population	18%	17%	17%	17%	17%
GDP per capita	17%	17%	17%	16%	16%
African Union (AU) Members: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Cameroon, Central Africa Republic, Chad, Comoros, Congo (Dem.Rep.), Congo (Rep.), Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Somalia*, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Western Sahara*, Zambia, Zimbabwe. Countries asterisked* = figures not available (Somalia, population unavailable).					

Mercosur	2024	2023	2022	2021	2020
GDP (USD x billion)	2,865.4	2,715.6	2,552.9	2,240.8	1,973.9
Population (millions)	301.3	299.6	298.1	296.9	295.9
GDP per capita	9,510.9	9,064.6	8,562.7	7,546.6	6,671.2
Share global GDP	3%	2%	2%	2%	2%
Share global population	4%	4%	4%	4%	4%
GDP per capita	69%	68%	67%	61%	61%
Mercado Comun del Sur (Mercosur) Members: Argentina, Brazil, Paraguay, Uruguay, Venezuela (suspended)					

EU	2024	2023	2022	2021	2020
GDP (USD x billion)	19,308.7	18,319.7	17,199.5	17,094.2	15,282.8
Population (millions)	447.1	446.6	446.0	445.3	445.3
GDP per capita	43,182.1	41,017.5	38,560.0	38,391.8	34,317.2
Share global GDP	17%	17%	16%	15%	14%
Share global population	6%	6%	6%	6%	6%
GDP per capita	311%	307%	301%	310%	311%
European Union (EU) Members: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, (United Kingdom transitioning out of the EU, effective 1 Jan 2021)					

PIF	2024	2023	2022	2021	2020
GDP (USD x billion)	2,255.5	2,148.8	2,045.9	1,917.6	1,602.2
Population (millions)	44.0	43.4	42.8	42.4	42.0
GDP per capita	51,253.0	49,521.0	47,780.9	45,254.3	38,147.8
Share global GDP	2.0%	2.0%	2.0%	2.0%	1.9%
Share global population	0.6%	0.5%	0.5%	0.5%	0.5%
GDP per capita	369.2%	370.6%	373.4%	364.9%	346.0%
Pacific Islands Forum (PIF) Members: Australia, Cook Islands*, Fiji, Kiribati, Marshall Islands, Micronesia, Nauru, New Zealand, Niue*, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu. Countries asterisked* = figures not available.					

ASEAN	2024	2023	2022	2021	2020
GDP (USD x billion)	4,261.0	3,958.1	3,646.2	3,358.6	3,084.2
Population (millions)	684.2	678.2	672.2	666.1	661.0
GDP per capita	6,227.4	5,835.9	5,424.7	5,042.3	4,665.6
Share global GDP	4%	4%	3%	3%	3%
Share global population	9%	9%	9%	9%	9%
GDP per capita	45%	44%	42%	41%	42%
Association of Southeast Asia Nations (ASEAN) Members: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam					

SICA	2024	2023	2022	2021	2020
GDP (USD x billion)	469.3	440.1	414.5	380.9	335.3
Population (millions)	64.6	63.7	62.9	62.0	61.2
GDP per capita	7,260.7	6,903.2	6,593.0	6,142.9	5,481.6
Share global GDP	0.4%	0.4%	0.4%	0.3%	0.3%
Share global population	0.8%	0.8%	0.8%	0.8%	0.8%
GDP per capita	52.3%	51.7%	51.5%	49.5%	49.7%
Central America Integration System (SICA) members: Belize, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama					

**Notes:**  
• Based upon information sourced from IMF. GDP at current prices in USD as converted by source from national currency; population in millions

## NON-CONTAINER TRADES

### BREAKBULK MULTIPURPOSE

The “multipurpose” sector covers those vessels employed upon the breakbulk trades that are not specialist heavy-load ships like module carriers or semi-submersible ships. Most often, but not always, multipurpose ships are employed on liner-like services or at least regular sailings along distinct trade lanes. The method of cargo loading and discharge is via lift-on/lift-off (Lo/Lo) and/or roll-on/roll-off (Ro/Ro). Most vessels, but not necessarily all, are also fitted with ships own gear (cranes) of varying capacities.

The specialised heavy-load vessel operators are covered in their own sub-section. Combined, the multipurpose and specialist heavy-load sectors comprise the overall “breakbulk” market. Within the multipurpose section, the Lo/Lo and Ro/Ro operators are discussed separately.

### Lo/Lo fleet and operator overview

In the final quarter of 2022, the ten largest operators of multipurpose tonnage deployed a combined fleet of 569 ships with a total deadweight of 14.4 million tons. These carriers were active in multiple sub-sectors. Two were forest products carriers (G2 Ocean and Saga), and others were traditional multipurpose operators usually running liner services (e.g. Chipolbrok, AAL Shipping and Swire). Alternatively, there were multipurpose operators running on a combination of liner and tramp services (e.g. Cosco Shipping Specialized Carriers -CoscoSSC- and Wagenborg). Finally, there was one who was active principally on a tramp basis (Arklow, and then only intra-regional).

Heading the top ten were the two forest products carriers, G2 Ocean (84 vessels and 4.6 million TEU) and Saga Welco (49 ships and 2.5 million-dwt). This sector always deploys the largest qualifying ships by deadweight, which is why BBC Chartering, despite it operating the largest fleet by number (139 ships), is only third by total deadweight (1.7 million-dwt).

BBC Chartering provides a mixture of tramp and liner-like services. Chipolbrok, in contrast, is principally a liner operator. Its average of 35,700-dwt per ship is the third largest by this measurement. However, as it operates a thirty ship strong fleet, it is pushed into fifth place by total capacity due to Wagenborg's more numerous (100) yet much smaller (11,400-dwt average) ships.

In sixth and seventh are multi-breakbulk sector operators in Cosco Shipping Specialized Carriers and Spliethoff of the Netherlands. Through a subsidiary, the Chinese entity also has considerable heavy-load and log carrier assets, amongst others. Similar could be said of Spliethoff who, as a group, also operates Ro/Ro and heavy-load vessels. These other ships have been covered in the relevant rankings.

### Top 10 breakbulk operators by dwt capacity

Rank	Carrier	# ships	Total dwt	Avg dwt	Avg Age
8	AAL Shipping	23	658,400	28,600	11
10	Arklow Shg	41	358,000	8,700	5
3	BBC Chartering	136	1,699,500	12,500	12
5	Chipolbrok	30	1,069,900	35,700	10
6	CoscoSSC	36	973,800	27,000	13
1	G2 Ocean	84	4,610,500	54,900	15
2	Saga Welco	49	2,475,900	50,500	18
7	Spliethoff	51	873,600	17,100	14
9	Swire Shipping	19	517,100	27,200	13
4	Wagenborg	100	1,136,800	11,400	15
<b>Top 10</b>		<b>569</b>	<b>14,373,400</b>	<b>25,300</b>	<b>11</b>
	Other carriers	4,080	51,640,200	17,700	19
	<b>Grand Total</b>	<b>4,649</b>	<b>66,013,600</b>	<b>14,200</b>	<b>18</b>
	Top 10 shares	12%	22%		

As per 4Q 2022. The above analysis is based on the number of general cargo/multipurpose ships, with or without crane capacity, operated by the said 10 companies. Only ships in excess of 5,000-dwt have been included. The following vessel types have NOT been considered here: conventional Ro/Ro, vehicle carrier, conventional reefer, heavy-load, dry bulk or similar, and containers

Looking at the same top ten fleet but from the angle of ships-own crane capacities, the situation was slightly different. BBC Chartering was now the largest with an aggregate heavy-lift capacity of 49,400 tons, and a maximum on at least one vessel of 700 tons. All crane related figures here and in the accompanying table are combinable which usually relates to two cranes working in tandem (or twin-lift), to handle a piece heavier than their individual capacities.

Some way behind, but in a clear second place, was Spliethoff with a total heavy-lift capacity of 21,500 tons at an average of 420 tons and a maximum of 1,400 tons.

### Heavy-lift versus heavy-load

As a rule of thumb, 500 tons is taken as the dividing line between “multipurpose heavy-lift” and the more specialised “heavy-load” segment. These are separate markets with the vessels deployed to them operated differently. It is possible, though, for vessels that would technically be considered heavy-load capable because of their crane capacities to be employed in the operationally different multipurpose market. As such, some units able to lift more than 500 tons are included in the multipurpose-heavy lift analysis.

Whilst Spliethoff's average capacity of 420 tons per ship is one of the highest, it is surpassed by both Chipolbrok on 470 tons and AAL Shipping's 500 tons. At the other end of the scale are the forest product carriers G2 Ocean and Saga Welco -the largest by deadweight- who principally operate low capacity gantry cranes averaging 80 tons and 50 tons respectively. Lowest of all is Wagenborg on 30 tons average, but considering it operates the smallest geared ships -none of Arklow's qualifying fleet is crane equipped- this is not a surprise. Swire Shipping's average is also somewhat on the low side but may also reflect the importance of containers to its cargo profile

### Top 10 breakbulk Operators by heavy-lift (tons) capacity

Rank	Operator	Ships	Total HL	Ave HL	Max HL
5	AAL Shipping	23	11,480	500	700
-n/a-	Arklow Shg	41	-	-	-
1	BBC Chartering	136	49,440	360	800
3	Chipolbrok	30	14,240	470	700
4	CoscoSSC	36	11,540	320	700
6	G2 Ocean	84	6,350	80	150
8	Saga Welco	49	2,570	50	140
2	Spliethoff	51	21,520	420	1,400
9	Swire Shipping	19	2,360	120	300
7	Wagenborg	100	3,150	30	160
<b>Top 10 breakbulk</b>		<b>569</b>	<b>122,600</b>	<b>200</b>	<b>300</b>
	Other carriers	2,531	250,700	100	800
	<b>Grand Total</b>	<b>3,100</b>	<b>373,300</b>	<b>100</b>	<b>373,300</b>
	Top 10 shares	18%	33%		

As per 4Q 2022. The above analysis is based on the number of general cargo/multipurpose ships, with crane capacity, operated by the 10 largest companies by deadweight. Only ships in excess of 5,000-dwt have been included. The following vessel types have NOT been considered here: conventional Ro/Ro, vehicle carrier, conventional reefer, heavy-load, dry bulk and containers.

### Ro/Ro fleet and operator overview

The Grimaldi Group of Italy continued to be the dominant operator of multipurpose Ro/Ro tonnage controlling a fleet of approaching forty ships with an aggregate capacity in excess of 1.5 million-dwt (as per 4Q 2022). It was still way ahead of all other operators with the second largest, compatriot Messina Line, on eight ships and 328,000-dwt. However, given news in the first half of 2023 that Messina will sell three ships to the US government, it may well find itself superseded by NYK Bulk and Projects Carrier. This carrier maintained its third spot with a total capacity of 267,000-dwt. Spliethoff's Transfennica was the only other carrier with a fleet number in double figures, although its deadweight was bettered slightly by that of Bahri's six ships.

### Top 10 conventional Ro/Ro operators by dwt capacity

Rank	Operator	Ships	Total dwt	Ave dwt	Ave age
4	Bahri	6	155.6	25.9	9
10	Chun An	4	53.5	13.4	16
9	Eastern Car Liner	6	71.0	11.8	15
1	Grimaldi	65	1,515.1	23.3	12
8	Kyowa Shipping	7	93.1	13.3	13
6	Matson	3	126.2	42.1	15
2	Messina Line	8	328.0	41.0	10
3	NYK BPC	12	267.0	22.3	16
5	Transfennica	10	152.9	15.3	15
7	Wallenius SOL	5	99.7	19.9	9
<b>Top-10</b>		<b>126</b>	<b>2,862.1</b>	<b>22.7</b>	<b>13</b>
	Other operators	376	3,895.1	10.4	-
	<b>Grand Total</b>	<b>502</b>	<b>6,757.2</b>	<b>13.5</b>	<b>13</b>
	Share Top-10	25%	42%	-	-

The same ten carriers by lane metre (Lm) capacity also showed Grimaldi as the clear leader with 267,000 Lm. Messina was second with 53,000 Lm, although its average of 7,700 Lm per ship is the biggest in the field. Transfennica is third by this measurement, although the difference with NYK BPC is only 400 Lm. Bahri is fifth, but it too is only 1,100 Lm ahead of Wallenius SOL, this latter having one of the highest averages at 4,000 Lm per ship.

### Top 10 conventional Ro/Ro operators by Lane metres

Rank	Operator	Ships	Total Lm	Ave Lm	Ave age
5	Bahri	6	21,000	3,500	9
10	Chun An	4	6,200	1,600	16
9	Eastern Car Liner	6	9,700	1,600	15
1	Grimaldi	65	268,900	4,100	12
8	Kyowa Shipping	7	11,200	1,600	13
7	Matson	3	12,000	4,000	15
2	Messina Line	8	53,200	6,700	10
4	NYK BPC	12	28,400	2,400	16
3	Transfennica	10	28,900	2,900	15
6	Wallenius SOL	5	19,900	4,000	9
<b>Top-10</b>		<b>126</b>	<b>459,400</b>	<b>3,600</b>	<b>13</b>

### Corporate and market developments

Late in 2022, the Harren Group of Germany, of which SAL Heavy Lift is also part, took full control of United States based Intermarine (4Q 2022 fleet: 21st, 15 ships @ 129,500-dwt). Harren had already taken a fifty percent stake two years earlier and less than a year after Intermarine had re-emerged as an independent entity from the failed Zeamarine venture.

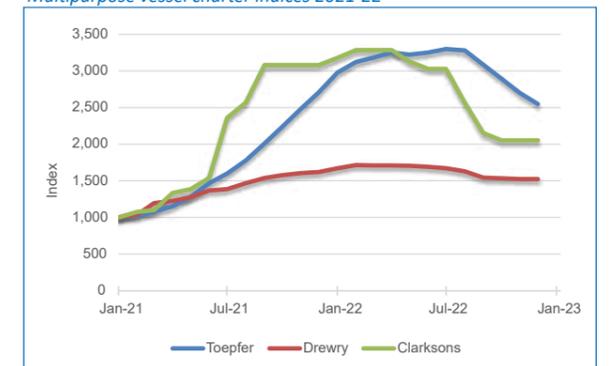
At the end of 2022, there was one notable withdrawal from the breakbulk liner sector. This was Sloman Neptun of Germany who, for more than fifty years, had operated a regular service between North Europe and North Africa. Although it usually ensured this with around three ships of 10,000 to 15,000-dwt, a drop in cargoes saw this pared back to one ship. Whilst departing the liner scene, Sloman Neptun intended to continue operating on a tramp basis.

As with container shipping, charter rates for multipurpose tonnage increased steadily during the second half of 2021, helped significantly by capacity shortages in the aforementioned container sector. This resulted in multipurpose ships being taken up by those wanting to ensure access to container shipping capacity, especially those entering the sector from outside, as either a temporary or more sustained measure.

Clearly, for multipurpose ships and based upon indices produced by Clarksons, Toepfer and Drewry, the higher charter rates endured well into 2022. Although these tended to soften from the third quarter of 2022, they still ended the year in relatively healthy states.

Taking January 2021 as the 1,000 datum, the Toepfer-based index figure averaged 3,067 in 2022 compared with 2021's figure of 1,652. For Drewry, its indexed average for 2022 came in at 1,636, this being 282 points better than the 2021 equivalent. Finally, the Clarksons 2022 average was 2,756, precisely 700 points up on the previous year.

### Multipurpose vessel charter indices 2021-22



## HEAVY-LOAD

The heavy-load sector is a composite of three sub-sectors. There is the general heavy-load sub-sector ensured by suitably capable ships deployed in support of projects and super-heavy loads. Another sub-sector is the basic open deck ship which also operates in a roll-on/roll-off mode but then direct from quayside to deck without the need for ramps. The third option is the very specialised and impressive semi-submersible type, which can carry all manner of cargoes, including substantial floating structures and other vessels.

Considering its specialist nature, there are barely fifteen carriers operating more than a few heavy-load vessels. As such, the following summary concentrates upon the ten largest, some of whom are also active in more than one of the breakbulk sub-sectors.

The largest heavy-load operator is Shanghai Zhen Hua, the in-house shipping company of crane and port machinery manufacturer, ZPMC. It runs both open deck and semi-submersible ship types and whilst being described as the “in-house” shipping arm, it carries plenty of third party cargoes too. As of the fourth quarter of 2022, Zhen Hua operated nineteen ships that averaged 48,000-dwt. This was not the highest average, but in combination with vessel numbers, it amounted to the largest by total capacity.

In second spot was Boskalis of the Netherlands. It only operates semi-submersible ships. Third was the United Group, this comprising United Heavy Lift, -Transport and -Wind Logistics, all of which operate vessels. In fact, through these, United is the only heavy-load carrier that is active in all three of the sub-segments. Cosco Shipping Specialized’s subsidiary Cosco Heavy Transport is the fourth largest, with its nine vessels, averaging over 50,000-dwt, all being semi-submersible.

The Jumbo-SAL Alliance of the separate Jumbo and SAL Heavy Lift companies has the clear advantage in vessel numbers at thirty-two, this being seven more than the United Group. However, thirty of the Jumbo-SAL fleet are the general type, with the other two being semi-submersible, and as a result, it has the lowest average per ship at just over 12,000-dwt. This is why it comes in at fifth overall. In sixth is Seaway 7, a company that is principally active in the offshore sector with installation and other vessels, these not being included here. Those that are included are six semi-submersible units. Similarly, seventh placed GPO Heavy-Lift only operates semi-submersibles, the four units it does deploy presenting the highest average capacity of 64,000-dwt.

### Top-10 Heavy Load operators by deadweight

Rank	Operator	Ships	Total dwt	Ave dwt	Ave age
8	Biglift	15	245,400	16,400	14
2	Boskalis	11	634,000	57,600	25
9	CCCC Int.	3	112,900	37,600	24
4	CoscoHT	9	452,200	50,200	9
10	Dongbang	7	106,800	15,300	12
7	GPO Heavy-Lift	4	254,300	63,600	3
5	Jumbo-SAL	32	390,600	12,200	15
6	Seaway 7	6	264,000	44,000	30
3	United Group	25	516,400	20,700	3
1	Zhen Hua	19	913,300	48,100	27
<b>Top-10</b>		<b>131</b>	<b>3,890,000</b>	<b>29,700</b>	<b>15</b>
Other operators		76	1,446,400	17,700	12
<b>Grand Total</b>		<b>207</b>	<b>5,336,300</b>	<b>25,800</b>	<b>14</b>
Share Top-10		63%	73%	-	-
Heavy-load (general)		58	794,600	13,700	12
Open deck		64	1,210,500	18,900	12
Semi-submersible		85	3,331,200	39,200	16

As per 4Q 2022. The above analysis is based on the number of heavy-load vessels operated by each carrier.

### Specialist heavy-load operators

The specialist heavy-load operators carry huge structures and modules of all kinds and are heavily influenced by the oil and gas markets. These cargoes are loaded or discharged via hoist, float-on/off, roll-on/off or skid-on/off. The segment is made up of three main kinds of ships:

- Strengthened multipurpose/project/heavy-load carriers of minimum 500 tons crane capacity
- Semi-submersible vessels: open-stern, closed-stern, dock ships, all of which can be geared and/or ramped
- Open deck ships (non-geared/non-semi-submersible), also referred to as module carriers

As far as the heavy-load fleet is concerned, a notable delivery occurred in the course of 2022. This was the 80,000-dwt semi-submersible “Hua Ruilong” built by China Merchants Heavy Industry (Jiangsu) for Guangzhou Salvage Bureau. Rather than a conventional superstructure fore, this semi-submersible heavy-load ship has four islands, with the bridge and accommodation forward on the starboard side. The deck has an area of 15,120 square metres. The vessel is commercially managed by United Heavy Transport.

### “Hua Ruilong” semi-submersible

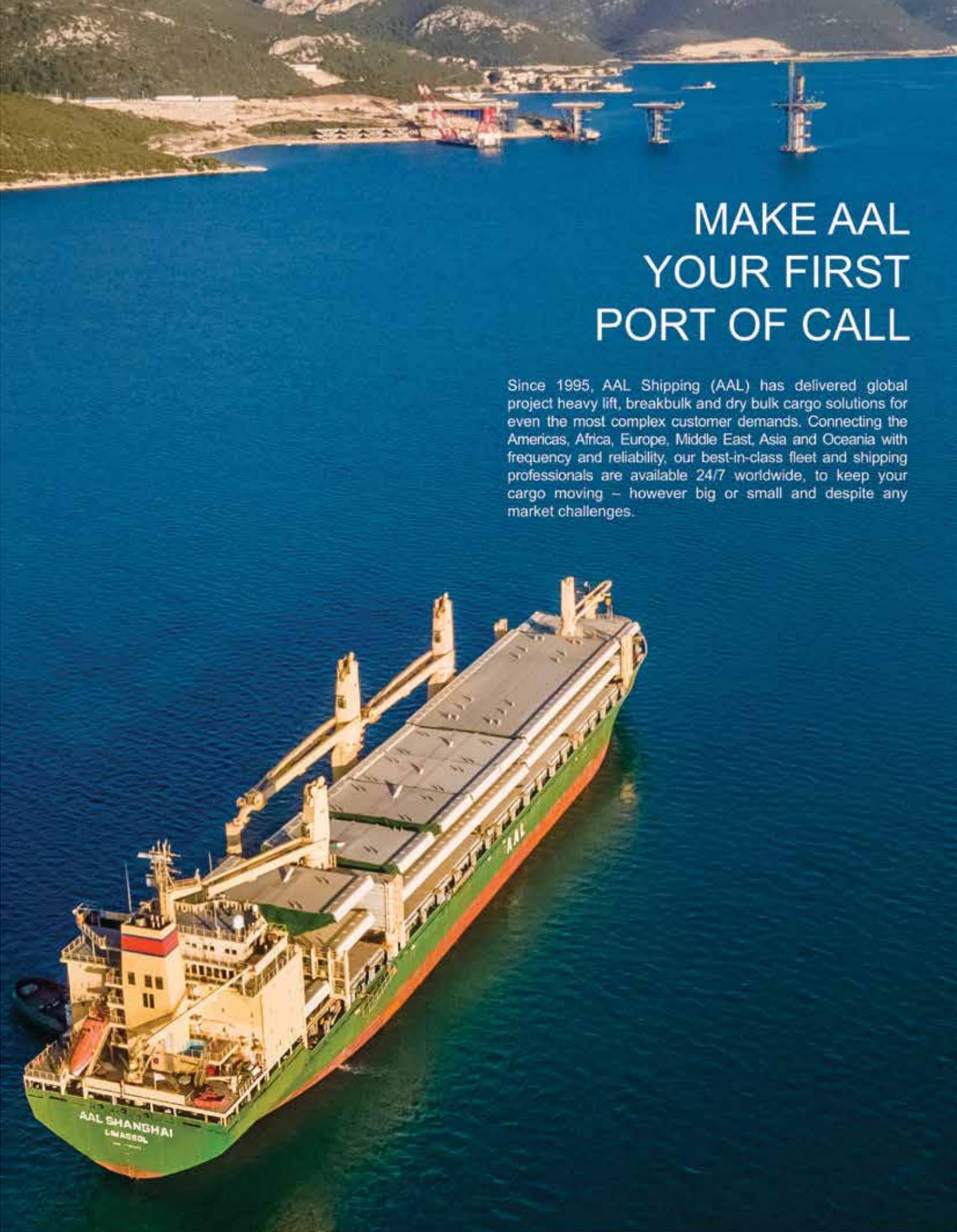


Boskalis is the operator of one of the very few other vessels with the same appearance as the “Hua Ruilong”, this being the even bigger 117,000-dwt “BOKA Vanguard”.

In mid-2022, HAL Trust, an investment company established from the money earned out of the sale of Holland America Line, launched its bid to take over Boskalis. Alongside heavy-load, Boskalis is involved in dredging, pipe laying and diving support. HAL was already the largest shareholder in the publicly-listed Boskalis with a 46.2% stake, and after a somewhat prolonged process, ended up with over ninety-eight percent of the compa-

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ny. This resulted in the delisting of Boskalis and the compulsory purchase by HAL of any remaining stock.

## VEHICLE CARRIERS

Late in 2022, the ten largest vehicle carrier operators deployed a combined fleet of 538 vessels with an aggregate deadweight capacity of some 10.3 million tons. These figures represented three-quarters of all vessels and over four-fifths of global capacity.

### Vehicle carriers

Vehicle carrier is a generic name for the various types of Car Carriers: PCC (pure car carrier), PCTC (pure car and truck carrier), and LCTC (large car and truck carrier). The latter two types also have heavy-duty angled stern ramps that can typically accommodate wheeled loads of up to around 300 tons. Along with reinforced decks below and adjustable decks above, PCTCs can carry almost any kind of cargo in addition to their core business of "cars". Typical non-car cargoes include boats and yachts, "High and Heavy", machinery and tools, mining equipment, power generation plant, railway coaches and locomotives, pallets and (big) bags. These are placed cassettes, mafi trailers, chassis and other rolling equipment. Nonetheless, cars still decide the trades vessels ply.

Wallenius Wilhelmsen, including its associates Armacup, ARRC and EUKOR, remained the clear number one carrier by deadweight and ships. Late in 2022, it operated 122 vessels and nearly 3.0 million-dwt. The second largest carrier by deadweight was still NYK Ro/Ro (84 ships and 1.6 million-dwt), despite reducing its fleet, with Glovis consolidating its position in third (78 ships, approaching 1.6 million-dwt). Japanese compatriots MOL ACE and "K" Line Global RoRo maintained their fourth and fifth spots.

### Top-10 vehicle carrier operators by deadweight

Rank	Operator	Ships	Total dwt	Ave dwt	Ave age
7	Grimaldi	21	319.8	15.2	11
6	Hoegh Auto.	33	718.1	21.8	15
3	Hyundai Glovis	78	1,560.8	20.0	12
5	K Line	67	1,193.5	17.8	13
4	MOL ACE	81	1,423.8	17.6	14
9	Neptune Lines	18	198.3	11.0	13
2	NYK	84	1,628.3	19.4	14
8	Toyofuji	21	209.4	10.0	16
10	UECC	13	160.8	12.4	14
1	Wall. Wilh.	122	2,936.9	24.1	15
<b>Top-10</b>		<b>538</b>	<b>10,349.7</b>	<b>19.2</b>	<b>13</b>
Other operators		183	2,408.0	13.2	-
<b>Grand Total</b>		<b>721</b>	<b>12,757.7</b>	<b>17.7</b>	<b>13</b>
Share Top-10		75%	81%	-	-

When looking at aggregate car equivalent unit capacities (CEU), the positions are virtually unchanged from the deadweight-based rankings, the exception being that Hyundai Glovis moves ahead of NYK, just, to second place. At an average per ship consideration, Höegh Autoliners leapfrogs into first with 7,000 CEU, this beating Wallenius Wilhelmsen and Glovis who both average 6,700 CEU. Grimaldi, "K" Line and NYK are the other carriers with average capacities of at least 6,000 CEU.

### Top-10 vehicle carrier operators by CEU

Rank	Operator	Ships	Total CEU	Ave CEU	Ave age
7	Grimaldi	21	126,800	6,000	11
6	Hoegh Auto.	33	230,100	7,000	15
2	Hyundai Glovis	78	521,500	6,700	12
5	K Line	67	404,000	6,000	13
4	MOL ACE	81	474,600	5,900	14
9	Neptune Lines	18	66,000	3,700	13
3	NYK	84	510,200	6,100	14
8	Toyofuji	21	66,300	3,200	16
10	UECC	13	48,900	3,800	14
1	Wall. Wilh.	122	821,900	6,700	15
<b>Top-10</b>		<b>538</b>	<b>3,270,400</b>	<b>6,100</b>	<b>13</b>
Other operators		183	756,900	4,100	-
<b>Grand Total</b>		<b>721</b>	<b>4,027,300</b>	<b>5,600</b>	<b>13</b>
Share Top-10		75%	81%	-	-

Early in 2023, Maersk sold around one third of its stake in Höegh Autoliners, bringing its holding down to around nineteen percent of the company. It still remained the second largest shareholder and booked around USD 80 million from the sale.

Maersk was already a shareholder when Höegh listed in December 2021, its shares closing after its first day at USD 2.64 each. The indicative price when Maersk sold this tranche in 2023 was in excess of USD 5.90 per share. Alongside the immediate financial return, the sale should also be seen within the context of Maersk's long-term strategy of disposing of assets and activities that fall outside of its core container logistics business.

## A supercharged market

The car carrier market enjoyed very good times through 2022 and well into 2023, a distinct contrast to how the container markets panned out. At the end of 2021, non-operating owner Eastern Pacific hired out two scrubber-fitted PCTCs of around 6,300 CEU for six months at around USD 38,000-40,000. These were said to be more than double their previous rates and the highest for at least a decade. Come mid-2022, that same owner did even better when it chartered out a 6,200 CEU vessel (built 2015) to Nissan Motor Car Carrier for USD 100,000 per day for ninety days.

Whilst high rates could be expected for short(er) term charters as those above, they were also sustained for much longer hires. According to Gram Car Carriers, for generic one year charters, rates had indeed gone well past USD 100,000/day. Going even longer, Gram managed to renew charters for three 6,700 CEU vessels that were due to end in the first quarter of 2023 from their previous rates of USD 16,000-18,000 per day to USD 60,000-65,000, these renewals lasting into 2028.

The reason for this heightened activity is that vessel supply is very tight, the result of owners and operators trimming their fleets in the latter half of the 2010s and into the early 2020s. That activity has now been replaced by a comparative rush on ordering and has seen a number of vehicle manufacturers also developing or expanding their own transportation capability.

One of those is Chinese car maker DYB who ordered two vessels of 7,000 CEU and a further six of 9,400 CEU in 2022. Early in 2023, Anhui Provincial Shipping and Ports Group and manufacturers Chery and JAC established Anhui Hangrui International Ro-Ro Company. Within a couple of months, it had launched its first service, this between China and Mexico. The new company also had a reported orderbook of seven ships of 8,900 CEU due for delivery in 2025 and 2026. These were being built by Wuhu Shipyard, which is owned by Chery.

Some parties chose to come together to form new companies. SAIC Anji Logistics, itself the shipping and logistics arm of manufacturer Shanghai Automotive, plus Cosco Shipping Specialized Carriers and SIPG Logistics, established a new car carrier

joint venture in 2022. This will concentrate upon Chinese car exports, initially using tonnage chartered-in from Cosco, before expanding its service scope and own fleet.

### Rolling cargoes via Lo/Lo

With the availability of rolling capacity being so tight, Cosco Shipping Specialized Carriers launched a rolling cargo service via lift-on/lift-off vessels in 2022. This was in support of heavy vehicles manufactured by FAW Trucks of China. The first shipment featured nearly 470 units of mining trucks, tankers and tractors delivered to South Africa.

Alongside Chinese car manufacturers wanting to enter the shipping sector, container liner major CMA CGM is doing so as well. In 2022, it acquired vehicles logistics company Gefco, which was absorbed into CMA CGM unit CEVA Logistics as the finished vehicles logistics division. In the first half of 2023, it was announced that CMA CGM was to charter-in four 7,000 CEU newbuild ships from Eastern Pacific upon their deliveries from end-2023 and into 2024. These will actually be commercially operated by CEVA's new division.

Another container carrier that was reported to be looking at investing in the sector was HMM of South Korea with orders said to have been placed for a series of three ships of 8,600 CEU. Upon delivery in 2024 and 2025, these will be chartered-out to compatriot Hyundai Glovis. When it was still known as Hyundai Merchant Marine, HMM had to sell off its profitable car carrier business in the 1990s as it was struggling with financial issues.

Come the second quarter of 2023, Lloyds List reported that the on-order fleet of vehicle carriers was 138 ships totalling 1.0 million CEU. Based upon the accompanying table, the identified orders placed in 2022 approximated to 37-38% of all ships and capacity on order.

### Vehicle carrier orders in 2022 included

Owner	#	CEU	Remarks
BYD**	2	7,000	LNG/dual fuel; deliveries 2025
BYD**	6	9,400	LNG/dual fuel
CMB FL*	6	7,500	LNG/dual fuel; deliveries 2024-25
Grimaldi	5	9,000	Ammonia/dual fuel; deliveries 2025-26
H-Line*	3	8,600	LNG/dual fuel; deliveries 2024-25
H-Line*	2	7,000	-
HMM*	3	8,600	LNG/dual fuel; deliveries 2024-25
Hoegh Autoliners	8	9,100	LNG-amm/meth ready; deliveries 2024-25
MOL	4	7,000	LNG/dual fuel; deliveries 2024-25
Ray Car Carriers	4	7,500	LNG/dual fuel; USD deliveries 2024-25
Ray Car Carriers	2	7,000	LNG/dual fuel; deliveries 2024-25
Sallaum Lines	2	7,500	LNG/dual fuel; deliveries 2025

Orders only, no letters of intent or similar, or options. Includes consolidation of separate orders. \*Non-operating owners; \*\*Car manufacturer

Despite this ordering activity, considering the slow rate of deliveries, and if demand stays constant, then there could still be a capacity shortfall of more than twenty vessels come 2026, according to Gram Car Carriers. Further, any emissions mitigation measures such as reducing sailing speeds, will only increase the shortfall by both ships and length of time.

Reducing sailing speed is a reasonable hypothesis because the historical lack of continuous investment in new vessels means that until this current orderbook is emptied, there will still be lots of older vehicle carriers sailing with poor carbon intensity index ratings (CII). This is now (2023) a calculation that has to be applied to all vessels, and one way to improve the CII is slow steaming.

Vehicle carrier ordering continued well into 2023 with those noted in the first three/four months including Grimaldi (5x 9,000 CEU); SAIC Anji (7x 8,900 CEU); Guangzhou Ocean Carriers (3x 7,000 CEU) and H-Line Shipping (2x 8,600 CEU). However, if there is one possible concern with all this activity, both in 2023 and before, is that the vast majority of orders are for the largest capacity segments, i.e. 6,000 CEU and above. Smaller

vessels are conspicuous for their absence and could point to availability issues later down the line for regional or less voluminous routes.

## Vessel casualties

Early in 2022, fire broke out on MOL's 6,400 CEU "Felicity Ace" when sailing near the Azores (Atlantic Ocean). The ship was carrying a costly cargo of 4,000 cars, including 1,100 Porsches and 189 Bentleys. The presence of lithium-ion batteries made firefighting operations all that more challenging and the ship ultimately sank around a fortnight later in March.

Around a year after the "Felicity Ace", the "Ah Shin" (21,500-dwt) caught fire off southern Vietnam en route Singapore from South Korea. Said to be carrying around 4,300 cars at the time, the fire initially affected decks 8 through 10, with help from outside hampered by rough seas. Three days were needed before it was safe enough for others not involved in the firefighting operation to board. The vessel had already been diverted to nearby Vung Tau and subsequently stayed there for nearly two months.

Although the cause of the "Ah Shin" fire was not confirmed, the suspicion lay with lithium batteries. It was later reported that MOL, operator of the "Felicity Ace" had stopped accepting bookings for second hand electric cars fitted with such batteries.

The increasing demand for electric vehicles would appear to be the major driver behind the number of fire incidents on board vehicle carriers. Aside from the mathematics involved of more electric vehicles being moved, the increased demand has seen cheaper and poorer quality engines that may also not have been subject to the same rigorous tests as others. Accompanying this, the increased use of e-commerce freight booking platforms has also led to a lack of oversight and scrutiny of cargoes.

### Notable historical vehicle carrier casualties have included

Vessel	Month	CEU	Incident
Ah Shin	Feb-23	6,000	Suffered fire across multiple decks whilst sailing off southern Vietnam carrying 4,300 cars. Diverted to Vung Tau where it stayed for nearly two months
Felicity Ace	Feb-22	6,400	Caught fire near the Azores (Atlantic) carrying 4,000 cars including luxury marques
Byakko	May-21	-	6,800-dwt vehicle carrier collided with chemical carrier off Imabari, Japan, and subsequently sank, with three souls reported missing
Hoegh Xiamen	Jun-20	4,900	Caught fire whilst at berth in Jacksonville due to improperly connected battery in 2nd hand vehicle. Firefighters required eight days to douse the blaze; vessel later declared total constructive loss.
Polaris Highway	Jun-20	7,600	Vehicle on board caught fire whilst alongside in Zeebrugge. Fire extinguished and vehicle removed
Sincerity Ace	Jan-19	6,400	Caught fire whilst sailing from Japan to United States. Vessel evacuated
Grande America	Mar-19	-n/a-	Container-Ro/Ro with cars on board. Fire started in container (believed), but vessel listed and sank as result of free surface water effect and cargo shift
Platinum Ray	May-19	6,200	Caught fire whilst at berth in Ulsan. Some 2,150 vehicles on board
Grande Europa	May-19	4,600	Caught fire off coast of Spain, loaded with close to 1,850 vehicles
Diamond Highway	Jun-19	6,400	Caught fire in West Philippine Sea. Vessel abandoned
Golden Ray	Sep-19	7,700	Capsized, coming to rest on its side in St. Simon Sound, Brunswick. Vessel dismantled in situ, the operation finishing late in 2021
Auto Banner	May-18	5,700	Fire started by started overheating vehicle whilst at Inchon. Vessel declared total constructive loss

**REEFER**

Late in 2022, the world fleet of conventional reefer ships larger than 100,000 cubic feet numbered 528 units. This was a reduction of twenty from the year before. The trends for both vessels and capacity have been downwards for a number of years now. The combined capacity of this fleet approached 3.9 million-dwt.

The ten biggest carriers provided 185 vessels, which was equivalent to thirty-five percent of the global fleet, improvements of nine ships and three points respectively.

The largest carrier continued to be Baltic Shipping/Cool Carriers, followed again by the Seatrade Reefer Pool. Baltic Shipping employed a fleet of forty-one ships with a total capacity of 515,000-dwt whilst Seatrade operated twenty-five totalling 318,000-dwt.

Frigoship, with thirty-three ships and 265,000-dwt, was the third largest, only just ahead of GreenSea, despite that latter carrier operating three ships more. Fresh Carriers, with fifteen ships, was a somewhat removed fifth.

*Top-10 conventional reefer operators by deadweight*

Rank	Operator	Ships	Total dwt	Ave dwt	Age
6	Africa Express Line	10	145,000	14,500	16
1	Baltic Shipping	41	514,900	12,600	25
8	Boyang	13	77,000	5,900	24
7	Cosiarma	5	80,700	16,100	19
5	Fresh Carriers	15	156,600	10,400	16
3	Frigoship	33	264,900	8,000	28
9	Geest Line	5	74,600	14,900	19
10	Great White Fleet	3	69,100	23,000	3
4	GreenSea	35	240,400	6,900	25
2	Seatrade	25	318,000	12,700	28
<b>Top-10</b>		<b>185</b>	<b>1,941,200</b>	<b>10,500</b>	<b>20</b>
Other operators		343	1,945,100	5,700	27
<b>Grand Total</b>		<b>528</b>	<b>3,886,300</b>	<b>7,400</b>	<b>29</b>
Share Top-10		35%	50%	-	-

By reefer cargo capacity, the 10 largest operators controlled more than 88.1 million cubic feet from a global total of 172.8

million cubic feet. Those top carriers operated ships averaging 476,000 cubic feet, which was nearly one-and-a-half times the capacity of the global average.

The carrier ranking by cubic feet was largely unchanged. Boyang moving up one spot to seventh and thereby displacing Cosiarma to eighth was the only difference from deadweight based ranking. When considering average capacities, Great White Fleet's three ships of 905,000 cu.ft. were the biggest and some way ahead of Cosiarma's five ships of 639,000 cu.ft. Geest Line and Africa Express Line were the other operators with ships in excess of 600,000 cubic feet on average. All of those mentioned operated on (near) container liner like principles.

*Top-10 conventional reefer operators by cu.ft.*

Rank	Operator	Ships	Total cu.ft	Ave cu.ft	Age
6	Africa Express Line	10	6,029,800	603,000	16
1	Baltic Shipping	41	24,184,500	589,900	25
7	Boyang	13	3,206,000	246,600	24
8	Cosiarma	5	3,194,700	638,900	19
5	Fresh Carriers	15	7,882,200	525,500	16
3	Frigoship	33	12,582,900	381,300	28
9	Geest Line	5	3,091,300	618,300	19
10	Great White Fleet	3	2,713,800	904,600	3
4	GreenSea	35	10,785,500	308,200	25
2	Seatrade	25	14,469,000	578,800	28
<b>Top-10</b>		<b>185</b>	<b>88,139,700</b>	<b>476,400</b>	<b>20</b>
Other operators		343	84,635,200	246,700	27
<b>Grand Total</b>		<b>528</b>	<b>172,774,900</b>	<b>327,200</b>	<b>29</b>
Share Top-10		35%	51%	-	-

All figures in cu.ft. x 1,000

Baltic Reefers/Cool Carriers is expected to introduce fourteen to sixteen newbuildings by 2027. This is based upon orders for two ships of 905,000 cu.ft. expected for delivery in 2025, and the plan to order a further twelve/fourteen ships in the 630,000-700,000 cu.ft. range. If coming about, it will be the largest newbuilding programme since that of Star Reefers, when, over the 2006-10 period, it received twelve ships totalling 6.5 million cu.ft.

There are also orders for six ships of 12,600-dwt. It is believed that four of those could be intended for Africa Express Lines.



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## ...AND FINALLY - AN AGE OF TRANSITIONS

### LOOKING BACK ...

It could be argued that 2021 heralded the death throes of the "old normal". If this is indeed the case, what a way to go, it creating the conditions for records of all sorts: revenues, profits, cargo volumes, charter rates, vessel sales, vessel ordering, new-build prices and (re)sale prices amongst, undoubtedly, others.

Such a market provided plenty of champagne and the occasional supernova, yet it was clearly unsustainable and perhaps artificially inflated by the peculiarities of the specific demand/supply equation that spawned it. In reality, this period of champagne and supernovas straddled two calendar years. It spent the first six months of 2021 working up to reach its highest and brightest intensity, something it managed to sustain for the next twelve months, before, by and large, carefully diminishing. It is by no means fully extinguished and, writing now in mid-2023, still very far from being a black hole that sucks all the life and hope of financial returns out of the sector.

For all the superlatives laid upon 2021, 2022 actually came out much better. And rather than returning to the "old normal", nothing better epitomises the changes taking place than the coronation at the start of 2022 of a new largest carrier in MSC. Are we really no longer in the age of the "Big Blue" Maersk when, if it sniffed, the sector caught a cold?

Not unrelated, is the announced dissolution, to come in 2025, of MSC and Maersk's 2M vessel sharing agreement. This is the largest co-operative commercial partnership of all. Whilst the end games strategies of these two are still to be played out, they, and many of their peers, are taking the opportunities provided by bumper profits to (continue) expanding capabilities way outside of merely sailing ships.

Having already evolved legs (well, wheels) through their own landside logistics operations, more shipping lines -of course Maersk was there already- have now developed wings by moving into air operations. One, CMA CGM, has even moved into the press, multi-media and entertainment. And all around, existing logistical capabilities have been added to with multiple investments. The biggest carriers are now clearly more than just shipping companies.

Yet returning to the nuts and bolts end of their businesses, the ships, these are also exciting times. For all the distractions into logistics, terminals and media, we are still talking about shipping. Shipowners and operators have started investing heavily in a variety of alternative fuel options with LNG and methanol now making up substantial portions of the orderbook.

There is now a sense of real momentum in the still nascent introduction of autonomous shipping and artificial intelligence in (container) ship navigation and operations. There are multiple plans, orders, trials and now even commercial operations of such vessels. Admittedly there are still crew on board, but these first steps are working up towards the nirvana of fully autonomous modes.

The voyage to ascend to this state of being will encounter many obstacles. Yet if any of these fuel or autonomous innovations reach even grudging acceptance and adoption, and with due deference to potential regulatory requirements, then the (container) shipping world will be in a very different place within a relatively short period of time, perhaps the end of this current decade.

Together with other evolutions, maybe we are visibly transitioning from what was the "old normal" to what could become the "new(er) normal". It is more than moving from analogue to digital. We could be witnessing a reboot of a whole way of doing things. But first, we need to tackle the immediate future, i.e. what remains of 2023 and how that will, by implication, set up 2024.

### ... AND LOOKING FORWARD

#### Overview

In general, the negative momentum that has built up in the second half of 2022 will continue. It is important though to distinguish between the absolute values (TEU, USD) and relative changes (%) be they month-to-month or year-on-year. Whilst there will still be downwards pressure on absolute values, relatively speaking the changes will no longer be as great. This will be much more evident in the second half of 2023 as it starts looking back at when the absolute weakness started becoming apparent in 2022.

However, even relatively minor softening of cargoes and freight rates are still reductions, and this is what the shipping lines will have to contend with. To help with that the adjustment, charter rates and bunkers will also need to contract, ideally more acutely.

In looking over the short term, Dynamar has considered the following hypothetical scenarios for the rest of 2023, each covering the key components of this review.

#### Scenarios

##### Cargoes



Arguably the most important of all considerations, cargoes are certainly a prime driver of how the carriers and observers judge the health of the container shipping market. The signs of comparative weakness apparent from the midpoint of 2022 have continued on well into 2023. Whilst the reductions will slow down and may eventually show modest signs of relative improvement later in the year, cargoes will be still be down at both relative (%) and absolute (TEU) levels for the whole twelve months.

Inflationary pressures on the main consumer markets will remain and there will still be uncertainties and disruption to global trade arising from the Ukraine/Russia conflict -however that develops- and from other disasters, be these natural or man-made. These, unlike Ukraine/Russia and if or when they occur, will be acute and perhaps more localised, yet still with the potential for impacts to be ripple along the entire supply chain. However, shipping has proven itself adept at adjusting to disruptions, but such flexibility may require a parallel adjustment of expectations the longer they go on. Even so, the cargoes will still move.

##### Dynamar projection of worldwide full container trade

Year	TEU	Growth y-o-y	CAGR 5-yr	CAGR 10-yr
2025	182,000,000	3.4%	-0.2%	1.5%
2024	176,000,000	3.5%	0.4%	1.4%
2023	170,000,000	-2.9%	-1.1%	1.2%
2022	175,100,000	-4.5%	0.3%	2.3%

##### Shipping capacity



This is not difficult to predict as capacity always increases. With a looming orderbook which, at the end of 2022 was equivalent to twenty-eight percent of the contemporary operational fleet, the only real question is how quickly this will come online? Approaching 390 vessels bringing around 2.6 million TEU in capacity is due to be delivered in 2023. This is just over one third of the year-start orderbook. Even if scrapping reaches the previous decade average of 279,000 TEU, the global container shipping fleet could grow, in theory, to more than 28.5 million TEU, an annual increase of eight percent. Delivery of some ships might be delayed if some owners start struggling, but such incidences are not likely to impact capacity growth by anything significant.

##### Rates



With positive shipping capacity development far outstripping negative cargo development, then freight rates should suffer. They have indeed been coming down since mid-2022 and, depending upon whichever measurement is taken, at differing degrees of severity. They will start to settle down rather than collapse, especially if capacity continues to come online at a much faster rate than is removed from the fleet.

Yet much like supply-chains have demonstrated adeptness in times of challenge, so container liner carriers have shown, especially in the last three years, an ability to manage capacity of the deployed fleet. This will become more difficult as the new ships keep arriving. And with cargo levels so low, it is unlikely there will be the chronic congestion -which also eats up capacity- like that seen at key seaboard along the United States in 2022 (and 2021).

There could be some mitigation from measures as slow steaming. This absorbs capacity as more ships are required to maintain the same levels of service frequency. It also helps with managing the Carbon Intensity Indicator requirement, something introduced at the start of 2023, and which will become stricter in the coming years alike other measures aimed at decarbonisation.

Another capacity management tool for the carriers is a graduated increase of vessel lay-up and returning chartered-in ships to owners. Do not be surprised to see increases in these practises, but nothing like the knee-jerk and extensive levels post-2008.

##### Bunker costs



Bunker costs may well continue to fall but should eventually settle, if they have not done so already. Those countries whose energy supplies were severely affected by the Ukraine/Russia crisis have, by and large, managed to find sufficient alternatives. These are now established, contributing to a reduction in, not eradication of inflation. However, the jack-in-the-box is OPEC and it has shown it is not averse to cutting production to inflate the price of crude oil which, ultimately, filters through to the cost of bunkers. The alternative fuel source of LNG, however transient it might be as a decarbonisation method, will continue to grow as more newbuilds running on this fuel come online. If matched with increased LNG availability, the marginal costs associated with establishing a supply-chain infrastructure will continue to reduce noticeably.

##### Charter rates



The year 2023 could be a very difficult one for the non-operating owner. Having enjoyed boom times in 2021 and 2022, rates will be very much down for the whole of 2023, gentle fluctuations up or down notwithstanding. There is only so much that can be achieved with an immense overhang of impending capacity scheduled for delivery. Slow-steaming might help -scrapping will not- and although there is unlikely to be a substantial increase in the number of ships available for charter, it is questionable whether they would be rehired at higher rates.

##### Another cost: vessel newbuilds

Whilst more of a strategic than operational (day-to-day) cost, new vessel prices firmed and, intriguingly, actually rose towards mid-2023. This may well have been the result of a combination of factors including an increase of costs at the shipyards, the still tight availability of yard slots, and a resilient demand for newbuilds given that much of the tonnage previously available for hire had been bought up by carriers (first half 2023 charter rates also followed a similar pattern as those for newbuilds).

##### Carrier results



First the good news. The overall result at a global level will still be positive. It will, though, be drastically down on what was seen in 2022 (and 2021) and is likely to be concentrated among the larger if not largest carriers, many of whom have spent their time buying up other assets and capabilities to increase their logistics service offering and perhaps spread some risk. Ultimately -and the situation is far from requiring it- there is always the option to sell these assets should the financial situation be particularly dire. A lot will depend upon a carrier's business model and its operations. Some smaller yet still significant ones have already reported losses come the first quarter of 2023. Maybe adjustments, or transitions, already need to be made.

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