

Global Liner Performance February Report 2015



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Global Liner Performance report – February 2015

Global Executive Summary

Congestion on the US West Coast continued in January which impacted both schedule reliability and container delivery further, and both measures thereby reached new all-time record low performance levels. This is the third consecutive month that schedule reliability reached a new all-time record low performance, while it is the fourth consecutive month for container delivery. During January, carriers experienced that vessel productivity across the West Coast continued to be at a very low level, which meant the vessels were forced to anchor due to slow vessel turn times in the ports. The consequence was that the backlog of anchored vessels continued to grow in Seattle, Tacoma, Oakland, Los Angeles and Long Beach. On the US East Coast, New York was forced to close for a couple of days due to an incoming winter storm, as it was impossible to handle vessels. Finally, some carriers decided to suspend their services to Libya, while other carriers have implemented a War Risk Surcharge to the country due to the social unrest in the country.

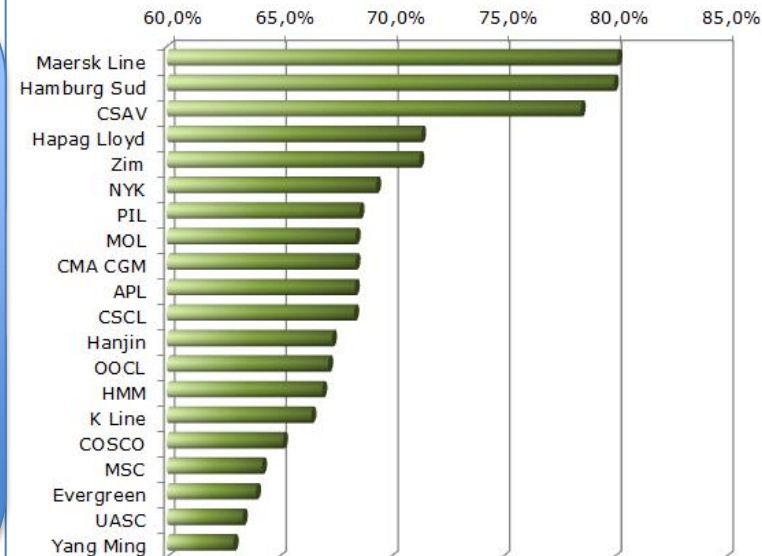
Global schedule reliability declined in January to a new record low performance of 67.8%, while data from INTTRA shows that container delivery decreased to 49.1%. In January, Maersk Line was the most reliable carrier with a global performance of 80.2%, but they were once again closely followed by Hamburg Süd with a schedule reliability of 80%. CSAV retained the third spot with a global score of 78.5%. At the other end of the scale, we find Yang Ming, UASC and Evergreen. Despite the global decline, four carriers manage to improve their performance from December to January: NYK, HMM, Hapag-Lloyd and ZIM:

Trade lane Summary

In the East-West trade lane, the impact of congestion on the US West Coast continued to impact schedule reliability and container delivery further, and both measures thereby reached new all-time record low performance levels. This is the third consecutive month that schedule reliability reached a new all-time record low performance, while it is the fourth consecutive month for container delivery. During January, carriers experienced that vessel productivity across the West Coast continued to be at a very low level, which meant the vessels were forced to anchor due to slow vessel turn times in the ports. The consequence was that the backlog of anchored vessels continued to grow in Seattle, Tacoma, Oakland, Los Angeles and Long Beach. On the US East Coast, New York was forced to close for a couple of days due to an incoming winter storm, as it was impossible to handle vessels. Finally, some carriers decided to suspend their services to Libya, while other carriers have implemented a War Risk Surcharge to the country due to the social unrest in the country.

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Global Top 20 carrier ranking - January 2015



Source: SeaIntel - Global Liner Performance report - February 2015

Global Reliability Developments

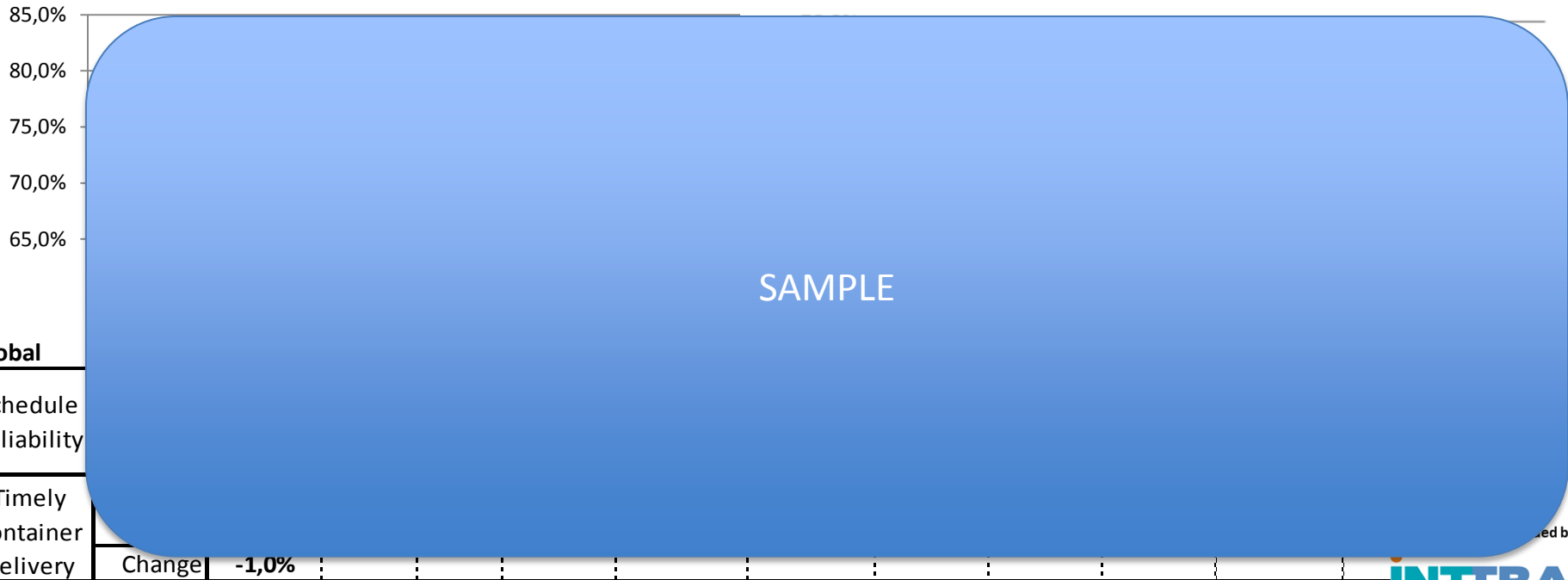
Global developments

Global schedule reliability reached a new all-time record low performance in January of just 67.8%, which is 1.7 percentage points below the level we recorded a year ago, but 14.2 percentage points below the January 2013 result. Global schedule reliability is based on 10,762 vessels arrivals in January. Data from INTTRA shows that global container delivery declined from 56.1% in December to 49.1%, which means that the January result has declined by 1 percentage point Y/Y. Container delivery in January is based on 3.043.574 containers.

Please note, that INTTRA has updated the methodology used to provide on-time container reliability data with enhancements that more accurately reflect what shippers expectations should be from carriers based on the actual delivery of containers vs the promised delivery dates provided in the final booking confirmation sent by the ocean carrier. One of the most significant changes is the analysis time frame which shows the average percentage of shipments that are on-time (+/- 1 day) using the container status event messages for shipments between the origin and final destination port promised in the booking confirmation. As INTTRA has updated their methodology data on container delivery for 2011 and 2012 is no longer available in the report, as the figures would not be directly comparable.

Global schedule reliability

Global timely container delivery



Top20 carriers - global performance

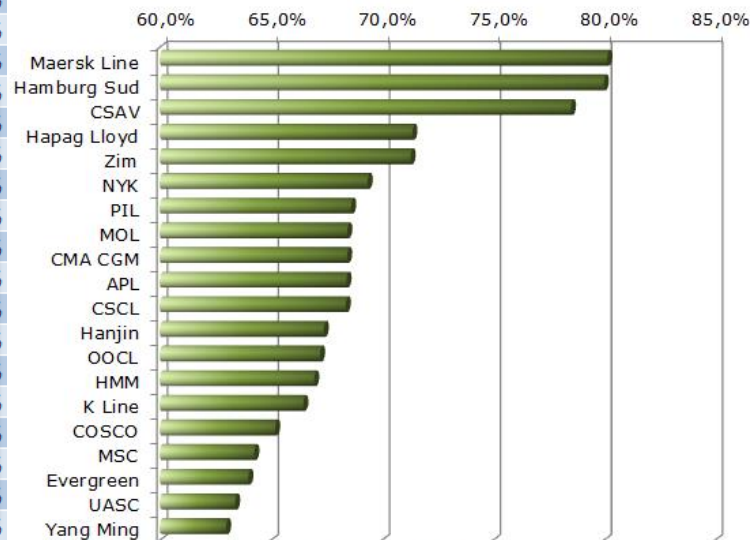
Global developments

For the sixth consecutive month Maersk Line, Hamburg Süd and CSAV were the most reliable carriers from a global perspective, with on-time performances of 80.2%, 80% and 78.5%, respectively. The Top3 carriers have a significant higher performance than the remaining carriers in January, as the gap between CSAV and Hapag-Lloyd on the third and fourth spot is seven percentage points. At the other end of the scale, we find Yang Ming, UASC and Evergreen with a performance of 63%, 63.4% and 64%, respectively.

The negative development in schedule reliability from December to January is definitely visible in the Top20 carriers performances, as 15 carriers have witnessed a decline in their performance over the period. UASC, Yang Ming and K Line have witnessed the largest decrease from December to January, with a decline of 7.3, 6.4 and 5.9 percentage points, respectively. On the other hand, four carriers have managed to improve their schedule reliability slightly in the same period. The four carriers are NYK, HMM, Hapag-Lloyd and ZIM, that have seen an increase of 0.9, 0.9, 0.6 and 0.4 percentage points, respectively. The positive development for Hapag-Lloyd, ZIM, NYK and HMM means that the carriers have also improved their ranking since December, so they are ranked 4th, 5th, 6th and 14th in January.

Top-20 carriers	2011-Q4	2012-Q4	2013-Q4	2014-Q4	okt-14	nov-14	dec-14	jan-15
APL								68,4%
CMA								64%
CSAV								78,5%
Hamburg Süd								80%
Maersk Line								80,2%
Hapag-Lloyd								71,6%
Zim								71,6%
NYK								69,7%
PIL								68,8%
MOL								68,8%
CMA CGM								68,8%
APL								68,8%
CSCL								68,8%
Hanjin								68,8%
OOCL								68,8%
HMM								68,8%
K Line								68,8%
COSCO								68,8%
MSC								68,8%
Evergreen								64%
UASC								63,4%
Yang Ming								63%
Zim								61,3%

Global Top 20 carrier ranking - January 2015



Source: SeaIntel - Global Liner Performance report - February 2015

Niche carriers global performance

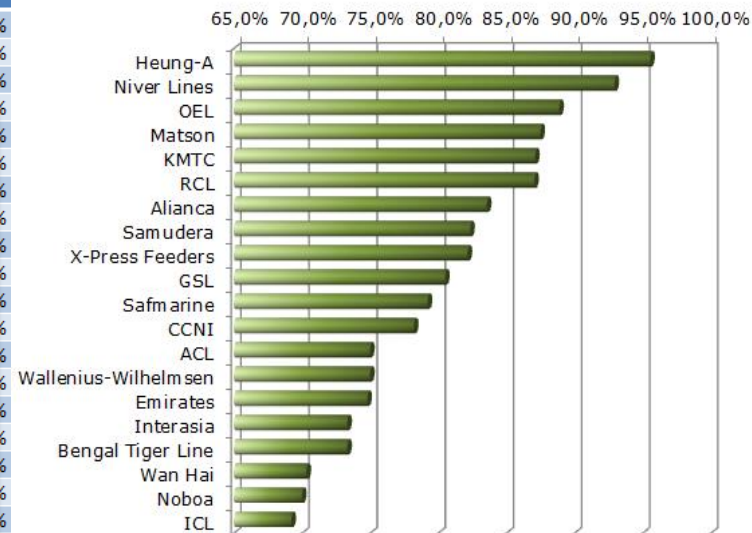
Global developments

In the niche carrier segment, Heung-A, Niver Lines and OEL were the most reliable carriers in January, with a score of 95.6%, 92.9% and 88.9%, respectively. At the other end of the scale we find Atlantic Ro-Ro Carriers (ARRC), Westwood Shipping and Turkon Line with a schedule reliability of 0%, 14.3% and 16.7%, respectively. Normally, Westwood Shipping is ranked at the top of the list, but the carrier also seems to be heavily affected by the situation on the US West Coast.

Finally, we have noted that Malaysian carrier HubLine has decided to exit the container shipping market and focus on their breakbulk activities, which means that the carrier within the near future no longer will be listed in the report.

Performance across niche carriers is much more diverse than seen across the global top-20 carriers. This greater diversity is partly explained by the lower number of measurements available for niche carriers – and hence uncertainty increases – and partly because niche carriers are exposed to very different markets.

Top ranking niche carriers - January 2015



Source: SeaIntel - Global Liner Performance report - February 2015

SAMPLE

Trade lane overview – Schedule reliability

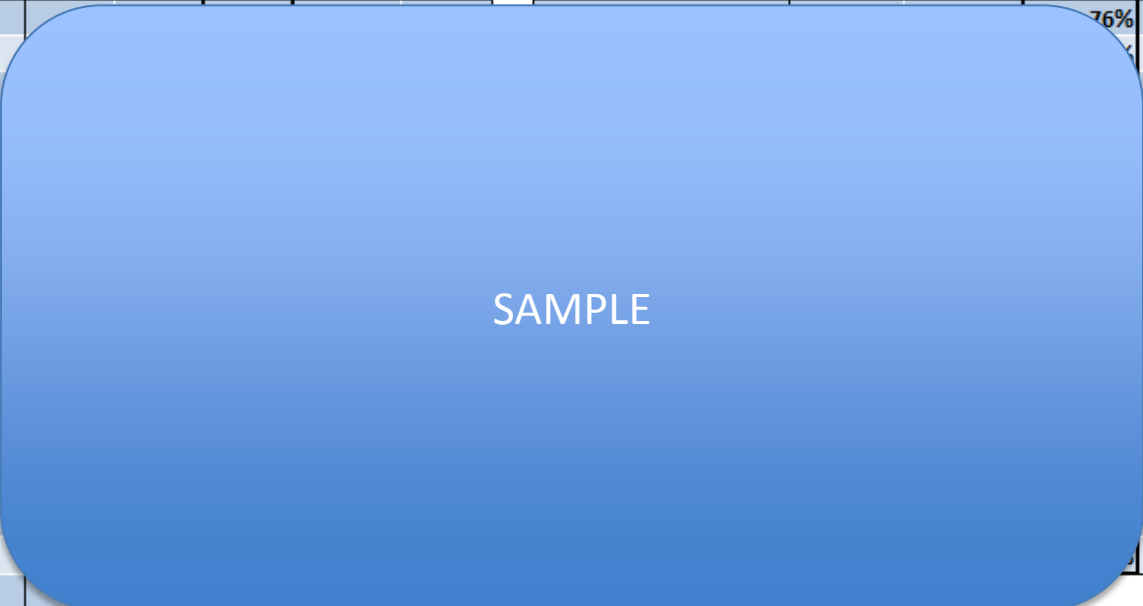
Tradelane developments

The negative decline in global schedule reliability is clearly reflected in the development in the individual trade lanes performances, as 26 trade lanes have witnessed a decrease in on-time performance from December to January, whereas only one trade lane has remained on the same level and six trade lanes have seen improved performance.

The six trade lanes that improved from December to January were South America to North America, Asia to Africa, Europe to Africa, Asia to ECSA, Asia to WCSA and WCSA to Asia. The largest improvement was recorded in the Asia-Africa trade lane that saw an increase of 7 percentage points to 50%.

In the main East-West trades all trade lanes saw a decrease in schedule reliability, where the largest declines were recorded in the Asia-Europe and Transatlantic trade lanes. In the Asia-North Europe and Asia-Mediterranean trades schedule reliability decreased by 10 and 11 percentage points, to 69% in both trade lanes. Despite the significant decline, schedule reliability remains Y/Y on a considerable higher level in both trade lanes. In the Transatlantic trade, the Eastbound and Westbound trade lanes declined by 10 and 13 percentage points, respectively, which means that both trade lanes Y/Y have decreased. The Transpacific EB trade lane continued to drop, as on-time performance decreased by another 7 percentage points to 42%.

Tradelane	jan-14	dec-14	jan-15	Monthly change	Annual change	Tradelane	jan-14	dec-14	jan-15	Monthly change	Annual change
Transpacific EB									42%	-5%	-7%
Transpacific WB									44%	-2%	2%
Asia - North Europe									69%	-6%	-1%
Asia - Mediterranean									80%	-9%	5%
Europe - Asia									71%	-2%	-5%
Transatlantic EB									52%	-2%	-7%
Transatlantic WB									39%	-4%	-7%
Europe - South America									48%	-8%	-1%
South America - N. Europe									53%	7%	-6%
South America - Med.									61%	-1%	12%
N. America - South America									51%	2%	-3%
South America - N. America									40%	-11%	-7%
Europe-Oceania									67%	4%	8%
N. America - Oceania									30%	-1%	19%
Oceania - N. America									44%	6%	12%
Asia - Oceania									48%	2%	13%
Oceania - Asia									43%		



Trade lane overview – Container Delivery

Trade lane developments

Data from INTTRA shows the same overall picture as schedule reliability. Container delivery on a trade lane level is also heavily affected by the global decrease in container delivery, as 27 trade lanes have witnessed a decrease from December to January, whereas only two trade lanes have managed to remain at the same level, and four trade lane have seen improved performance in the period. The four trade lanes are: Asia to Oceania, Asia to Africa, ECSA to Asia and Asia to WCSA.

In the major East-West trades, we find that all the trade lanes have experienced a decrease in performance. In the Asia-Europe trade, the Asia-North Europe and Asia-Mediterranean trade lanes saw a decrease of 10 and 8 percentage points, respectively. In the Transatlantic trade lanes the Eastbound trade lane decreased by percentage 13 percentage points, while the Westbound trade lane declined by 16 percentage points. The Transpacific EB trade lane continued to decline, as the performance decreased by an additional 5 percentage points to a record low 27%.

It is also evident that container delivery in the North America to Oceania and Oceania to North America trade lanes are heavily affected by the situation on the US West Coast, as the performance Y/Y has declined by 36 and 31 percentage points.

Tradelane	jan-14	dec-14	jan-15	Monthly change	Annual change	Tradelane	jan-14	dec-14	jan-15	Monthly change	Annual change
Transpacific EB									51%	-5%	-4%
Transpacific WB									6%	-7%	5%
Asia - North Europe										-7%	2%
Asia - Mediterranean										-3%	15%
Europe - Asia										-1%	-2%
Transatlantic EB										-2%	-4%
Transatlantic WB										-2%	-9%
Europe - South America										-5%	2%
South America - N. Europe										2%	-17%
South America - Med.										0%	-10%
N. America - South America										-5%	2%
South America - N. America										-7%	-1%
Europe-Oceania										-2%	-4%
N. America - Oceania										8%	10%
Oceania - N. America										4%	7%
Asia - Oceania										-4%	9%
Oceania - Asia											

SAMPLE

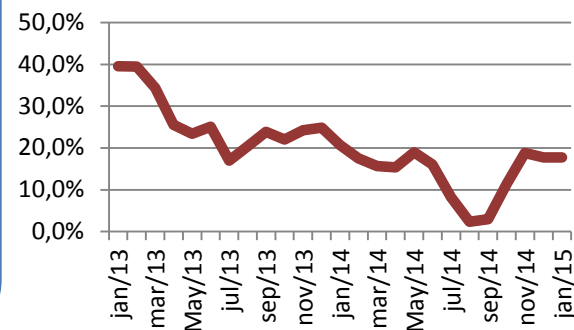
Indian Subcontinent – Asia – Trade Developments

Indian Subcontinent to Asia developments

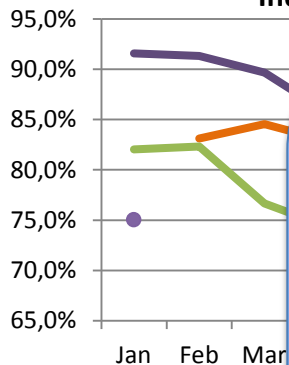
Schedule reliability and timeliness of container delivery declined in January. Schedule reliability decreased from 77.3% in December to 75% in January, while container delivery declined from 59.5% to 57.3% over the same period. Y/Y schedule reliability has decreased by 7 percentage points and container delivery has decreased by 4 percentage points. Over the past three months the difference between the two measures has remained at a stable level of approximately 20 percentage points.

Maersk Line, Hamburg Süd and Heung-A recorded the highest schedule reliability in the trade lane with a score of 89.3%, 89.2% and 88.5%, respectively. At the other end of the scale, we find MSC, S.C. India and Interasia.

Difference between schedule reliability and container delivery



Indian Sub. - Asia schedule reliability



Indian Sub. - Asia timely container delivery

SAMPLE

Schedule Reliability	201
	201
	Change
Timely Container Delivery	201
	2015
	Change

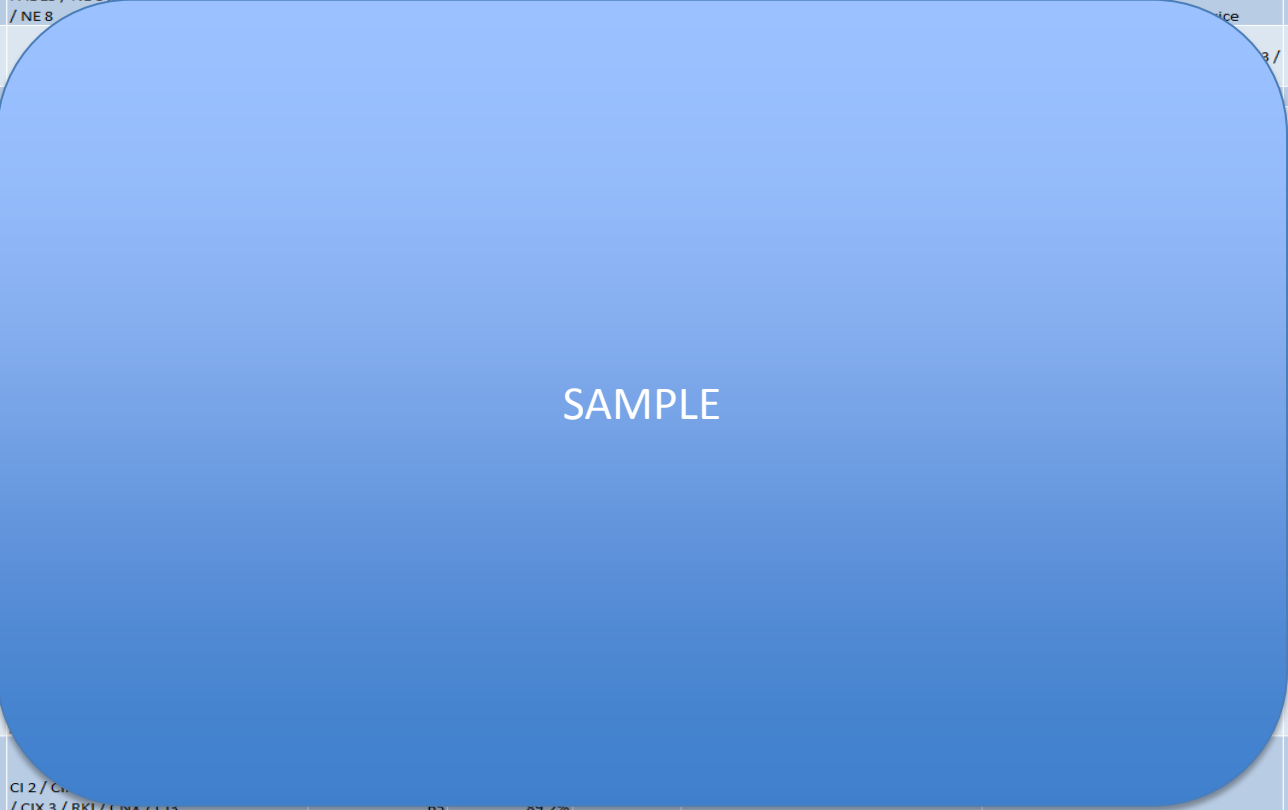
Indian Subcontinent – Asia – Carrier Performance

Indian Sub. - Asia	jan-14	feb-14	mar-14	apr-14	maj-14	jun-14	jul-14	aug-14	sep-14	okt-14	nov-14	dec-14	jan-15	6-month trend
Maersk Line	92,5%												89,3%	Increasing
Hamburg Sud	91,7%												89,2%	Increasing
Heung-A	91,5%												89,2%	Increasing
NYK	91,5%												89,2%	Increasing
APL	91,5%												89,2%	Increasing
Emirates	91,5%												89,2%	Increasing
OOCL	91,5%												89,2%	Increasing
X-Press Feeders	91,5%												89,2%	Increasing
RCL	91,5%												89,2%	Increasing
GSL	91,5%												89,2%	Increasing
ZIM	91,5%												89,2%	Increasing
CMA CGM	91,5%												89,2%	Increasing
KMTC	91,5%												89,2%	Decreasing
Safmarine	91,5%												89,2%	Decreasing
Hapag Lloyd	91,5%												89,2%	Increasing
TS Lines	91,5%												89,2%	Increasing
Samudera	91,5%												89,2%	Increasing
CSCL	91,5%												89,2%	Decreasing
Hanjin	91,5%												89,2%	Increasing
HMM	91,5%												89,2%	Increasing
Wan Hai	91,5%												89,2%	Increasing
Yang Ming	91,5%												89,2%	Increasing
K Line	91,5%												89,2%	Decreasing
Simatech	91,5%												89,2%	Increasing
Delmas	91,5%												89,2%	Increasing
MOL	91,5%												89,2%	Increasing
Evergreen	91,5%												89,2%	Increasing
HubLine	91,5%												89,2%	Decreasing
COSCO	91,5%												89,2%	Increasing
OEL	91,5%												89,2%	Increasing
PIL	91,5%												89,2%	Decreasing
Bengal Tiger Line	91,5%												89,2%	Decreasing
Interasia	91,5%												89,2%	Decreasing
S.C. India	79,8%												4,2%	Decreasing
MSC	35,1%												15,8%	Decreasing

SAMPLE

Indian Subcontinent – Asia – service specifics

Carriers	Service	# of arrivals	% on-time	Carriers	Service	# of arrivals	% on-time
CMA CGM / COSCO / CSCL / Evergreen / Hanjin / K Line / Yang Ming	FAL 15 / NE 8 / AEX 10 / CES / NE 8 / NE 8 / NE 8					41	80,5%
CSCL / GSL / OOCL / ZIM						55	85,5%
MSC						100	74,0%
Maersk Line						40	95,0%
COSCO / Evergreen / Hanjin / K Line / MOL / Yang Ming						60	93,3%
COSCO / Evergreen / X-Press Feeders						59	55,9%
COSCO / Evergreen / HubLine / Maersk Line / Safmarine / Simatech / Wan Hai						28	60,7%
Evergreen / HMM						38	57,9%
COSCO / OOCL / Yang Ming						38	65,8%
Hanjin / NYK / Samudera / X-Press Feeders						14	100,0%
GSL / Hanjin / Hapag Lloyd / NYK / RCL / Samudera / Wan Hai / X-Press Feeders						47	100,0%
Yang Ming / ZIM						51	62,7%
GSL / Heung-A / HMM / TS Lines / X-Press Feeders / ZIM						76	80,3%
COSCO / GSL / Hanjin / MOL / NYK / OOCL / TS Lines / X-Press Feeders / ZIM						60	86,7%
CMA CGM / Delmas / Maersk Line / Safmarine						5	100,0%
CMA CGM / COSCO / Delmas / Emirates / Evergreen / Hanjin / NYK / OOCL / S.C. India / X-Press Feeders						13	61,5%
CMA CGM / COSCO / Delmas / Emirates / Evergreen / Hanjin / NYK / OOCL / S.C. India / X-Press Feeders							
APL / CMA CGM / Emirates / GSL / Hamburg Sud / KMTCC / Maersk Line / OOCL / RCL / X-Press Feeders / Yang Ming / ZIM							
	CI 2 / C...	03	03,2%				
	/ CIX 3 / RK1 / CNA / C13						
Performance by services for Dec 2014-Jan 2015							



Definition of Schedule Reliability and Container Delivery

Schedule Reliability:

Schedule reliability performance is a measure of the actual on-time performance of individual vessel arrivals in ports around the world. Each month SeaIntel, measures more than 11,000 vessel arrivals on average, in more than 270 ports, which is the underlying data for the monthly global performance, as well as the individual trade lane and service performance. Please note, that trade lane and service performance is based on a two month rolling average. This means that the performance in the March report is based on vessel arrivals in both January and February.

The definition of "on time" has in accordance with the widely used calendar-day definition been settled as arrival within plus or minus 1 calendar day from the proforma schedule. While we would prefer to measure performance on a +/- 24-hour basis, this is not possible, as the majority of carriers only publish their schedules on a calendar day basis, and we as thus limited by the available data.

For more detailed information on the methodology used in calculating schedule reliability, we kindly advise our readers to consult the methodology section.

Container Delivery

Container delivery performance is based on the actual delivery of containers vs the promised delivery dates provided in the final booking confirmation sent by the ocean carrier. Each month, SeaIntel's data partner, INTTRA, tracks the performance of close to 3 million containers, measuring whether the containers are delivered on-time in accordance with what was agreed on the final booking confirmation by using the container status event messages for shipments between the origin and final destination port promised in the booking confirmation.

The difference between schedule reliability and container delivery is, that schedule reliability is a measure of how accurate the carrier is in predicting to the shipper when their vessel arrived on time in the port according to its published schedule, while container delivery reliability is measuring how accurate the carrier is in predicting to the shipper when their container will arrive versus the date the shipper was told it would arrive in the booking confirmation.

Please note, that trade lane performance is based on a two month rolling average. This means that the performance in the March report is based on container delivery in both January and February. The definition of "on time" has in accordance with the calendar-day definition been settled as arrival within plus or minus 1 calendar day from the proforma schedule. For more detailed information on the methodology used, we kindly advise our clients to read the methodology section.

Methodology – part 1

General Methodology

In order to benchmark the container carriers on schedule reliability, we have established a quantifiable methodology for measuring the reliability performance of ocean carriers.

For users already familiar with our methodology, we can advise that no fundamental changes have been made to the overall methodology since the report issued on 15 June 2012, although with the March 2014 report, some technical changes have been made in the way trade lane performance is calculated. These changes, as detailed below, have not affected the Global carrier scores, and have only had limited impact on trade lane scores.

On-time measurement

The definition of "on time" has in accordance with the calendar-day definition been settled as arrival within plus or minus 1 calendar day from the proforma schedule.

We have from the beginning of November 2011 been recording both schedules and actual arrival times by the hour for carriers which provide this information. Additionally, we have added a fourth data source, namely information concerning actual arrival by the hour directly from some carriers.

We have been in dialogue with a number of carriers particularly on the topic of measuring on calendar day versus measuring arrivals down to the hour or minute. At SeaIntel Maritime Analysis we are of the principal opinion that data should be as detailed as possible, but also that data must be comparable. As the vast majority of container carriers do not provide schedules beyond calendar days, we have chosen to maintain our existing methodology, focusing purely on calendar days in order to ensure comparability across carriers. As more carriers provide schedules by the hour, we may revise the methodology, or include specific analysis of by the hour performance.

Methodology – part 2

Global Performance

***** UPDATED METHODOLOGY FROM MARCH 2014 REPORT**

Global schedule reliability performance of the container carrier industry is measured on the basis of all vessel arrivals recorded in SeaIntel's Global Liner Performance database, also arrivals not currently covered by a trade lane. Importantly, each vessel arrival is only counted once in the global performance, irrespective of the number of container carriers that may be onboard a given services.

Container delivery performance is based on data supplied by SeaIntel's data partner, INTTRA, and is based on close to 3 million monthly container deliveries. The data is provided on a country-country level, so there may be slight misalignments with the schedule reliability trade lane data which is sourced on a port-port level. Importantly, the data provided by INTTRA does NOT contain information on individual container carriers, and SeaIntel cannot provide container delivery performance for carriers.

As of the March 2014 Global Liner Performance report, a minor change has been implemented in the methodology for calculating the global container delivery performance. In the past, global container delivery performance was calculated as a running two-month average, in line with how trade lane performance is calculated, but as of the March 2014 report, we have changed the methodology so the global container delivery performance is only calculated for the month in question, so it is in line with the calculation of global schedule reliability performance. The effect of changing the calculation method has been minimal, with individual monthly performance changing less than 3% as a result.

Carrier Performance

***** UPDATED METHODOLOGY FROM FEBRUARY 2014 REPORT**

As of the February 2014 Global Liner Performance report, a major technical update has been implemented in the methodology for how individual carrier performance is calculated, although the effect on the actual performance results is very minimal. Up to the February 2014 report, carrier performance has been calculated based entirely on whether a carrier was onboard a service or not, and if a carrier was onboard a service, their performance would be calculated based on all the port calls of the service, irrespective of whether the carrier in question was actually offering a product for the entire round trip.

As an example, Carrier A may offer a service consisting of a specific number of port pairs on competing Carrier B's string, usually through a slot purchase/charter agreement. In the past, both carriers would receive the same performance for those services, although carrier A only offers a product between a specified set of port-pairs of Carrier B's round trip service. This has now been changed, so each carrier are scored exclusively on the services/port pairs/regions they offer.

This is an improvement of the underlying database we have wanted to perform for a long time, but we have simply not been able to do it before, as it has been a major technical undertaking that has taken several months of parallel development, effectively requiring a complete redesign and restructure of the entire GLP database, which already is the World's most comprehensive database of carrier schedule performance. While it has been an absolutely immense technical challenge, the resulting change in performance scores has been absolutely minimal, with monthly global scores changing less than 0.1 percentage points as a result of the change in methodology.

While the effect on results has been minimal, we are very pleased with this comprehensive methodological update, as it is absolutely imperative for SeaIntel that we always strive to provide the best and most correct data and analysis to our customers. If you have any questions or comments to this change in methodology, or any other questions about the GLP report or other SeaIntel services, please do not hesitate to contact Mr. Morten Thomsen at m.thomsen@SeaIntel.com

Methodology – part 3

Trade Lane Performance

***** UPDATED METHODOLOGY FROM AUGUST 2013 REPORT**

In the original database design, we assigned each service to an overall trade, e.g. Asia-Europe or Transpacific, and then we would calculate trade lane performance by measuring the number of arrivals that were on-time into a given head haul region, so e.g. for Asia - North Europe we would calculate the number of arrivals on Asia-Europe services into North European ports, and then count the number of arrivals that were on-time.

While this worked fine in the beginning when only measuring a subset of the global network, it has become increasingly difficult to maintain, as some trade lanes require very special attention, e.g. Asia - Middle East, where we would include Asia - Europe services, but only on the westbound call into the Middle East.

The maintenance became even more cumbersome with the increasing service disruptions and restructuring, where a service may change scope for an extended time period. Further, some trades were notoriously difficult to measure, e.g. the Middle East - Europe trade, where we would include Asia - Europe services, but only if they had made a call in the Middle East, which meant that with increasing port omissions and service restructures, we essentially had to monitor each port call on many services, and then trace back all the previous calls, to see if they had called the planned regions. Adding to this were the challenges from butterfly and pendulum services, and an increasing number of services that could not be assigned to a specific trade, but had to be handled manually. With more than 10.000 vessel arrivals each month, this was becoming impossible to do.

New Trade Lane Methodology

As of the August 2013 report, we have instituted a new trade lane methodology, where we do not assign a given service to any specific trade. Instead we trace the previous region calls that each vessel has made, irrespective of the service it is on, and then assign trade lanes based on the rotation. So if a vessel calls a European port, we trace back in the rotation and see what regions it has been to, so if the vessel has called ports in e.g. Asia, ISC and Middle East regions, that European port call is automatically assigned to the Asia-Europe, ISC-Europe and Middle East-Europe trade lanes.

The algorithm that calculates this is very complex, and as of the August 2013 report, we have recorded more than 275.000 scheduled arrivals and more than 240.000 actual arrivals, and this massive size and complexity has required a completely new database system and front end management system to maintain the database.

The benefit of the new methodology and database structure is that we do not have to re-calculate all the trade lane performance scores manually, and we should be able to produce the report much faster going forward. Further, we have been able to include all ports in trade lane calculations, so the basis is now more than 270 ports.

Methodology – part 4

Data Collection

Most of the carriers have schedules available on their website, which include port rotation (both head haul and backhaul), vessel names and day of arrival. However, some carriers do not have such accurate schedules available on their website. In these cases we have used the carrier's port to port search tool on their websites and composed the schedules through that tool.

The schedule data reflects proforma schedules 15 – 45 days into the future.

We are aware, that in a few instances there might be a discrepancy between some of the schedules a carrier places on their website and the schedules they provide through an EDI or XML feed. To ensure consistency in the measurement methodology, we have elected to focus on the schedule information provided through carrier websites. In cases where we have received data directly from the carriers, and we see a discrepancy between the website proforma and the carrier-submitted proforma, we have used the proforma information which matches the definition of a liner service – namely the regular arrival/departure.

The reason for making this choice is that the schedules on the website are a de-facto display of the carrier's product portfolio towards all potential and existing customers. Data transmitted through EDI or XML, on the other hand, constitute only a partial information flow, as it is designed to reach only a number of existing customers.

This choice of methodology also implies that a small part of the scheduled arrivals might not be part of our analysis, in the cases where they were not stated on carrier websites at all.

We use six different sources to identify the vessels' actual time of arrival: the carriers' own websites, information from ports, Track and Trace data submitted by Shippers, terrestrial AIS data, satellite AIS data, and data provided directly by carriers.

Our primary source to identify the vessels' actual arrival is the carriers' own websites. In those cases where the carriers do not update their websites with actual arrivals, we obtain arrival information from the individual ports, or from Track and Trace data submitted by Shippers with cargo onboard the vessel. If neither of those sources can identify the actual arrival of the vessel, we use AIS data, both terrestrial and satellite, to locate a vessel's geographical coordinates and to determine, when the vessel called the port.

When several carriers are cooperating on the same services through e.g. a vessel sharing agreement, alliance service or on slot charter, the actual schedule reliability will count for all the carriers involved in the relevant service. All carriers participating will be fully measured on the service performance. A more accurate measurement would entail weighting the reliability, in proportion to the share of the vessel assigned to each carrier. However, this information is rarely, if ever, announced by the carriers, hence the only methodologically consistent approach is to assign full value to each carrier using the service.

Methodology – part 5

Coverage

The Global Liner Performance database covers the majority of the deep sea service identified from 60 different carriers.

Services:

Currently, the GLP database cover more than 270 active services and more than 165 inactive services, based on more than 380.000 individual vessel arrivals, across 33 major trade lanes.

We have elected to exclude very short services, as schedule reliability becomes difficult to calculate with very short round trips. As an example, a very short 7-day round trip would by definition be on-time if the vessel is one day late. If the vessel becomes late by 7 days, it could be argued that it is now back on time, as the rotation has just been shifted by a week. We may include shorter services in the future, as well as additional services

Ports

The GLP is based on actual arrivals in more than 270 different ports around the world.

Carriers

Currently, 60 different carriers are included in the schedule reliability measurement. The 60 carriers include all the Top20 carriers, as well as a range of smaller niche carriers.

Vessels

The schedule reliability report is based on the tracking of more than 3.000 different vessels, in more than 6.000 vessel / service combinations.

Data aggregation

When calculating performance by trade lane we are calculating on the basis of a 2-month rolling window. As an example "February" performance for a tradelane includes data from January and February, whereas "January" includes data from December and January. This methodology is chosen to ensure that measurements best possibly reflect genuine changes in performance, and are not prone to large statistical fluctuations which can be associated with covering only a short timespan. Further, when measuring performance over a two-month period, we ensure that enough data points are available on a service and trade lane level. We only include service and carriers on the trade lane level, if a minimum of five vessels arrivals have been recorded over a two-month period.

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Data concerning container reliability and performance measurements related to the container level are provided by INTTRA. Further information about INTTRA can be found at www.INTTRA.com

The report has been provided to you by:

COO and Partner, Mr. Alan Murphy – alan.murphy@SeaIntel.com

Shipping Analyst, Mr. Morten Berg Thomsen – m.thomsen@SeaIntel.com

Shipping Analyst, Mr. Kasper Hansen – k.hansen@SeaIntel.com

SeaIntel Maritime Analysis

Vermlandsgade 51, 2. 2300 Copenhagen S. Denmark

www.SeaIntel.com

Tel: +45 6068 77 44 or +45 2825 1478 E-mail: info@SeaIntel.com

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