Sponsored by International Tank Container Organisation

Shanghai Maritime University, China

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GLOBAL TANK CONTAINER SURVEY

- Global Tank Container Survey
- Detailed Split by Tank Container Operators and Leasing Companies
- Analysis of Newly Manufactured Tank Containers
- Historic Development of the Global Tank Container Fleet

Contents

INTRODUCTION

- **ITCO 2019 Survey reveals industry growth of 10.8% in 2018**

- **Global Tank Container Fleet reaches 604,700**

The global tank container business continued to grow in 2018, with a record number of new tank containers being manufactured – and many operators and leasing companies increasing the size of their fleets.

There are a number of reasons for this growth. The trend continues to successfully convert certain cargoes - which were previously shipped in drums or transported in chemical tankers – to tank containers.

In addition, China has seen a significant growth in the use of tank containers for domestic transport of bulk liquids.

This has resulted in high levels of demand for the services of ITCO Members – in all sectors of the industry – reflected in higher equipment demand and utilisation.

This year's ITCO Tank Container Fleet Survey again reports a record growth in the tank container business during the past 12 months, with one high-volume new manufacturer in China entering the market.

According to the ***2019 ITCO Global Tank Container Survey***, the worldwide tank container fleet grew by almost 11 percent in 2018 over 2017.

This year's Survey estimates that, at 1 January 2019, the global tank container fleet stood at 604,700 units worldwide, compared to the figure of 552,000 on 1 January 2018.

This represents a year-on-year growth of 10.81%, compared to the growth the previous year (8.66%).

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The number of tank containers produced last year also showed a significant increase. In 2018, a total of 59,700 tank containers were built, compared to 48,500 in 2017, an increase of more than 11,000 units over the previous year.

As in previous Editions, this Survey analyses the growth in the world's tank container fleet and the development of production of tank containers on a year-by-year basis.

It shows how, numerically, the industry continues to be dominated on a global level by a relatively small number of major tank container operators and leasing companies.

The top 10 operators account for over 225,000 tanks representing nearly 60% of the global operators' fleet. The top 10 leasing companies account for 227,000 tanks, about 82% of the total leasing fleet. The top three leasing companies account for 150,000 tanks, almost 55% of the total fleet.

An on-going trend is that the growth in the demand for tank containers globally has enabled smaller players to enter the market - usually offering niche products or working in a regional market.

Companies operating or leasing tank container fleets of over 1000 units are listed in this Survey. Companies with tank container fleets of less than 1000 units have not been named individually, but an "educated estimate" has been made for the combined fleets.

The International Tank Container Organisation would like to take this opportunity to thank the various companies who have contributed to this study. Your input and information, statistics and ideas are very much appreciated.

The Global Tank Container Fleet at the beginning of 2019 – An Overview

Table 1: Global Tank Container Fleet (1 January 2019)

Number of Operators Worldwide	212
Total Number of Operator Tanks (Owned & Leased -in)	**381,750**
Number of Tank Lessors Worldwide	35
Total Number of Leasing Company Tank Containers	**286,000**
On lease to Operators/Shippers/Others	**243,200**
Idle* (Calculated at 15%)	**42,785**
Shippers and Others*****	
Total (Owned and leased)	**180.165**
Estimated Manufacture	59,700
Disposals*****	7,000
Estimated Total Global Tank Containers ***(Operator Fleets + Lessors "idle tanks" + Shippers/Others Tanks)***	**604,700**

Table 1 shows the estimated global number of tanks by industry sector.

- The total operator and leasing fleet is based on the industry response to the Survey and other research.
- The leasing fleet is accounted within both the operator and also the shipper fleets, except for those tanks which are "idle". (Definition of "idle tanks" on next column)
- "Shipper" and "others" fleet is estimated in accordance with the methodology detailed at the end of this Survey.
- The Survey indicates that there were 604,700 units at the beginning of 2019 including annual manufacture in 2018 of 59,700.
- Taking into account an estimated 7,000 disposals (scrapped or sold for static storage), the 1 January 2018 fleet size of 552,000 therefore grew to 604,700 at the beginning of 2019.
- This represents a growth of 10.81% from 1 January 2018 to 1 January 2019.

Notes:

* **Idle Tanks**

- Tanks might be idle because they are in the process of preparation such as maintenance and testing or in the process of being repositioned to a demand area or remaining as new manufacture stocks.
- This normally represents about 10-15% of the leasing company fleet, but in the current economic climate, we have estimated the figure of idle tanks to be in the region of 15-18% of the leased fleet, so it has been calculated 15%.

****Shipper (also called producers or consignors) fleet**

- The Shipper Fleet comprises tanks operated by chemical or food and drinks companies.
- These tanks are mostly special tanks manufactured or modified to meet a specific need and include tanks designed to transport liquefied and refrigerated gases.

***** Others**

- "Others" (ie Other Tank Users) include the many tanks operated by organisations such as military, shipping and barge lines, rail, oil and mining industries, China domestic and companies that use tanks for storage or special transport operations such as bitumen.
- Some of the tanks disposed from operator and lessor fleets might be modified and utilised within this category.

****** Disposals**

- Tank containers are normally depreciated over a residual life of 20 years but often remain in service for a longer period.
- The service life of the tank has in the past been extended by remanufacture (refurbishment), but with the price of new tanks at current levels, this is not currently viable.
- Owners might dispose of tank containers for commercial and technical reasons. These might be converted into other uses, such as storage.
- Some tanks are sold for re-cycling as scrap metal, especially if the tank is seriously damaged beyond economic repair.
- Scrap might be a viable economic option when the commercial price of scrap stainless steel rises.
- A nominal figure of 7,000 has been included in the survey, as precise data is difficult to research.
- This figure is likely to increase in future years, reflecting the economics of the comparative reduced price of new manufacture versus the increased cost to repair older tanks.

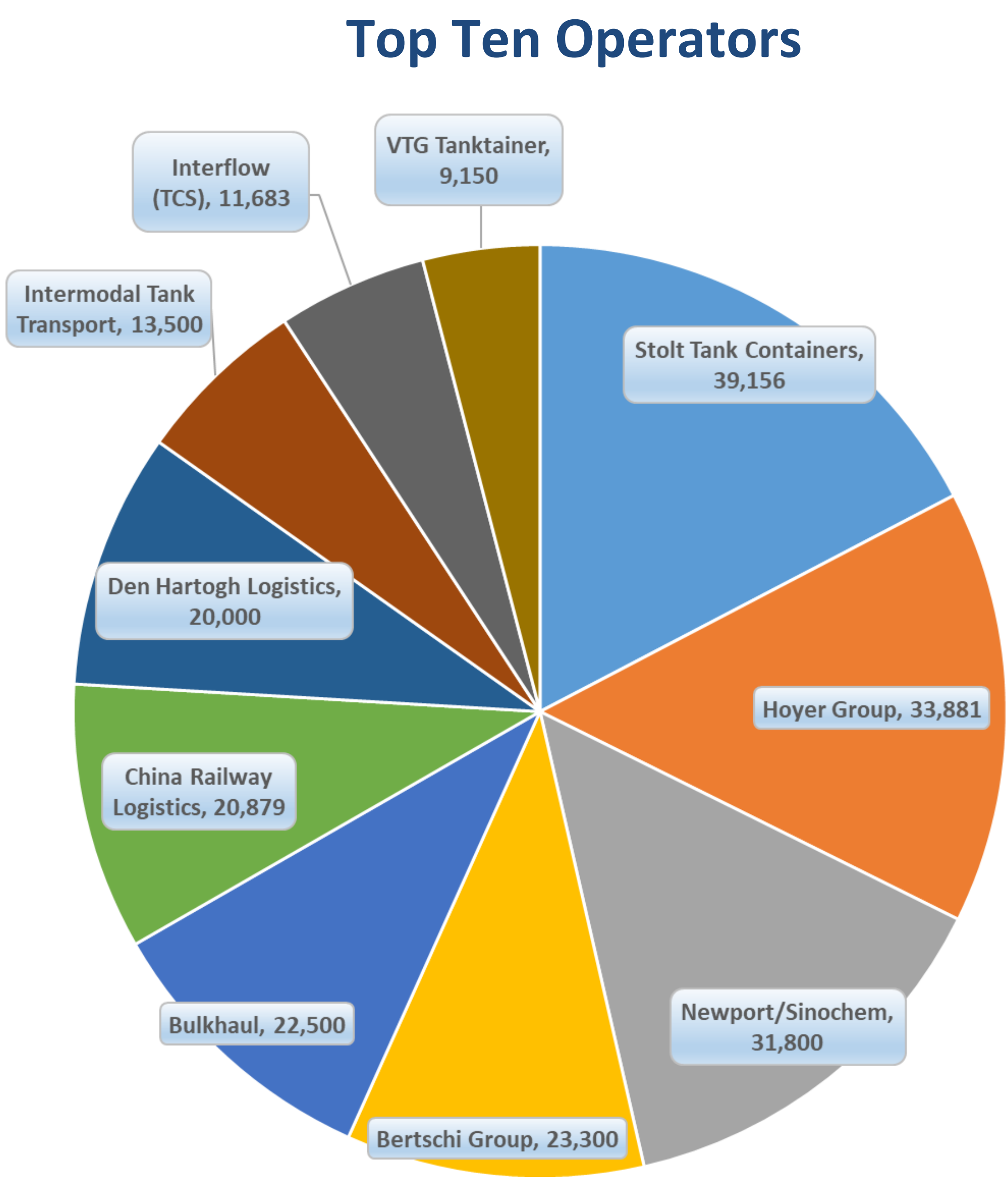


Figure 1: Top Ten Tank Container Operators (at 1 January 2019)

There are 212 operators covered within this Survey.

Shown by Figure 1, the top ten operators account for over 226,000 tanks representing over 59.2% of the global operators' fleet.

Top Ten Leasing Companies

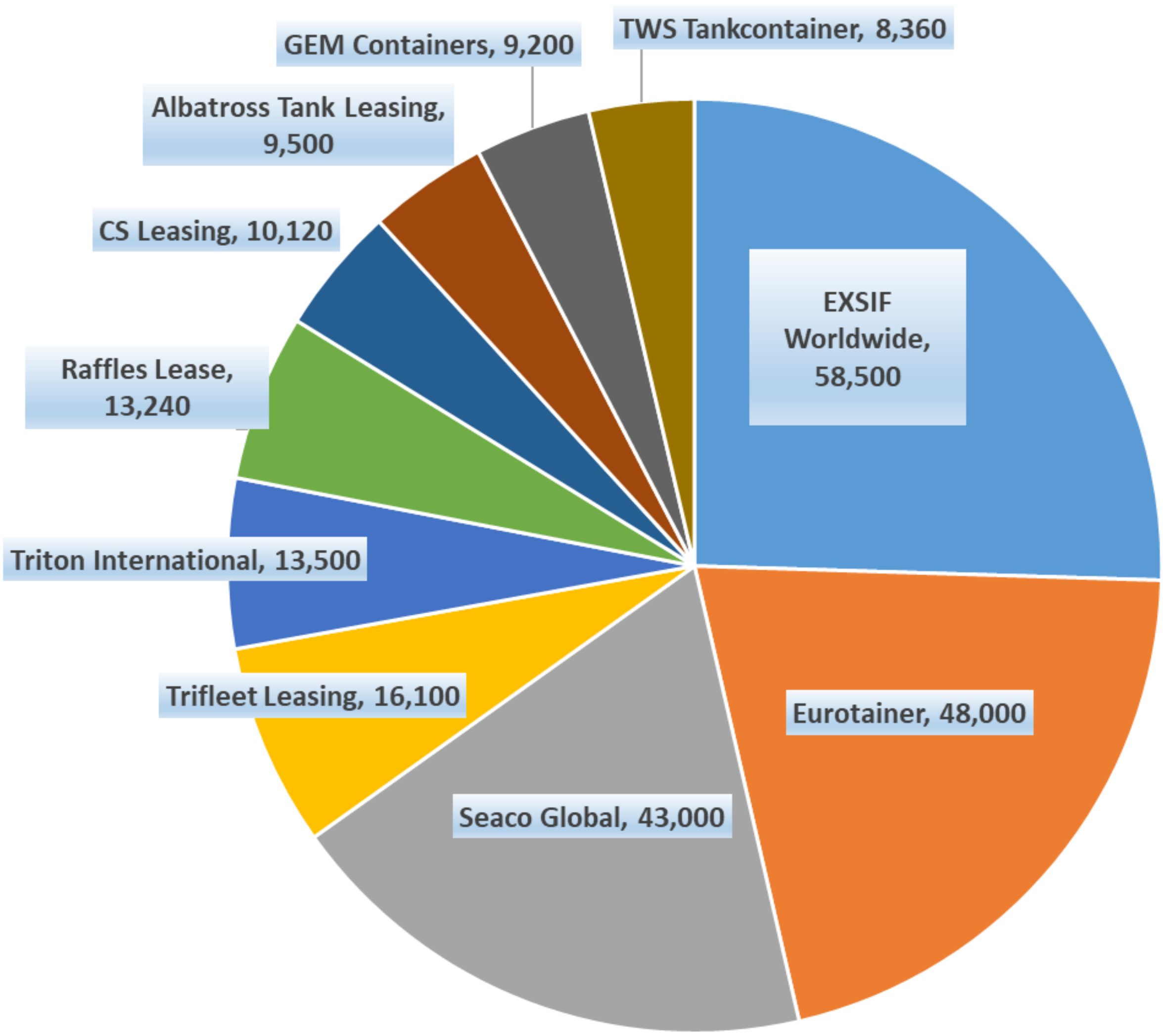


Figure 2: Top Ten Tank Container Leasing Companies (at 1 Jan 2019)

There are 36 leasing companies identified within the Survey representing over 285,000 tanks. The top ten lessors account for 227,500 tanks, about 82.0% of the total leasing fleet. The top three companies account for 149,500 tanks of the total fleet, or 54.0%, compared with 54.3% last year.

Top Tank Container Manufacturers

- In 2018, the combined number of tank containers produced by all of the world's manufacturers totalled 59,700 new units.

- Tank Container manufacturing is concentrated in China. The only other large volume manufacturer based in South Africa

- The leading Tank Container Manufacturers producing the highest number of tanks are as follows: CIMC, NT Tank, Welfit Oddy, Singamas, CRRC and CXIC. These top six represent 91% of global manufacture.

- The majority of production is of the industry standard tank range but nevertheless there is a very active and growing specialised tank sector.

- New Tank Container production came on on-stream in China and Eastern Europe in 2018, and this production capacity is expected to increase in 2019.

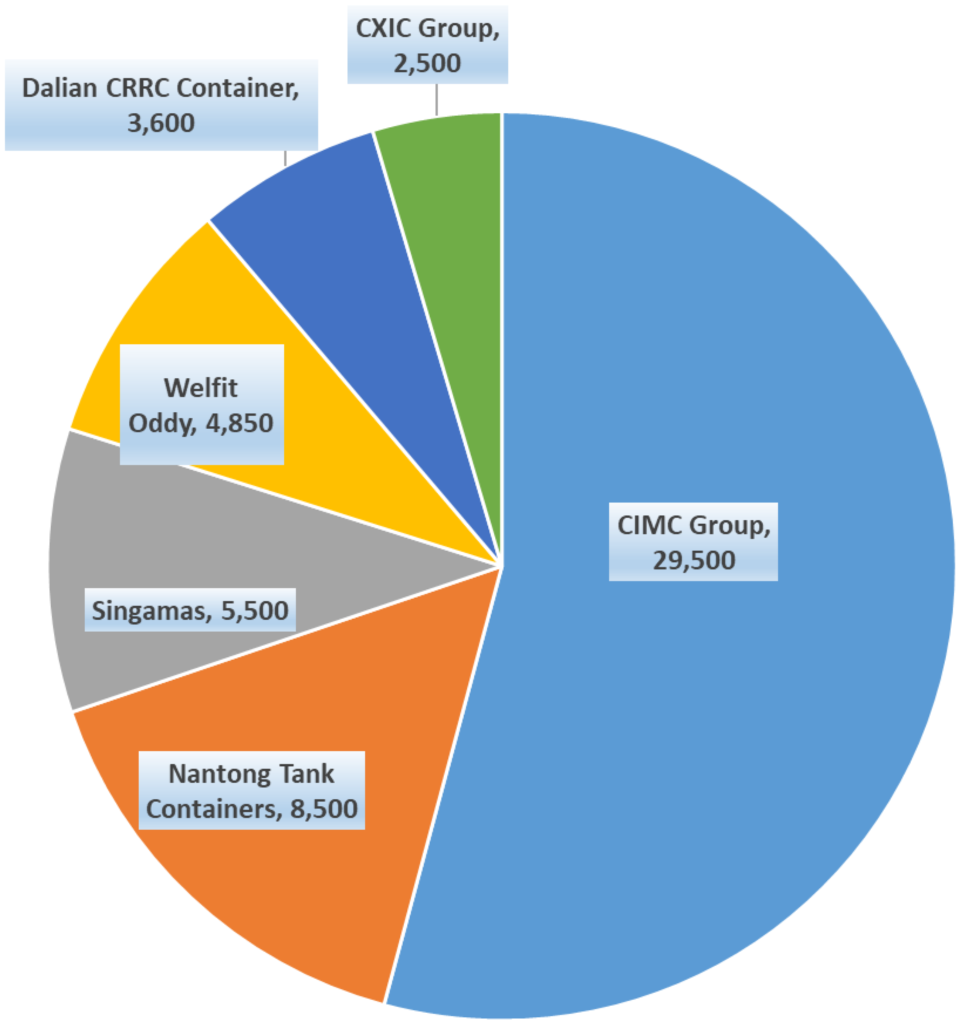


Figure 3: Global tank container production in 2018

Table 2: Annual Global Tank Container Growth (1 Jan 2013 - 1 Jan 2018)

Players/Tank Type \ Year	2019	2018	2017	2016	2015	2014	2013
Operators - Number	**212**	**210**	**209**	**205**	**194**	**176**	**116**
Total Fleet (Owned and leased-in)	381,750	365,000	342,500	329,080	305,700	265,550	228,460
Leasing Companies - Number	**35**	**36**	**36**	**36**	**33**	**34**	**27**
"Idle" Leasing Company Tanks	42,785	32,000	28,500	20,175	23,400	17,650	15,000
On-lease to Operators, Shippers, Others	243,200	213,000	186,765	181,575	171,600	158,850	135,400
Total	286,000	245,000	215,265	201,750	195,000	176,500	150,400
Shipper & Others (Military, Offshore, etc)							
Total (Owned and Leased)	180,165	155,000	137,400	110,950	107,460	103,000	94,800
Manufactured	59,700	48,500	44,500	43,780	48,200	42,620	39,700
Disposal*	7000	4500	4500	2,000	5,000	1,000	-
Grand Total	604,700	552,000	508,000	458,200	427,560	385,200	338,260
Growth % compared with preceding year**	10.81	8.66	8.5	7.16	10.99	13.87	n/a

Notes:
* Figures for disposals are not easily verified due to the difficulty in estimating since respondents tend to not reveal details of their fleets. Disposals result from repair costs exceeding the economic value of the tank and or the age profile required by some users. Prevailing low material prices, exchange rates and interest rates lowered the cost of the new tank. This reflects on the decision whether a heavily damaged unit is economic to repair or remanufacture. Some disposals are purchased by others and modified for continued use outside of mainstream sector and perhaps accounted in this Survey in the "others" category.

**Percentage growth is reported showing the growth for the year compared with the preceding Survey.

Table 2 summaries ITCO Surveys completed since 2013. The estimated 2018 growth, compared with 2017 is about 10.81%. Shipper owned fleets are not considered to be growing, due to the trend to outsource logistics to operators. The 2014 and 2015 shipper & others owned fleet has been adjusted, to reflect a static position, but the leased part of the fleet shows a percentage increase in line with the methodology.

Table 3: Tank Container Production and World Fleet (1991 – 2019)

Year	Production	Fleet at 1 January (of year shown)
1991	6,500	
1992	8,000	67,000
1993	9,000	73,000
1994	11,000	81,000
1995	12,500	88,800
1996	14,000	97,800
1997	15,000	110,650
1998	13,000	121,960
1999	9,500	129,640
2000	10,500	136,440
2001	9,500	144,140
2002	9,000	149,240
2003	11,000	157,400
2004	13,000	164,000
2005	14,500	172,000
2006	16,000	178,400
2007	14,000	190,000
2008	15,000	206,000
2009	20,000	220,000
2010	25,000	236,000
2011	28,000	257,000
2012	39,700	282,000
2013	42,620	338,260
2014	48,200	385,200
2015	43,780	427,500
2016	44,500	458,200
2017	48,500	508,000
2018	59,700	552,500
2019		604,700

Data Source: Containerisation International 2008 Census and, for more recent years, other sources including tank container manufacturers, operators and leasing companies.

Table 3 shows:

1. The estimated annual tank production since 1991. The ability to increase economic production has been one of the drivers of the tank container industry growth.

2. The estimated global tank container fleet since 1992

Figure 5: Tank Container Production (1990 to 2018)

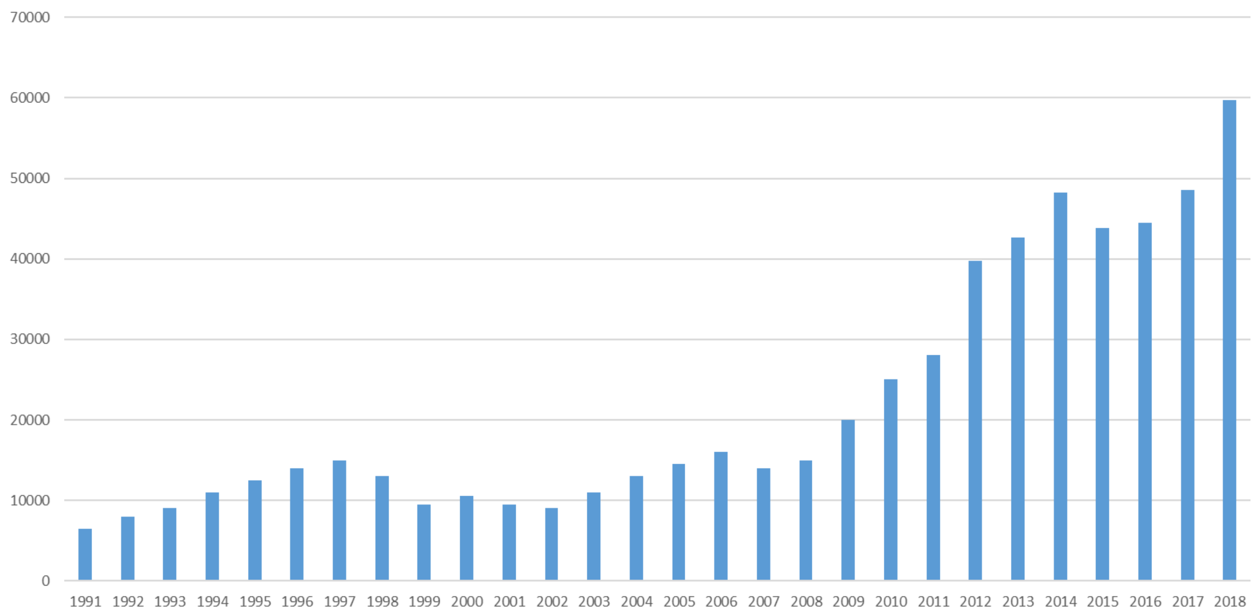
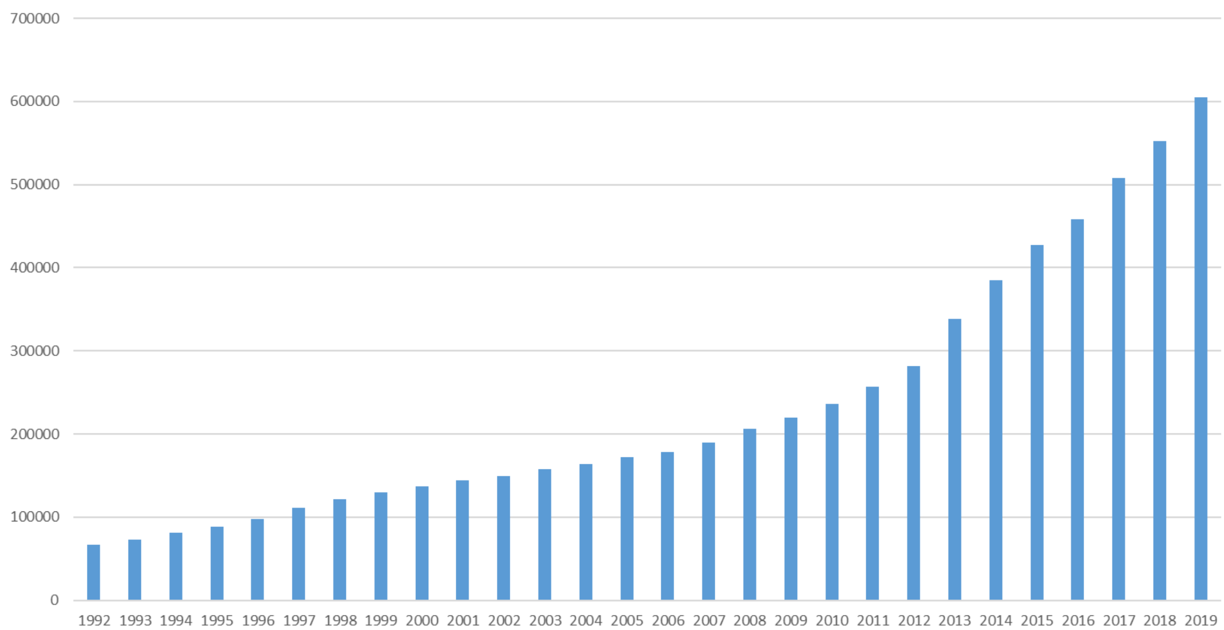


Figure 6: Total Fleet size at 1 January of each year



Global Tank Container Fleet: Tank Operators Fleet at January 2019

Tank Operators are third party logistics companies that provide a door-to-door service to shippers and others that require transport of bulk liquids, powders or gases. The fleet listing for each company includes all tanks operated by that company, regardless of whether the tanks are owned outright, managed, leased or any other financial structure used to acquire the asset.

Table 4: Tank operators fleet (January 2019)

OPERATOR	Head-quarter	Fleet	OPERATOR	Head-quarter	Fleet
Agmark Logistics	USA	1,600	Legend Tank	Singapore	2,000
ATI Freight	UAE	2,000	Lexzau, Scharbau	Germany	5,060
Alfred Talke	Germany	1,200	Marenzana Multi Modal Spa	Italy	1,500
Bertschi Group	Switzerland	23,300	Meurer Intermodal (Lanfer)	Germany	1,200
Bolt	Singapore	1,200	M&S Logistics	UK	8,050
Braid Logistics	UK	2,750	Muto Co Ltd	Seoul	2,400
Bulkhaul	UK	22,500	Newport/Sinochem	Netherlands	31,800
Bulk Tainer Logistics	UK	2,654	Nichicon Tank	Japan	8,000
Celerity Tank	China	2,000	Niyac Corp	Japan	2,500
Chemion Logistik	Germany	1,000	Odyssey Logistics Food Trans	USA	1,100
Chemical Express	Italy	1,500	Paltank	UK	1,900
China Railway Logistics	China	20,879	Protank Liquid Logistics	Taiwan	1,200
Contank	Spain	1,200	Rinnen	Germany	3,500
Curt Richter	Germany	1,660	R.M.I Global Logistics	Netherlands	4,600
Daelim Corporation	Korea	4,700	Sinochem domestic	China	1,000
Dana Liquid Bulk	USA	8,000	Spectransgarant (Railgarant)	Russia	5,112
Den Hartogh Logistics	Netherlands	20,000	Stolt Tank Containers	UK	39,156
Eagletainer Logistics	Singapore	8,860	Suttons International	UK	8,500
Flexitank Inc	USA	2,500	Ueno Container Logistics	Singapore	1,000
GCA Trans	France	4,000	Van den Bosch Transport	Netherlands	4,250
Goodrich Maritime	India	1,400	VTG Tanktainer	Germany	9,150
Haesaerts Intermodal	Belgium	1,000			
Hoyer Group	Germany	33,881	**Other Under 1000**		
Infotech-Baltika M	Russia	5,000	Estimated not accounted*	Asia Pacific	13,000
Interflow (TCS)	UK	11,683	Estimated not accounted*	Europe, RU	8,000
Intermodal Tank Transport	USA	13,500	Estimated not accounted*	Americas	10,000
Katoen Natie Tank	Belgium	1,500	Estimated not accounted*	IN/Mid-East/AF	7,700
			TOTAL		381,750

*Note: *There are a number of regional lessors that are not readily contactable. Accordingly an estimate has been included.*

Global Tank Container Fleet: Leasing Companies Fleet at January 2019

<u>Tank Leasing companies</u> provide tank containers to operators, shippers and others, usually on a contractual term basis, where the lessee takes quiet possession and operates that tank as if it were owned. Leasing company fleet listings include all tanks within the leasing company fleet including owned outright, managed on behalf of investor owners and any other financial means of acquisition.

Table 5: Leasing companies fleet (January 2019)

LESSOR	Head-quarter	Fleet	LESSOR	Head-quarter	Fleet
Albatross Tank Leasing	China	9,500	Peacock Container	Netherlands	3,900
CS Leasing	USA	10,120	Raffles Lease	Singapore	13,240
Combipass	France	1,500	Seaco Global	Singapore	43,000
Eurotainer	France	48,000	Triton International	USA	13,500
EXSIF Worldwide	USA	58,500	Tankspan Leasing	UK	3,502
GEM Containers	UK	9,200	Trifleet Leasing	Netherlands	16,100
GRP Multilogistics	Switzerland	1,600	Tristar Engineering	Switzerland	1,100
International Equipment	USA	6,000	TWS Tankcontainer	Germany	8,360
Matlack Leasing	USA	2,500	Unitas Container Leasing	Bermuda	1,600
MCM Management	Switzerland	1,390			
Multistar Leasing	South Africa	5,173	Estimated total for others under 1000*		20,400
Noble Container Leasing	Hong Kong	1,000	**TOTAL**		**286,000**
NRS Group	Japan	7,000			

*Note: *There are a number of regional lessors that are not readily contactable. Accordingly an estimate has been included.*

Global Tank Container Fleet: Manufactured January to December 2018

Leading **manufacturers** that specialise in international tank container production have been listed. There are other manufacturers worldwide that build tanks for mostly domestic and regional markets, in addition to their core business - typically that of road tank vehicles and process vessels. A nominal estimate has been added to recognise the production completed by regional manufacturers.

Table 6: Tank Containers Manufactured (January to December 2018)

MANUFACTURER	Head-quarter	Fleet	MANUFACTURER	Head-quarter	Fleet
CIMC Group	China	29,500	JJAP	China	1,500
Dalian CRRC Container	China	3,600	Van Hool	Belgium	750
CXIC Group	China	2,500	Welfit Oddy	South Africa	4,850
Nantong Tank Containers	China	8,500	Other manufacturers*	Global	3,000
Singamas	China	5,500	**TOTAL**		**59,700**

*Note: *Nominal estimate on production completed by regional manufacturers.*

Methodology

The global tank container fleet comprises a range of tank types including tanks for liquids, liquefied gases, powders, swap tanks and specials. Tanks below 20ft length such as those typical of the offshore oil industry are not included in this Survey.

The tank container is highly regulated and is required to meet stringent standards of operation, including statutory periodic inspection and renewal of test certification. However, there is no global register of tank containers. Data must be collected by systematically requesting tank owners and operators to provide company fleet numbers and manufacturers to report new production. Where firm data is not provided, this Survey provides estimates based on internet research and consultation with experienced industry representatives.

Reported figures are recorded as received or, in the case of the charts within the report, the result of the percentage calculation of data. It is not intended to suggest that calculated figures are accurate to an exact number. Readers should round up, or down, as required.

Leased fleet listings are not included in the total industry fleet figures, except for the relatively few estimated stocks that are idle. The balance of "on lease" tanks is typically estimated to be leased to operators (65%) and shippers and other tank users (35%).

This percentage might vary by leasing company according to their market strengths and objectives, but is an estimated average. The trend is for a greater proportion leased to operators but for consistency with previous surveys the percentage breakdown remains unchanged.

Whereas there is a trend to outsource tank logistics to tank operators, there remains a fleet of tanks directly controlled by shippers and others.

Shipper (also referred to as producers or consignors) fleet and others are challenging to assess because of the vast number of shippers and others worldwide.

It is especially difficult to compile a list of shipper-owned tank containers, because tank ownership is a relatively small part of their core business and - as a result - fleet figures are not freely available. This also applies to other tank users - such as shipping lines, military authorities, railways, oil companies, mining industry and China domestic. Estimates of the total "others" are included in the Survey.

As a result of the trend to outsource tank logistics it is estimated that the shipper and others owned fleet is static. Operators might provide logistics services for shipper-owned tanks, but the tanks are not included as operator tanks for the purpose of this survey. It is estimated that on average about 35% of the total leasing company fleet is leased directly to shippers and others.

In the 2013 Survey it was estimated that shippers and others might own, on average, about the same number of tanks that are leased into their fleet. This number remains unchanged in the 2018 Survey and in preceding years. Users of the Survey can make adjustments to suit their needs.

More details on the methodology are given as explanations accompanying tables and figures.