



*High performance. Delivered.*



## Port Botany Landside Improvement Strategy Programme - Trial 1

### Final Report (v1.03)

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## **Context for Trial:**

In 2008 IPART published the report “Reforming Port Botany’s links with inland transport” which concluded among others:

- Congestion and lack of coordination reduced efficiency
- Port related supply chain performance could improve
- Strong peak demand for VBS slots results in delays
- Lack of transparency
- Absence of performance requirements for the industry players

The PBLIS programme was formed by SPC to take the lead role in working with the industry to improve the landside supply chain network servicing Port Botany. In particular the programme focuses to:

- Improve industry communications and regular communication updates
- Provide greater transparency of the overall supply chain performance
- Maximise the efficient movement of trade passing through the port
- Ease landside congestion

In late 2008, the newly formed Port Road Taskforce agreed on a set of Key Performance Indicators to be trialled. At its meeting on January 14, 2009, the Taskforce endorsed SPC to conduct a Trial to validate these benchmarks and to baseline current performance across the supply chain.

## Key Objectives of The Trial

To validate performance measures and commercial drivers, the PBLIS programme has planned to conduct 3 Trials between February to July 2009.

### **Specifically, the Key Objectives of the first Trial are:**

- To support greater transparency of industry Supply Chain performance
- Collect data to validate the proposed performance measures in scope for the Trial
- Baseline current performance across the Supply Chain including Terminals, Carriers and Empty Parks
- Use the Trial to validate the internal SPC processes to collect, process and report on performance data
- Use the Trial to refine the communication approach across the industry
- Use the information collected from the Trial as input into other project activities

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## Scope and Period of Trial 1

The Scope of this Trial was to collect operational data at Port Botany, with a view to validate and form a baseline for the agreed performance indicators.

### The list of Performance Indicators monitored during Trial 1:

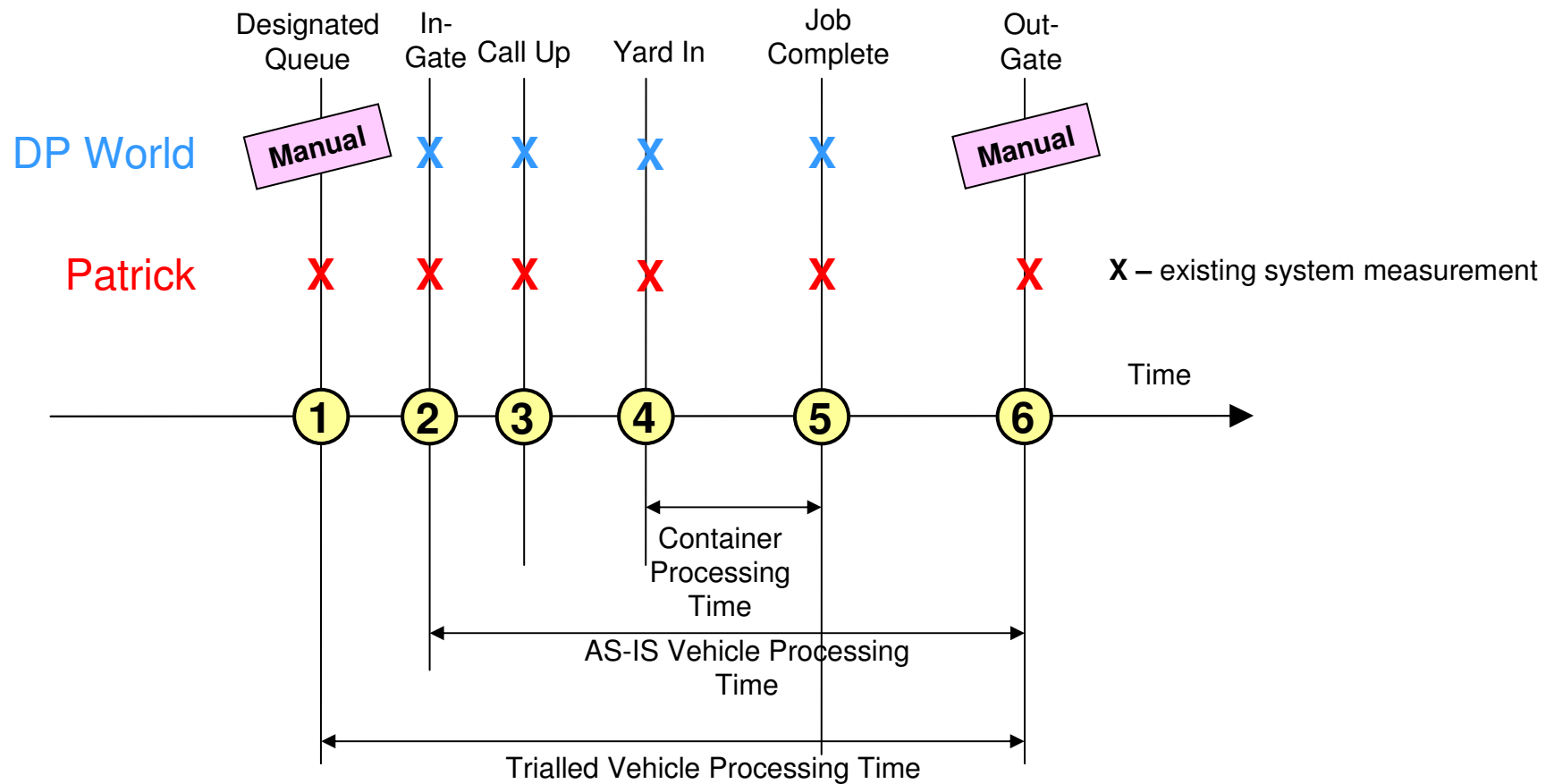
- VBS – number of slots available per hour
- Utilisation of peak and off-peak slots:
  - Patronage of non-peak slots
  - Patronage of weekend slots
  - Patronage of shoulder slots
  - Patronage of peak slots
- Dual Slots
- Vehicle Processing Time (Truck Turnaround Time = TTT)
- Late Arrivals & Early Arrivals
- No shows
- Container Dwell time
- Electronic Processing
- Industry Communications
  - Operational information
  - Contingency information
- Empty Container Parks
- Customs

The Trial was conducted between **February 16 to March 1, 2009** inclusive.

## Scope of Analysis - Activities in and out of scope

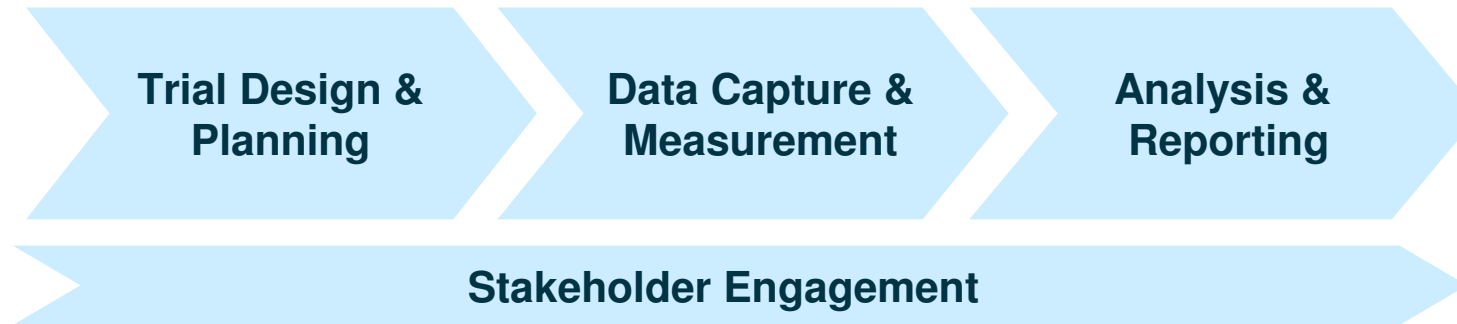
Sites	In-Scope	Out-of-Scope
Terminals	<ul style="list-style-type: none"> <li>Export and Import container movements and related truck movements, for which all required data are available (either from stevedores' system or manual data capture)</li> <li>For Dwell time analysis, all import containers at Patrick terminals and import containers arriving at DP World since Dec 1, 2008</li> </ul>	<ul style="list-style-type: none"> <li>Trucks running Stack Runs</li> <li>Trucks running X-Ray containers to/from CEF</li> <li>Trucks that fail to complete container processes due to various reasons</li> <li>Trucks with incomplete time stamp data</li> <li>Dwell Time analysis on Export containers</li> </ul>
Empty Container Parks	<ul style="list-style-type: none"> <li>All containers movements (and related truck) in and out of Empty container parks</li> <li>Stack Runs</li> </ul>	<ul style="list-style-type: none"> <li>Transfers between parks and rail transfers are out of scope</li> </ul>
Container Examination Facility (CEF)	<ul style="list-style-type: none"> <li>All containers processed at Container Examination Facility at Port Botany</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>

# Scope of Trial 1 – Truck Events Captured at the Terminal



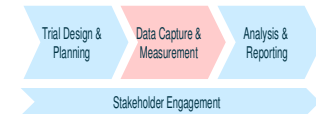
**Note:** While both stevedores provided the complete set of data for this trial, SPC would only publish analysis and performance measures on activities before In Gate and after the completion of Container Process.

The Trial was developed and conducted through 4 main stages:



### Trial Design and Planning:

- A Trial project team was formed to scope, design and plan the Trial.
  - The team consists of members from internal Sydney Ports Corporations, supported by several independent consultants from Accenture.
  - Close involvement was also provided by stevedores, 1-Stop, empty parks and ACS
- The characteristics of truck and container transactions within the port were established and relevant events in the process cycle were identified. These include:
  - Critical truck data and time-stamps from Queue Arrival to leaving the terminal.
  - Critical operational data from Empty Container Parks and Customs' Container Examination Facility (CEF).
- Overall Trial design and approach was documented in the Trial Approach Document, and was presented for review and validation to the Port Road Taskforce, which consists of representatives from the industry.



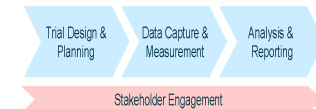
### Data Capture and Measurements:

- All data required by the Trial were collected daily during the normal course of business within the trial period.
- Most data have actually been collected by individual business as part of their daily operations. Additional activities introduced by the trial were mostly around specific data queries and formatting as required and agreed for the trial.
- Additional terminal time-stamp data, which were not normally captured by the terminals, e.g. truck arriving at terminal queue, and leaving terminal gate (DP World) were collected manually through third party data collector / surveyor.
- Operational data were collected from:
  - Patrick and DP World, as the organisations who manage the two terminals at Port Botany
  - 1-Stop as a system provider who supports the VBS operations for the two terminals,
  - Seven participating empty container parks:
    - P&O Trans Australia (1 park)
    - Patrick Port Services (2 parks)
    - Maritime Container Services (2 parks)
    - Tyne Container Services (2 parks)
  - Australian Customs Service (ACS)



### Analysis and Reporting:

- Data collected were consolidated and processed daily by the Trial project team
- Results were then analysed and put into daily reports which were published on SPC web site at the end of the following business day.
- Analysis were also performed against the data on a weekly basis, and weekly reports were published every Tuesdays in the following week.
- At the end of the trial, final analysis was performed to develop overall trial results and findings as reported in this document.



### Stakeholder Engagement :

- SPC engaged all stakeholders during the overall Trial phases, from design and planning through to execution and reporting.
- Stakeholder engagements were performed through different media and events, including:
  - Port Road Taskforce meetings
  - SPC Industry Briefings
  - Information on the Trial was also made available through fliers which were distributed through industry representatives and stevedores
  - Information was also made available on SPC web site ([www.sydneyports.com.au](http://www.sydneyports.com.au)), along with daily and weekly reports.

## Trial Methodology – Sample Size

The Trial analysed roughly 93% of the trucks serviced by both terminals.

- The other 7% of truck had to be excluded due to incomplete data caused by either stevedores' system or by the manual process used to capture additional data points currently not recorded by the terminals.

	DPW	Patrick	Overall
Total Trucks Recorded	5587	5923	11510
Total Trucks Analysed	4891	5785	10676
% Sample Size	87.5%	97.7%	92.8%

The Trial was able to analyse a higher percentage of trucks at Patrick due to the fact that Patrick is now able to capture and provide all data points required by the Trial and, hence, less reliance on manual data capture.

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## Highlights of the Trial

- SPC received full support and cooperation from different stakeholders who provided daily operational data critical to the success of this Trial.
  - These stakeholders include both stevedores, 1-Stop, several participating empty container parks and Customs
- The trial analysed operations at Port Botany in terms of the proposed Peak, Shoulder and Off-Peak time period. The proposed time classification is:
  - Peak: Monday – Friday 5am – 1pm
  - Shoulder: Monday – Friday 1pm – 9pm
  - Off-Peak: Monday – Friday 9pm – 5am, and Friday 9pm - Monday 5am (Off-Peak includes the whole weekend)
- The trial measured Truck Turnaround Time (TTT) from Queue Arrival to Terminal Out-Gate, rather than the traditional measure of In-Gate to Out-Gate.
- For the first time, the trial looked at activities at the Empty Container Parks. There were 7 Empty Container Parks participating in the trial, all are located within the Port Botany area.
- Also for the first time, the trial looked at container inspection activities by Australian Customs Service.
- The trial demonstrated stevedores' ability to provide daily communications and contingency reports in a timely fashion.
- The period surveyed is relatively a small-volume period (total truck trips of around 6,000 / week vs normal weekly average of around 9,000+ truck trips)

## Summary of Analysis (1/2)

1. During the trial, both Stevedores generally met the requirement to provide the minimum 45 slots / hour, except weekends when the demand was low.
2. VBS slot bookings were clearly centred at Peak Hours, with combined utilisation peaked at between 05:00 to 14:00 weekdays (reaching 90% or above during the period), close to the Peak Hour definition of 05:00 to 13:00.
3. In the trial, the Stevedores were able to achieve on average 40-45 minutes of Truck Turnaround Time (TTT).
4. A high variance in Stevedores' performance was observed in the Trial. This resulted in Stevedores ability to process 83-87% of the trucks within the target service time agreed for the trial.
5. During the trial, 81% of trucks arrived within the agreed trial arrival timeframe at the terminals, 9% arrived early and 4% arrived later than the trial timeframe. Around 5% arrived with no bookings made in advance, mostly at DP World terminal.
6. Roughly 40% of trucks had been processed through paperless system
7. The average difference in time recorded between paperless and manual processing was about 5-6 minutes (more than 10% of average Truck Turnaround Time)

## Summary of Analysis (2/2)

8. In terms of Dual Slots processed, the industry is estimated to have achieved 58% of the total possible dual slot demand within the terminals that could have been met in the trial.
9. During the trial, 5% of import containers in the terminals had been left beyond the 3 days normally allocated for pick-up.
10. Industry Communications (Terminal Daily Performance Report and Contingency Report) were carried out through agreed templates in a timely fashion.
11. During the trial, 65% of total operating capacity of participating container parks were utilised.
12. During the trial, the majority of stack runs at the participating parks happened during Peak and Shoulder periods (39% and 44% of total stack runs, respectively)
13. Of all the containers examined at CEF during the Trial, more than 75% were released on the first day of availability and roughly 4% took longer than 24 hours to examine.
  - The CEF operating hours are 05.30 to 22.00 on weekdays and 05.30 to 14.00 on Saturday.

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## Lessons Learnt from Trial Process

- The increased transparency achieved through this trial has improved industry understanding on the baseline performance of the supply chain network servicing Port Botany.
- Consistent and on-time delivery of daily terminal operation data helped achieve efficient data processing and timely daily and weekly report production.
- Pro-active involvement with both stevedores, 1-Stop, participating container parks and ACS improved the quality of the analysis and ensured smooth trial execution.
- SPC is looking forward to having more automated data capture at the terminals for the second Trial, including DP World Out Gate, as it would improve overall efficiency of data processing.
- Further analysis on empty container parks may be needed to improve industry understanding on their operations, including analysis on Truck Turnaround Time at those parks which could not be performed as In Gate and Out Gate data was not captured / available in this Trial.
- Further analysis between Truck Complete and Out Gate may be included in next Trial to provide better understanding of the activities involved.

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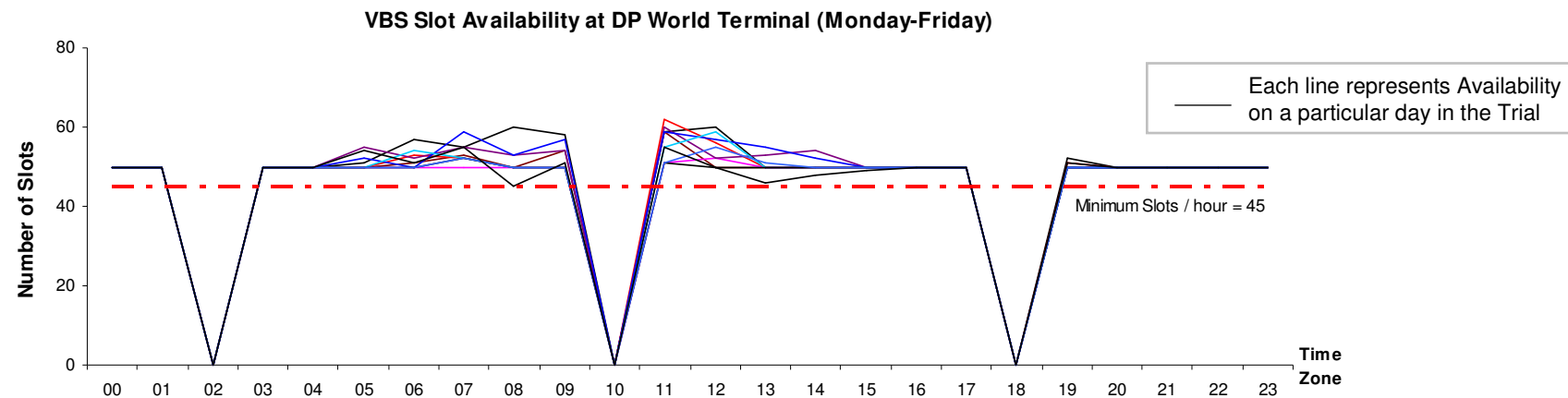
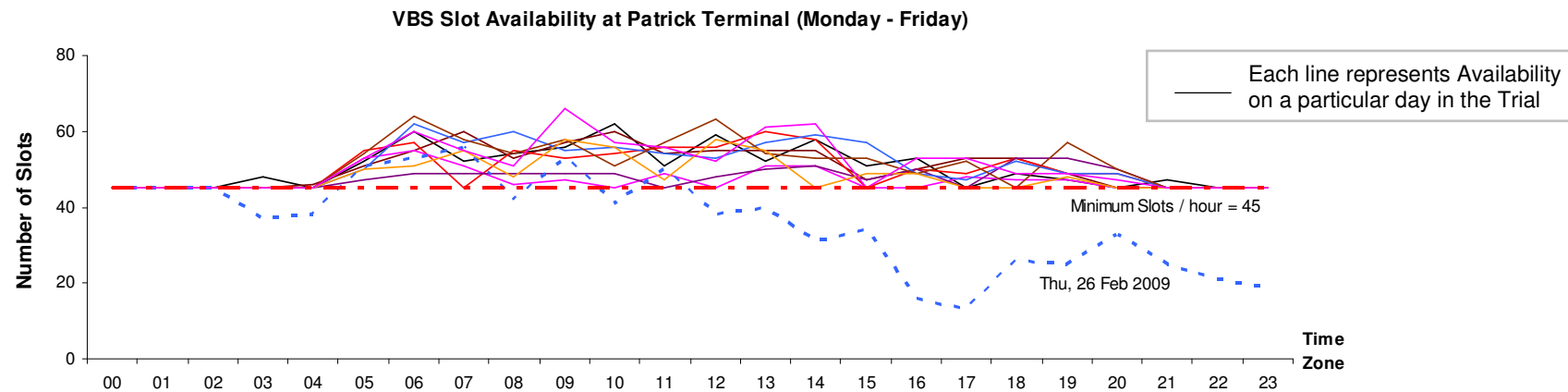


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# VBS Slot Availability (Weekdays)

During the Trial, both Stevedores generally met the requirement to provide the minimum 45 slots / hour during weekdays (Monday – Friday)

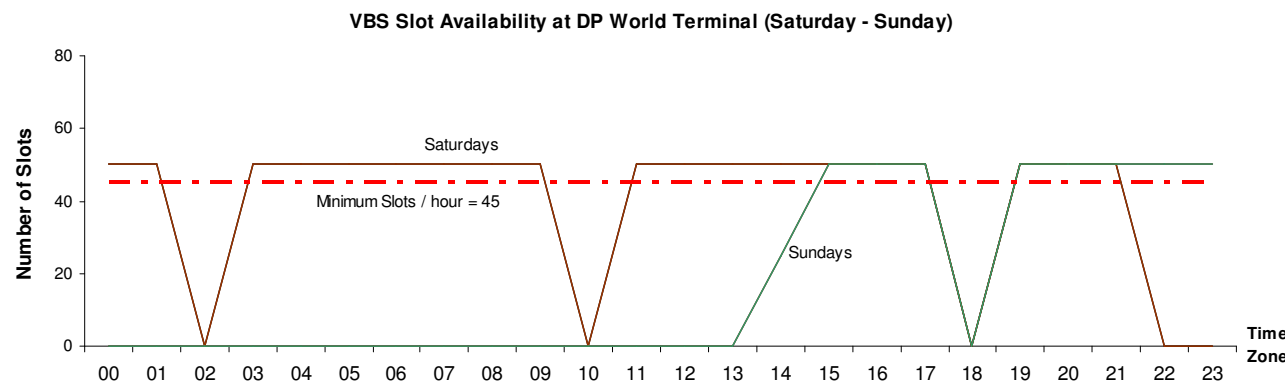
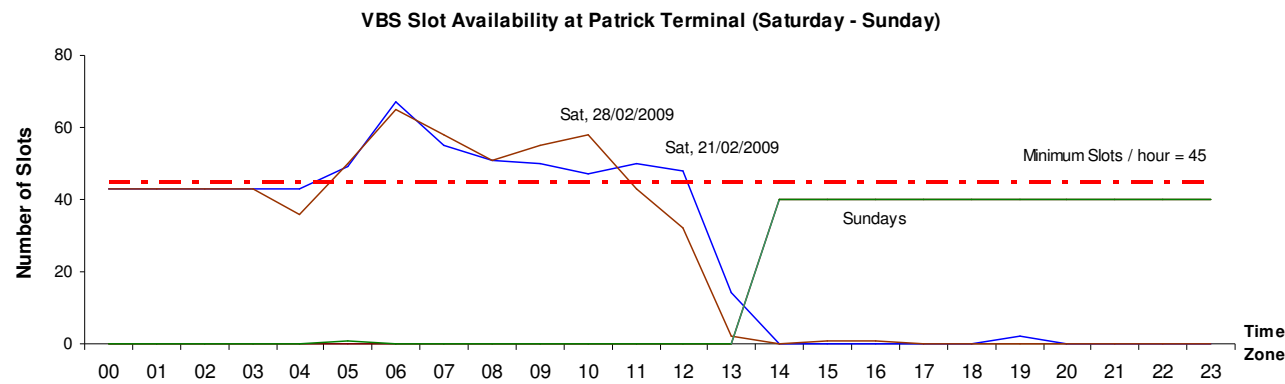
- Patrick provided less than 45 slots / hour on 26 Feb 2009 due to problems with their computer system



# VBS Slot Availability (Weekends)

Both Stevedores generally met the requirement to provide the minimum 45 slots / hour during weekends (Saturday – Sunday), except when Receiving and Delivery (R&D) service was closed between Saturday evening to Sunday afternoon or when demand was low.

- Patrick closed between Saturday 14:00 to Sunday 14:00, and only provided 40 slots on Sunday evenings due to low demand.
- DP World closed between Saturday 22:00 to Sunday 14:00, and provided more than 45 slots / hour when it was open

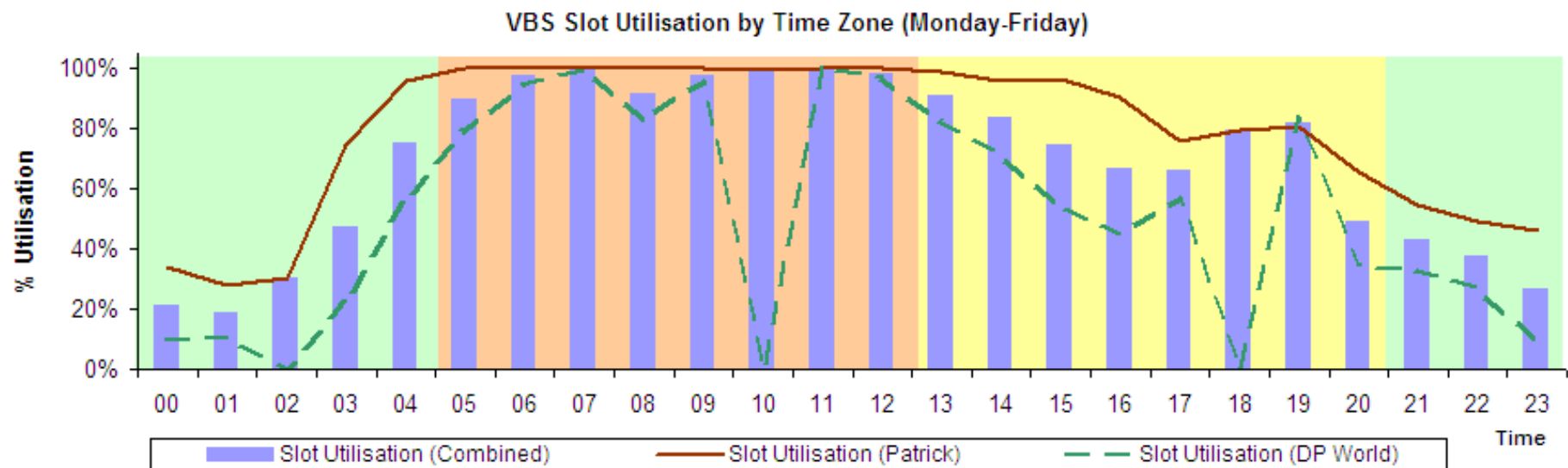


# VBS Slot Utilisation (Weekdays)

During the Trial, VBS slot bookings were clearly centred at Peak Hours.

Combined utilisation peaked at between 05:00 to 14:00 weekdays (reached 90% or above), close to the Peak Hour definition of 05:00 to 13:00

- At Patrick, utilisation peaked (reached 90% or above) at between 04:00 to 17:00
- At DP World, utilisation peaked (reached 90% or above) at between 06:00 to 13:00



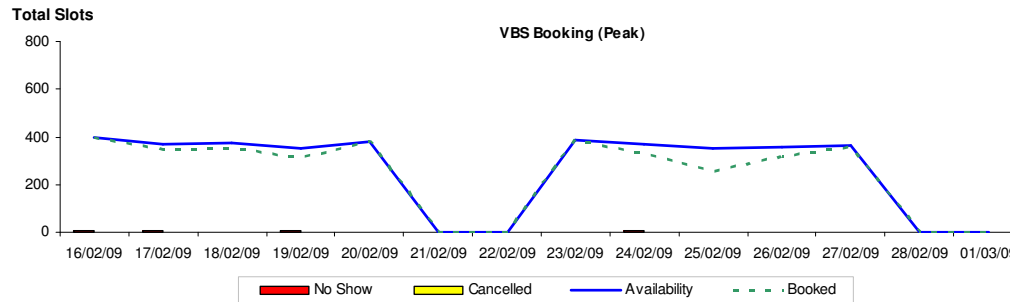
Time Zones	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Slot Utilisation (Patrick)	34%	28%	30%	75%	96%	100%	100%	100%	100%	100%	99%	100%	100%	99%	96%	97%	90%	76%	79%	81%	65%	55%	49%	46%
Slot Utilisation (DP World)	10%	10%	N/A	22%	57%	79%	95%	99%	83%	96%	N/A	100%	97%	83%	72%	54%	45%	57%	N/A	84%	35%	33%	28%	10%
Slot Utilisation (Combined)	21%	19%	30%	47%	75%	90%	98%	100%	91%	98%	99%	100%	99%	91%	84%	75%	67%	66%	79%	82%	49%	43%	37%	26%

Notes:  Peak  Shoulder  Off-Peak  Above 90% utilised

# VBS Slot Utilisation at Peak, Shoulder and Off Peak (DP World)

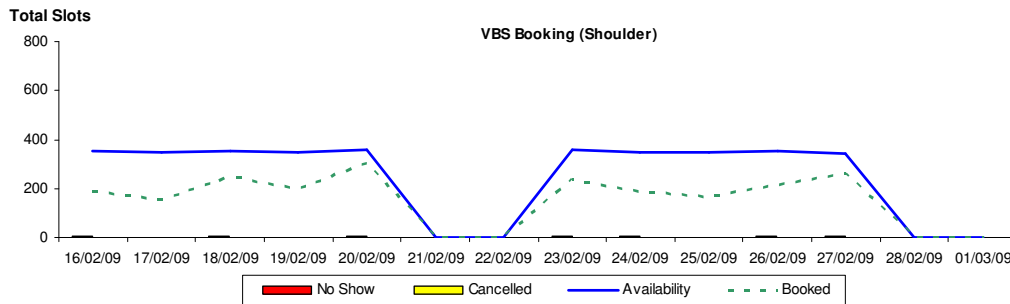


At DP World, more than 90% of slots in Peak Hours were booked. Utilisation was more than 60% for Shoulder, and around 20% in Off-Peak hours



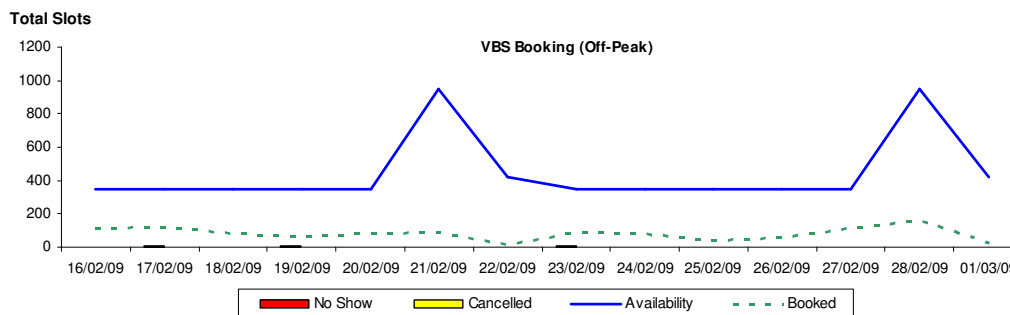
Peak	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009
Availability	400	367	373	353	381	0	0	387	370	353	358	361	0	0
Booked	399	348	350	311	381	0	0	387	329	255	320	360	0	0
No Show	2	4	2	6	1	0	0	2	4	0	1	0	0	0
Cancelled	0	0	0	1	0	0	0	0	0	0	0	0	0	0

93%  
1%  
0%



Shoulder	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009
Availability	352	350	351	350	357	0	0	357	350	350	351	344	0	0
Booked	186	153	246	200	305	0	0	240	190	163	215	257	0	0
No Show	5	1	1	1	4	0	0	4	5	0	2	4	0	0
Cancelled	0	2	0	0	0	0	0	0	0	0	0	0	0	0

61%  
1%  
0%



Off-Peak	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009
Availability	350	350	350	350	350	950	425	350	350	350	350	350	950	425
Booked	111	118	82	62	81	93	15	91	84	43	59	115	159	27
No Show	1	8	3	5	1	0	0	6	1	1	0	4	3	0
Cancelled	0	0	0	0	0	0	0	0	0	0	0	0	0	0

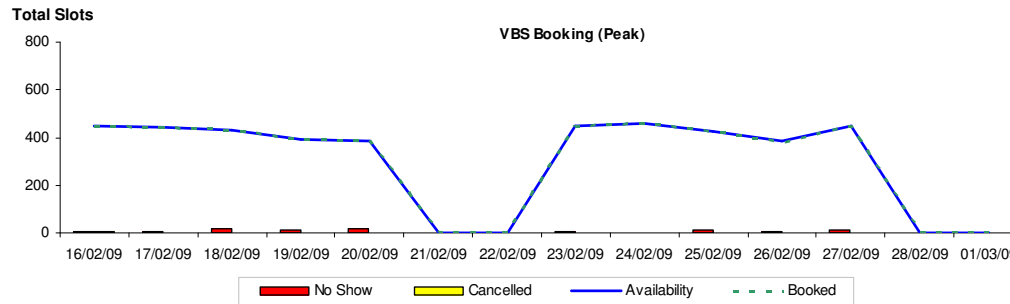
18%  
1%  
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Weekends

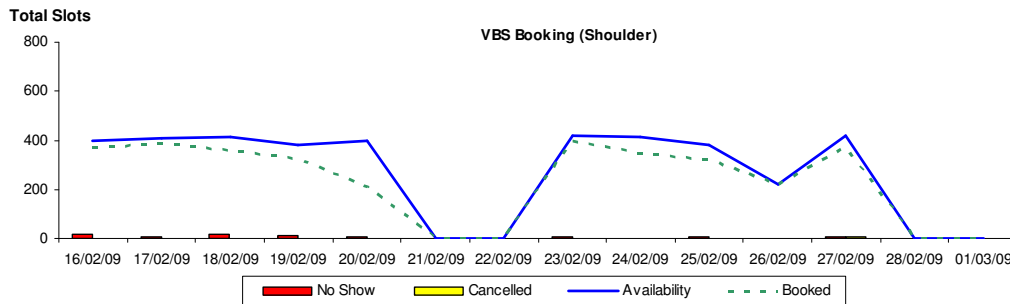
# VBS Slot Utilisation at Peak, Shoulder and Off Peak (Patrick)



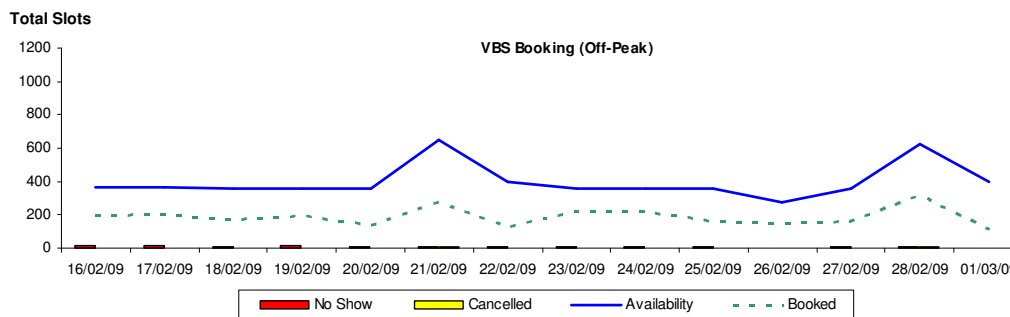
At Patrick, all available slots in Peak Hours were fully (100%) booked. Utilisation was more than 85% for Shoulder, and almost half in Off-Peak hours



Peak	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009
Availability	446	445	431	391	385	0	0	447	459	423	384	450	0	0
Booked	446	445	431	391	385	0	0	447	459	423	381	450	0	0
No Show	8	5	16	9	17	0	0	5	2	12	5	10	0	0
Cancelled	6	0	0	0	0	0	0	2	0	1	0	0	0	0



Shoulder	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009
Availability	400	407	413	379	399	0	0	419	413	381	218	419	0	0
Booked	372	385	358	326	212	0	0	397	346	319	218	371	0	0
No Show	18	6	18	9	5	0	0	6	1	7	2	15	0	0
Cancelled	1	0	0	0	1	0	0	1	0	1	0	6	0	0



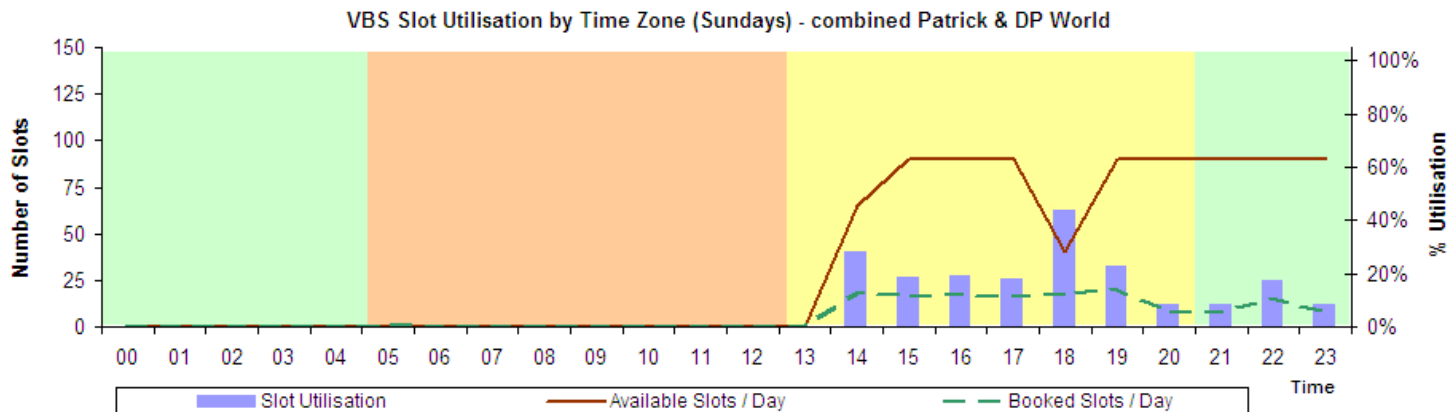
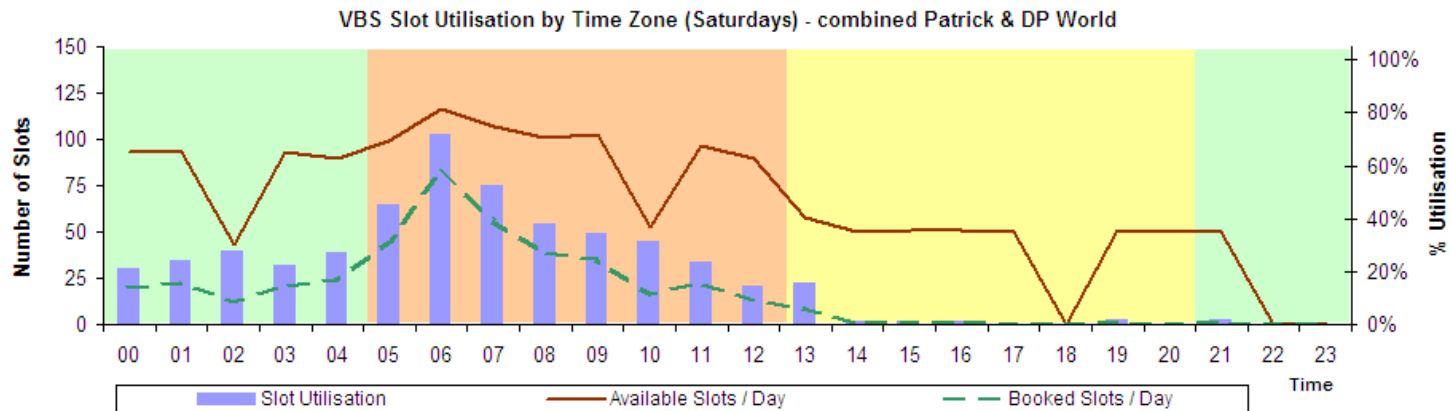
Off-Peak	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009
Availability	365	361	360	360	360	648	400	360	360	360	275	360	624	401
Booked	196	199	172	195	137	278	132	222	221	166	149	160	313	116
No Show	15	14	7	15	8	10	9	7	6	10	1	21	9	4
Cancelled	4	0	0	0	0	6	2	1	0	0	0	1	9	0

Weekends

# VBS Slot Availability and Utilisation (Weekends)

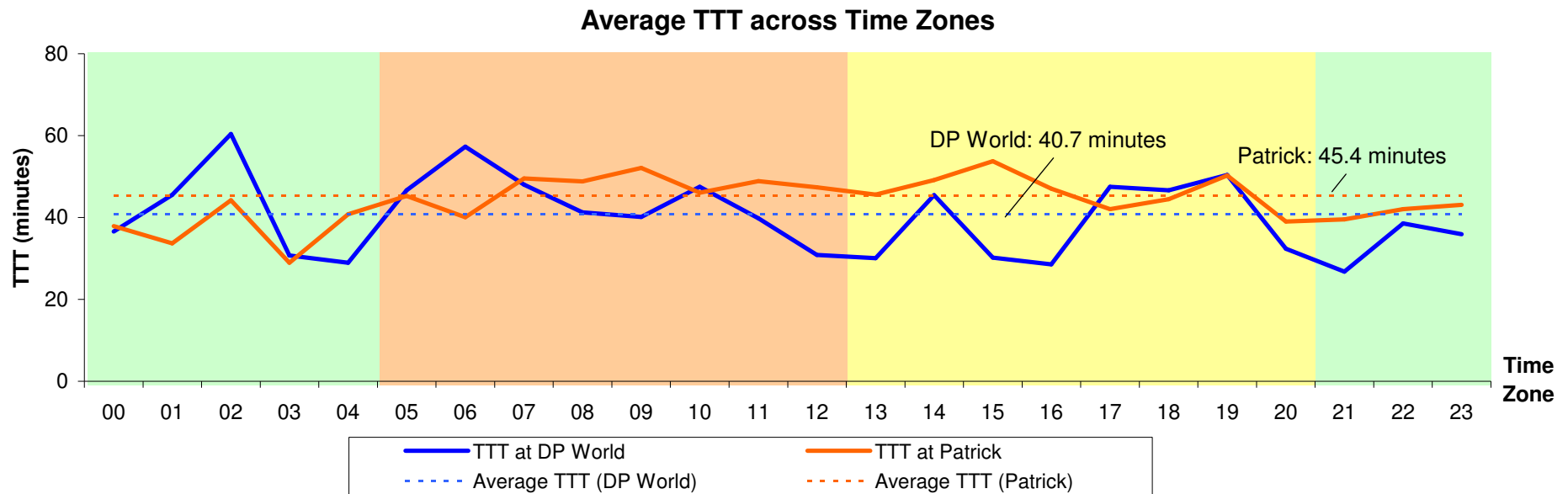
In the Trial, only 20-25% of weekend Slots (in operating hours) were utilised

- Patrick closed between Saturday 14:00 to Sunday 14:00
- DP World closed between Saturday 22:00 to Sunday 14:00



# Truck Turnaround Time (TTT)

During the Trial, the Stevedores were able to achieve on average 40-45 minutes of Truck Turnaround Time (from Queue arrival to Out Gate).



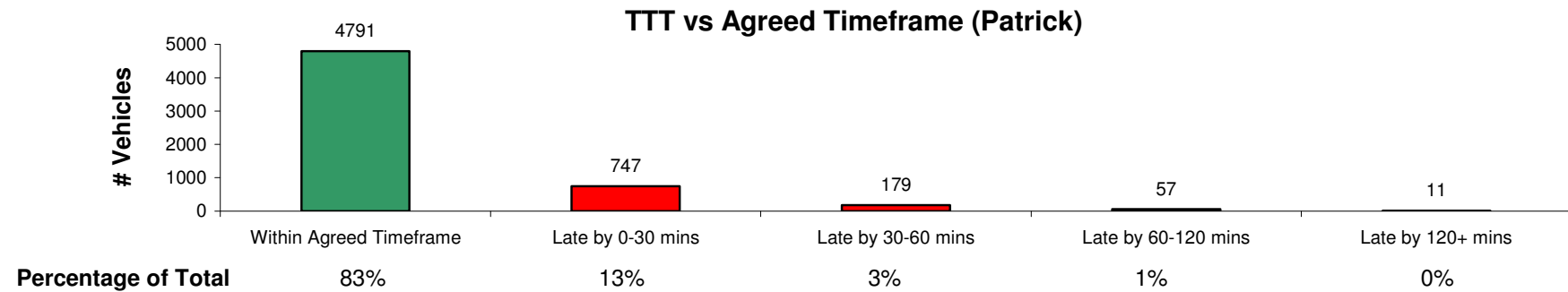
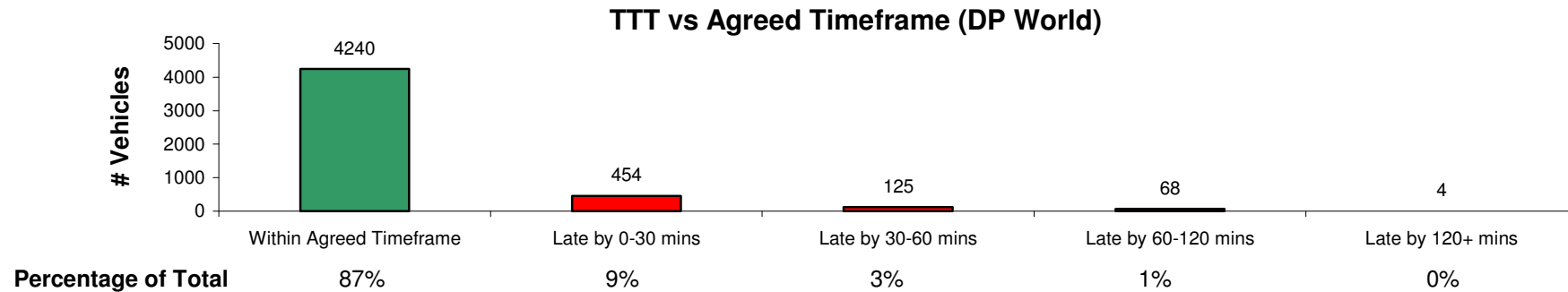
**Notes:**

- Truck Turnaround Time (TTT), also referred to as Vehicle Processing Time, is defined as the time it takes for a vehicle to be processed from the start of Queue to the Out-Gate.
  - However, if a vehicle arrives before the start of its booked Time Zone, TTT would be calculated from the start of the booked Time Zone (i.e. if a truck arrives at 06:50 for a 07:00-08:00 Time Zone, TTT would only be calculated from 07:00)
- The target service time (TTT) in this trial is 60 minutes for first container and 15 minutes for subsequent ones.
  - However, if the truck arrives late target TTT becomes 120 minutes
- Containers/Truck Ratio = 1.30 (DP World) and 1.28 (Patrick)

# Truck Turnaround Time (TTT) – performance against trialled timeframe



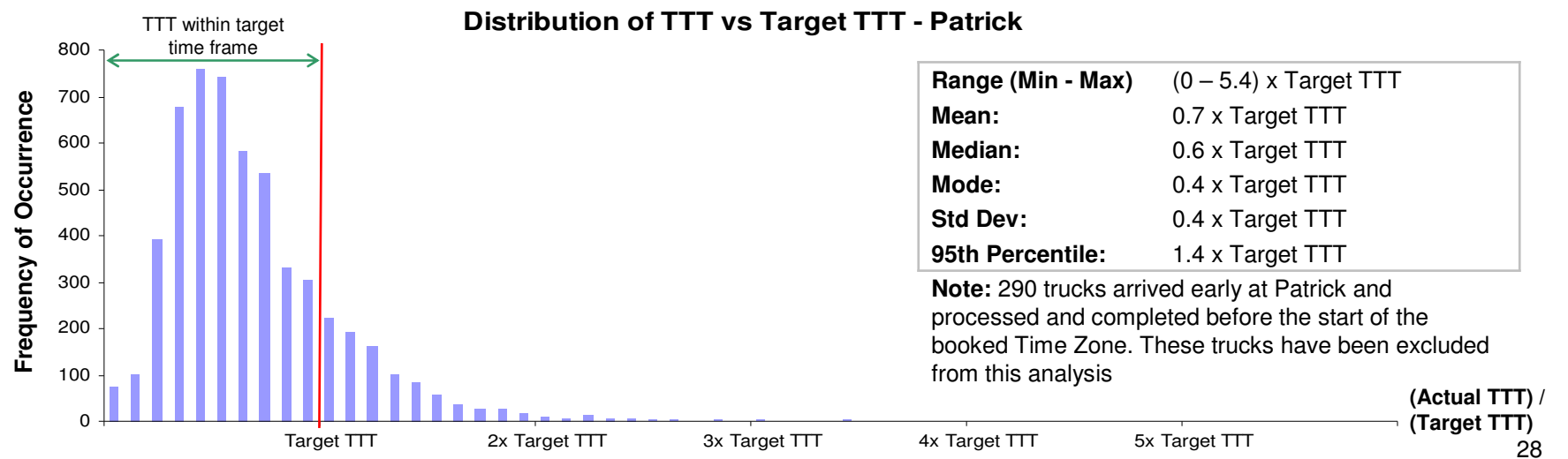
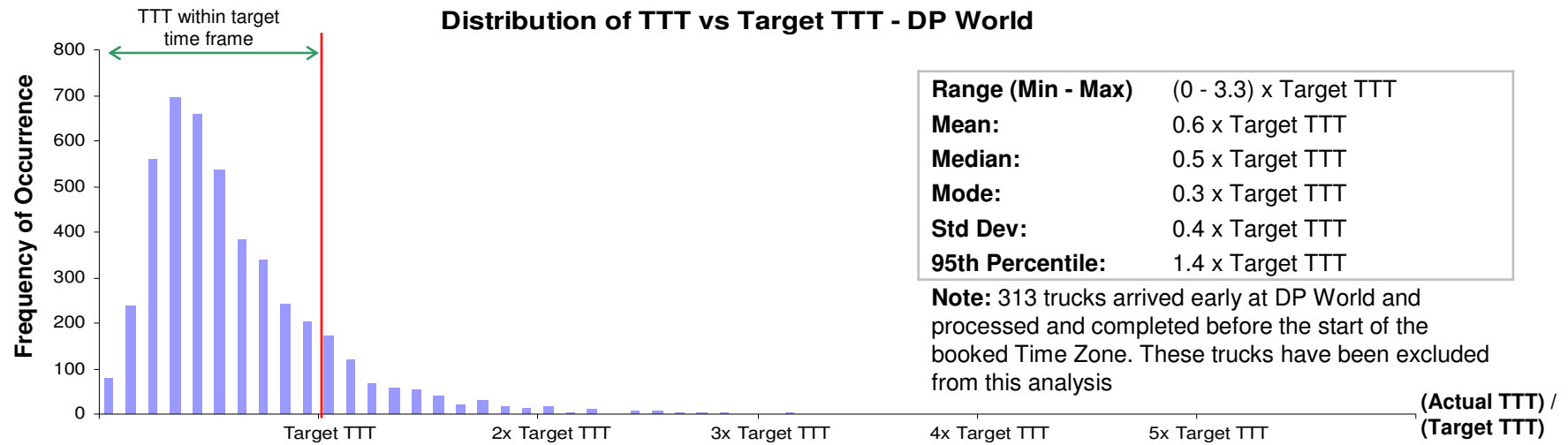
During the Trial, both Stevedores were able to process 83-87% of the trucks within the trialled service timeframe.



# Truck Turnaround Time (TTT) vs Target TTT – Frequency Distribution analysis



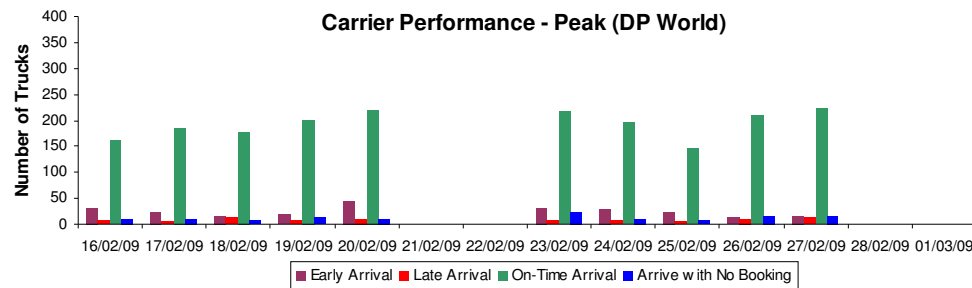
High variance in Stevedores' performance was observed during the Trial



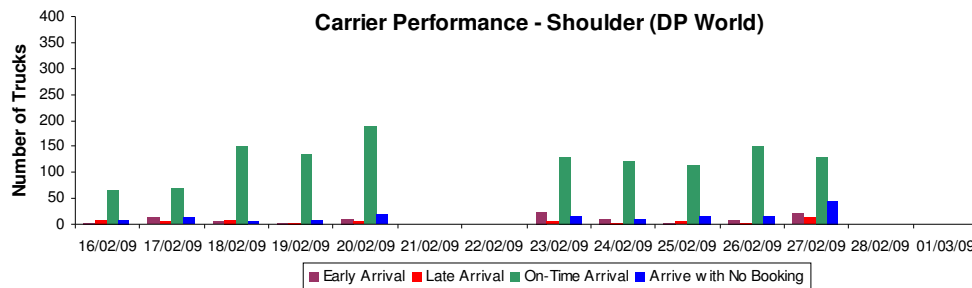
# Truck Arrivals at DP World

During the trial, 77% of trucks arrived within the agreed trial arrival timeframe at DP World.

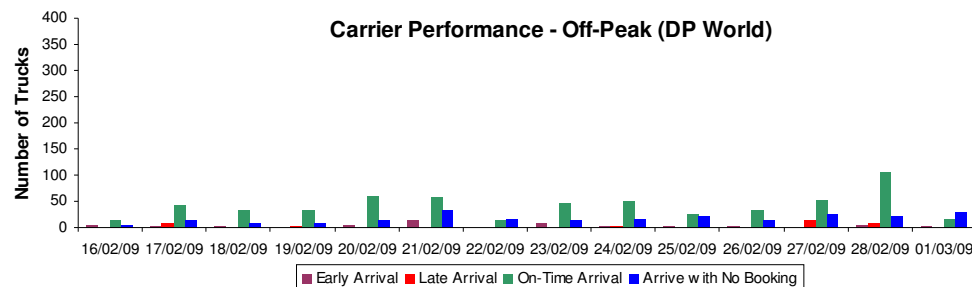
- 8% arrived early and 4% arrived later than the trial timeframe. Almost 11% arrived with no bookings made in advance. Roughly 50% of the No Bookings happened in Off-Peak (including almost 20% in Weekends).



Peak	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009	
On-Time Arrival	161	185	178	202	219	0	0	217	195	146	210	222	0	0	81%
Early Arrival <sup>(1)</sup>	32	24	17	18	45	0	0	32	30	23	13	15	0	0	10%
Late Arrival <sup>(1)</sup>	7	6	12	8	11	0	0	9	9	6	10	14	0	0	4%
No Booking	10	11	8	12	10	0	0	23	11	9	17	16	0	0	5%



Shoulder	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009	
On-Time Arrival	67	68	152	135	189	0	0	131	123	115	151	131	0	0	80%
Early Arrival <sup>(1)</sup>	3	12	4	3	10	0	0	25	10	2	8	22	0	0	6%
Late Arrival <sup>(1)</sup>	9	5	9	3	6	0	0	6	3	6	2	14	0	0	4%
No Booking	7	12	6	7	18	0	0	16	11	15	17	45	0	0	10%



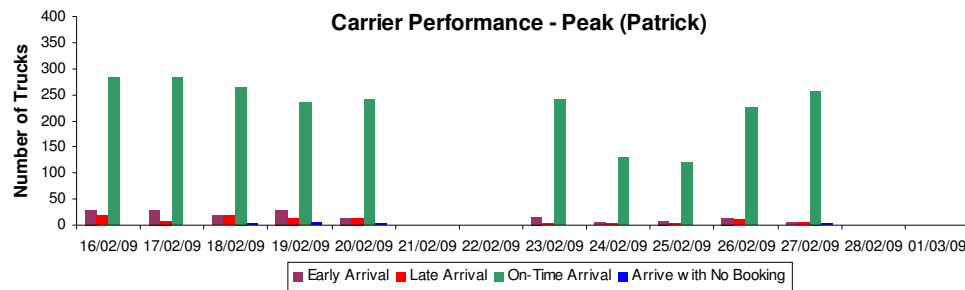
Off-Peak	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009	
On-Time Arrival	12	41	33	35	60	58	12	47	50	27	35	53	106	16	64%
Early Arrival <sup>(1)</sup>	5	3	2	0	5	12	0	7	2	3	2	1	6	3	6%
Late Arrival <sup>(1)</sup>	0	7	0	3	0	0	0	1	3	0	1	12	7	1	4%
No Booking	6	14	9	8	13	35	15	12	15	22	14	27	21	28	26%

Weekends

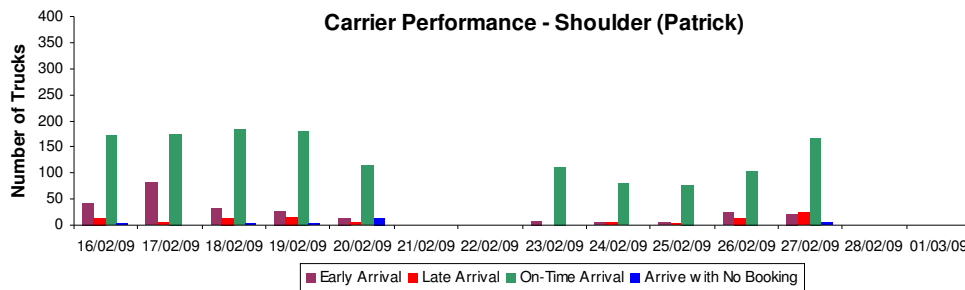
# Truck Arrivals at Patrick

During the trial, 85% of trucks arrived within the agreed trial arrival timeframe at Patrick.

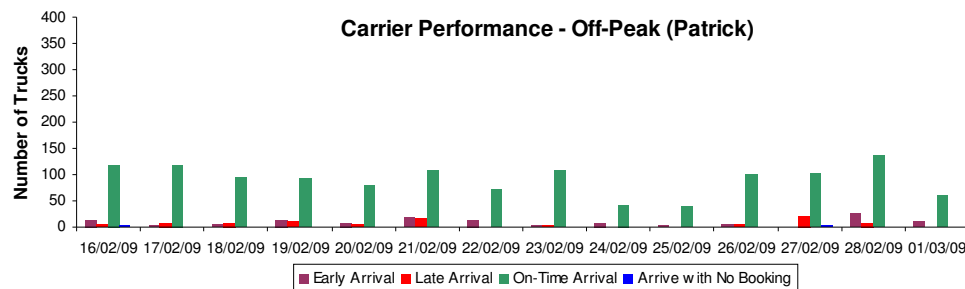
- Almost 10% arrived early and 5% arrived later than the trial timeframe. Less than 1% arrived with no bookings made in advance (mostly trucks from regional NSW).



Peak	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009	
On-Time Arrival	284	283	264	237	240	0	0	241	130	119	225	258	0	0	89%
Early Arrival <sup>(1)</sup>	30	29	19	30	14	0	0	15	4	8	13	4	0	0	7%
Late Arrival <sup>(1)</sup>	18	7	18	14	13	0	0	2	2	2	11	4	0	0	4%
No Booking	0	0	2	4	3	0	0	0	0	0	0	3	0	0	0%



Shoulder	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009	
On-Time Arrival	171	174	183	179	115	0	0	112	79	76	103	167	0	0	78%
Early Arrival <sup>(1)</sup>	42	83	31	26	12	0	0	8	6	4	24	20	0	0	15%
Late Arrival <sup>(1)</sup>	14	6	12	15	6	0	0	0	4	2	12	23	0	0	5%
No Booking	2	0	2	3	12	0	0	0	0	0	1	6	0	0	1%



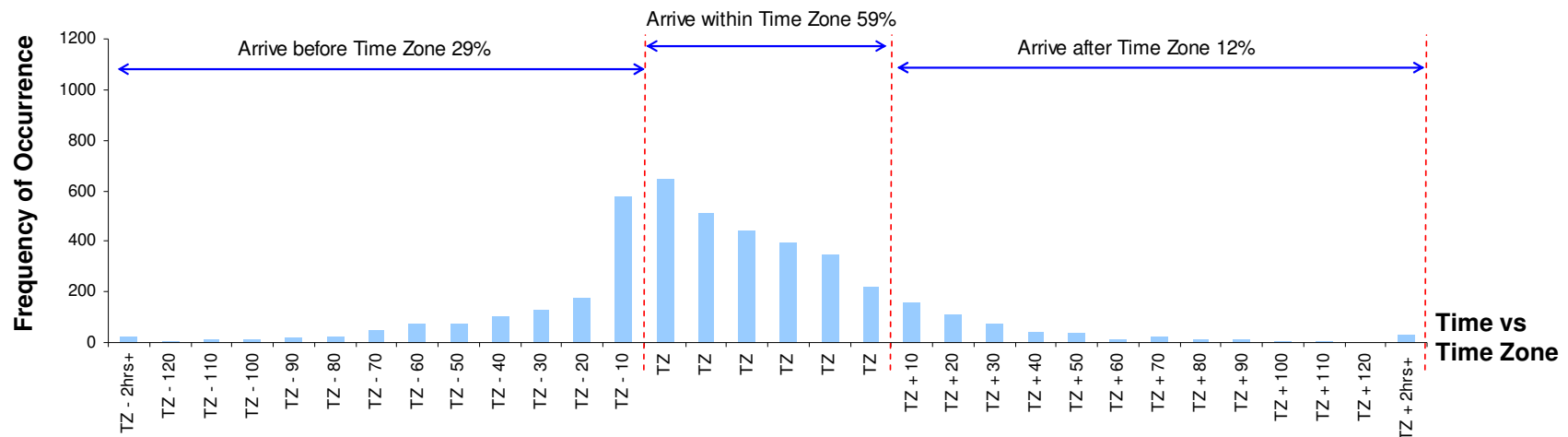
Off-Peak	16/02/2009	17/02/2009	18/02/2009	19/02/2009	20/02/2009	21/02/2009	22/02/2009	23/02/2009	24/02/2009	25/02/2009	26/02/2009	27/02/2009	28/02/2009	01/03/2009	
On-Time Arrival	119	118	96	93	79	107	71	109	41	40	100	103	137	60	85%
Early Arrival <sup>(1)</sup>	14	2	6	12	8	19	13	3	7	3	6	1	27	11	9%
Late Arrival <sup>(1)</sup>	6	7	7	11	5	16	0	3	0	0	4	21	8	0	6%
No Booking	2	0	0	0	0	1	0	1	0	0	0	2	0	1	0%

 Weekends

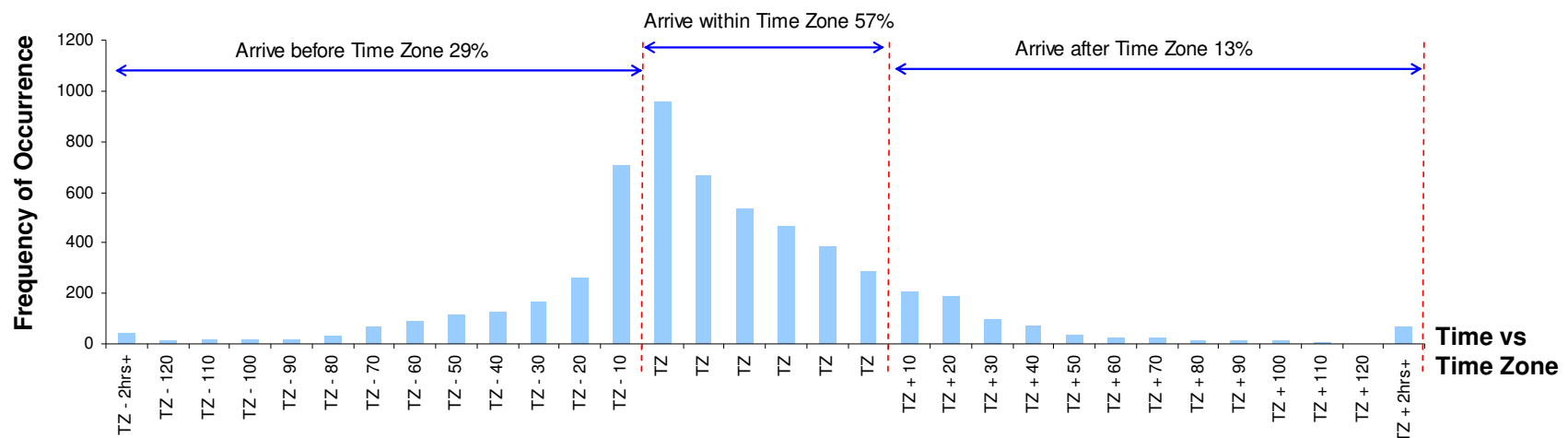
# Truck Arrivals – Distribution of Arrivals against Time Zone

Analysis against the booked Time Zone indicates that during the trial, about 58% of trucks arrived within the Time Zone, 29% before and 13% after.

**Truck Arrival Distribution at DP World**



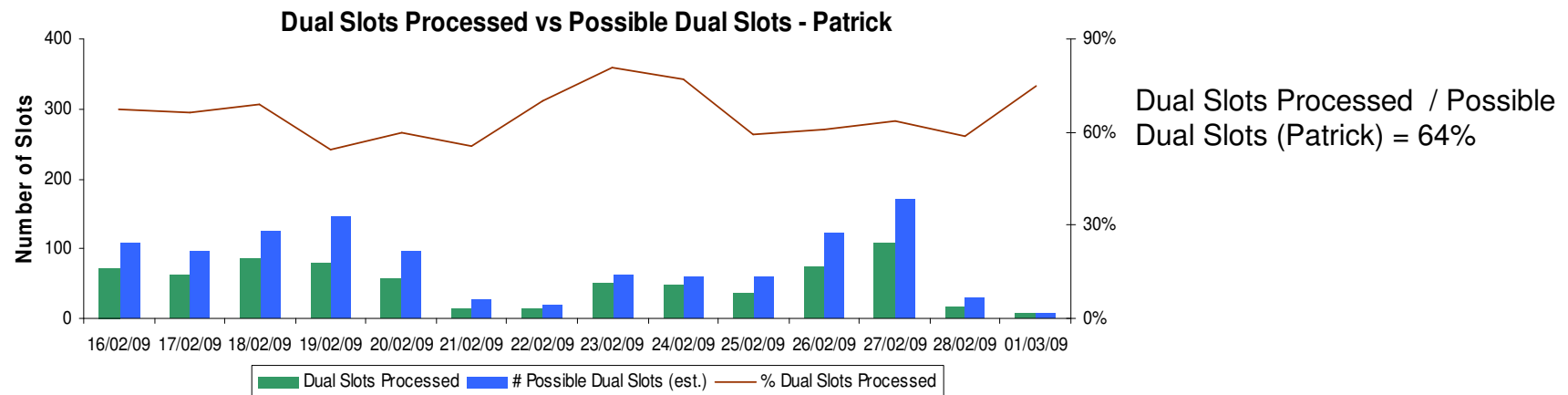
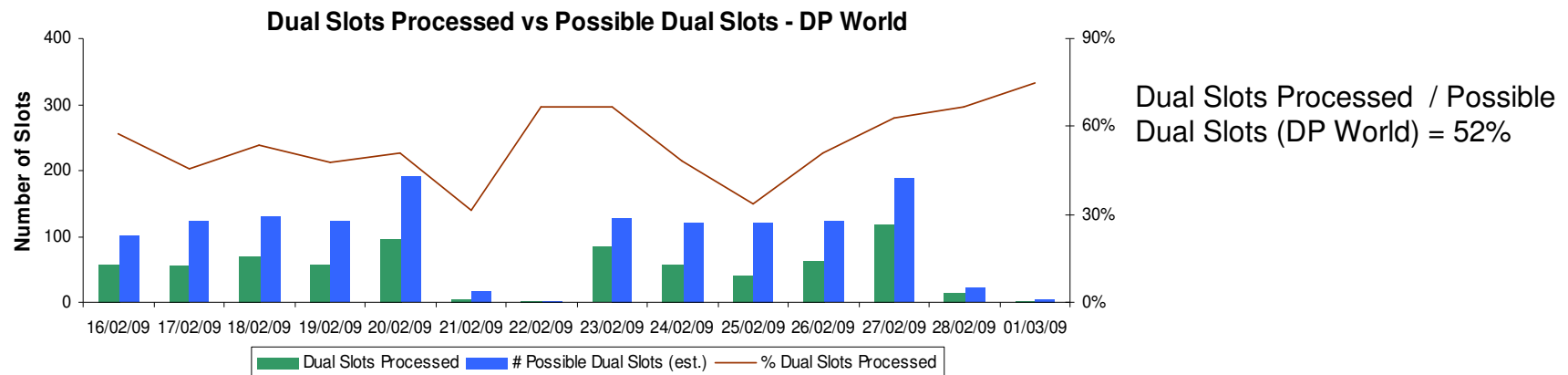
**Truck Arrival Distribution at Patrick**



# Dual Slots

In terms of Dual Slots processed, the industry is estimated to have achieved 58% of the total possible dual slots within the terminals<sup>(1)</sup> that could have been met during the trial.

- The number of possible dual slots was calculated by analysing the number of export and import containers processed by the same carrier within the same calendar day.



**Note:** (1) The Trial only analysed dual slots within the terminals (i.e. processing export and import containers in a single truck trip) and did not analyse dual runs within the overall port precinct (eg. trucks visiting a terminal and an empty park on the same trip).

## **DP World**

- During Trial around 32% of the trucks arriving at Patrick terminal had been processed using Paperless system
- The difference in overall TTT between paperless and manual trucks is around 5.9 minutes (14.5% of average TTT)

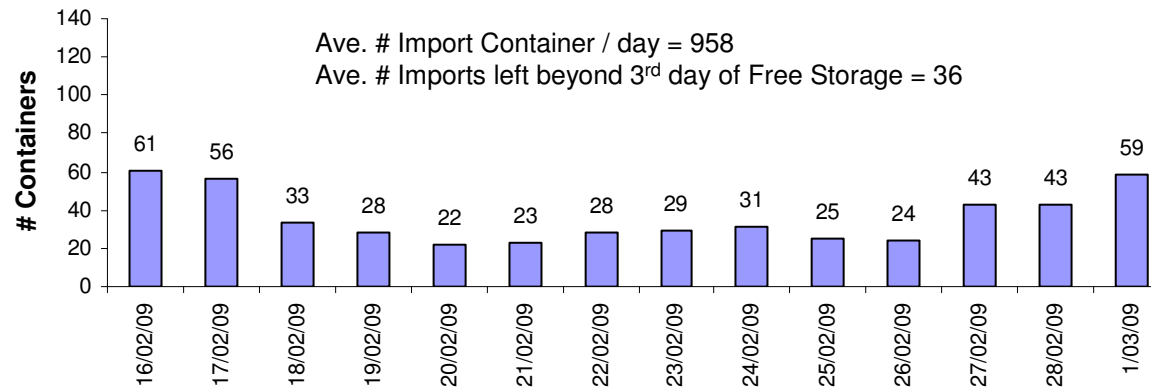
## **Patrick:**

- During Trial around 46% of the trucks arriving at Patrick terminal had been processed using Paperless system
- The difference in overall TTT between paperless and manual trucks is around 4.6 minutes (10.1% of average TTT)

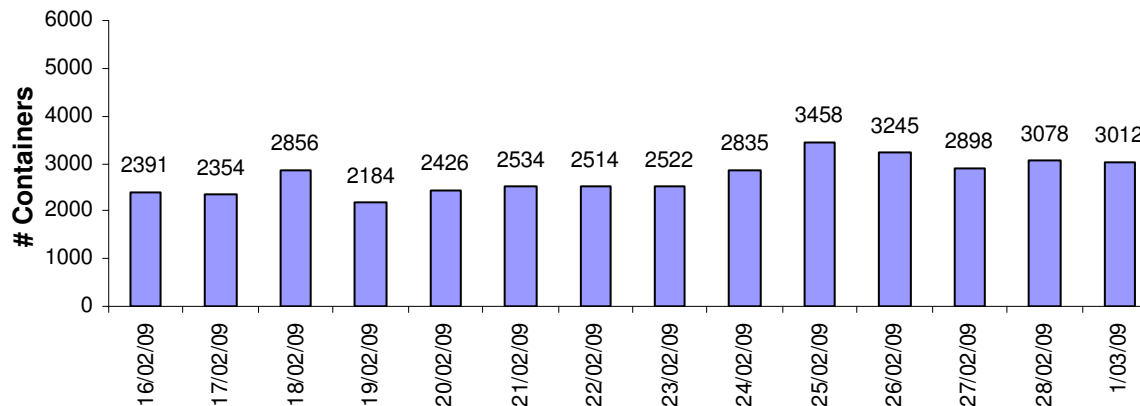
# Container Dwell Time (DP World)

During the Trial, 4% of import containers in DP World terminal had been left beyond the 3 days normally allocated for pick-up

**Number of containers beyond 3rd day of Free Storage - DP World**



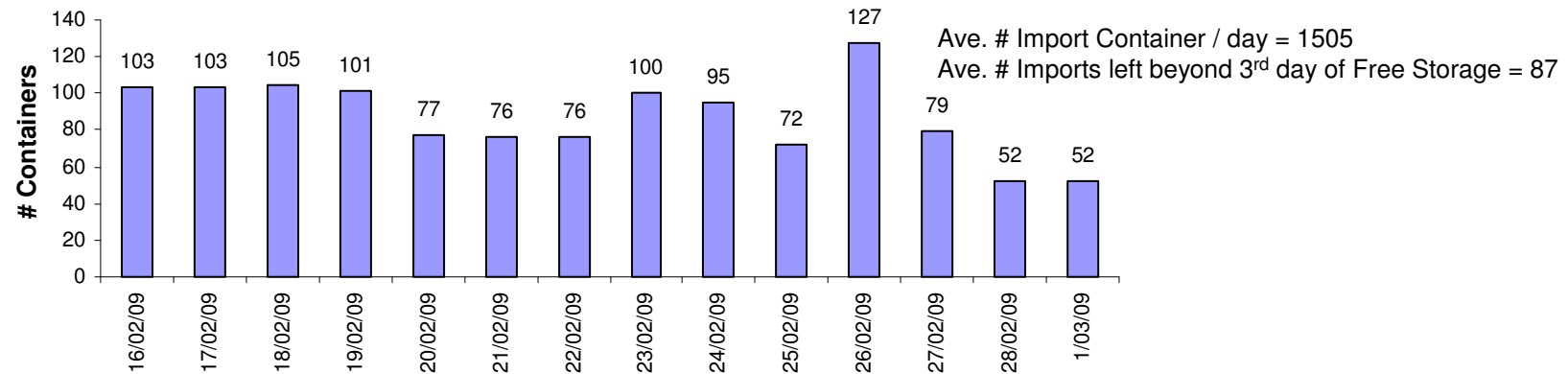
**Total Containers at Terminal (incl. Export, Import, empties) - DP World**



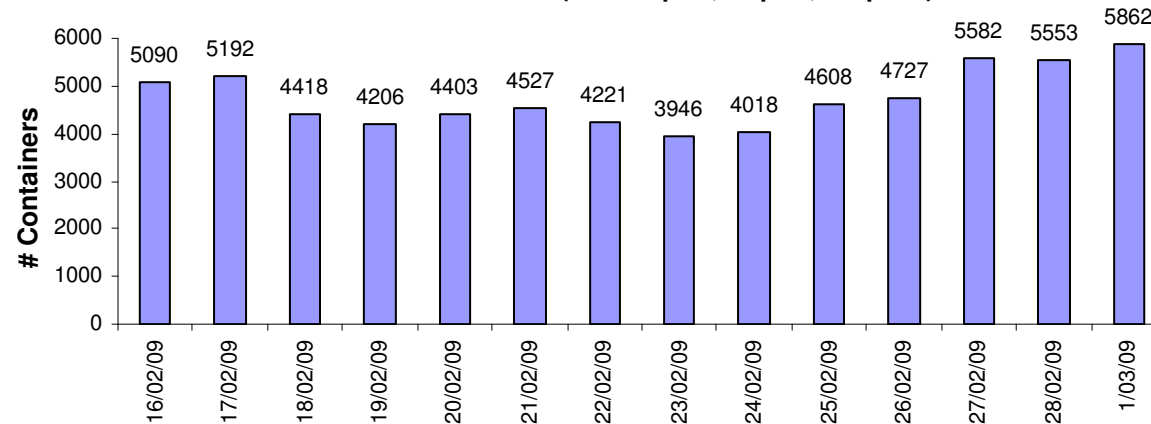
# Container Dwell Time (Patrick)

During the Trial, 6% of import containers in Patrick terminal had been left beyond the 3 days normally allocated for pick-up

**Number of containers beyond 3rd day of Free Storage - Patrick**



**Total Containers at Terminal (incl. Export, Import, empties) - Patrick**



# Industry Communications



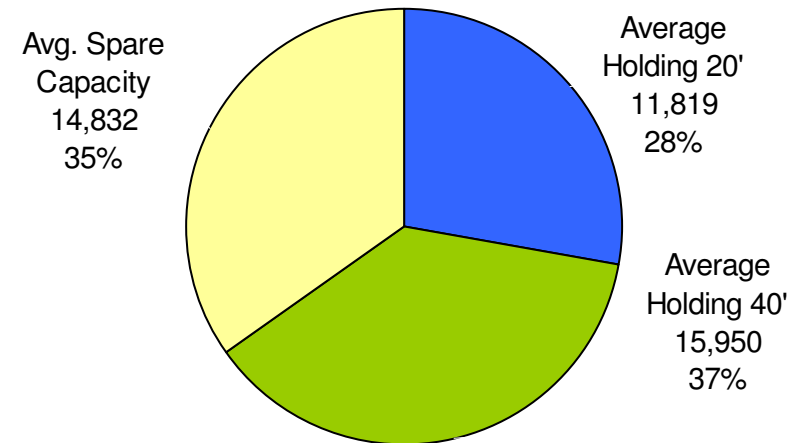
- The objective of the industry communications was to improve efficiency and transparency across the Supply Chain by providing reliable and timely information to all relevant parties.
- During the trial period, Stevedores provided information on their Daily Terminal Performance through emails, and those reports were subsequently published on the SPC website.
- Furthermore, the Stevedores have also published contingency reports in the format agreed via the 1-stop VBS system to inform industry about any contingencies at the terminal
  - Patrick released 3 contingency reports (1 report on 24<sup>th</sup> Feb and 2 reports on the 26<sup>th</sup> Feb)
  - DPW released 2 contingency reports on 19<sup>th</sup> and 27<sup>th</sup> Feb

# Empty Container Parks – Capacity Utilisation

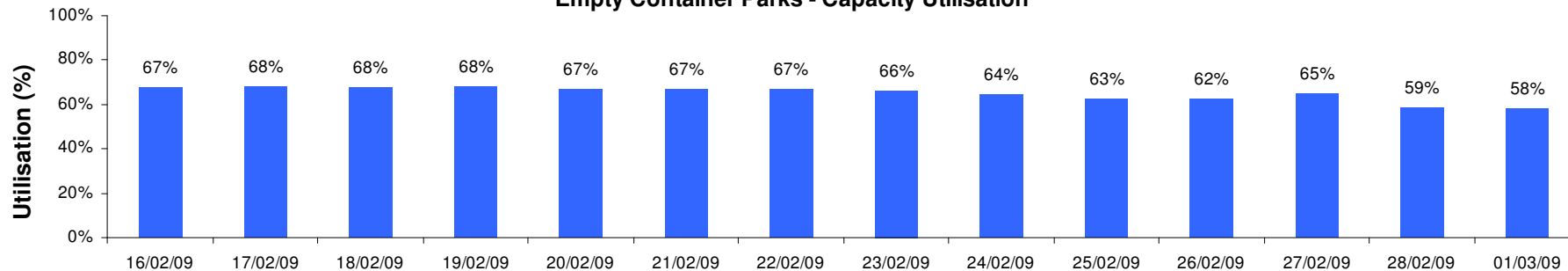
During the trial, 65% of total operating capacity of participating container parks were utilised.

**Container Parks Capacity & Usage (in TEUs)**

<b>Total Capacity</b>	<b>42,600</b> TEUs	
<b>Average Holding 20'</b>	<b>11,819</b> TEUs	
<b>Average Holding 40'</b>	<b>15,950</b> TEUs	
<b>Average Holding</b>	<b>27,768</b> TEUs	<b>65%</b>
<b>Avg. Spare Capacity</b>	<b>14,832</b> TEUs	<b>35%</b>



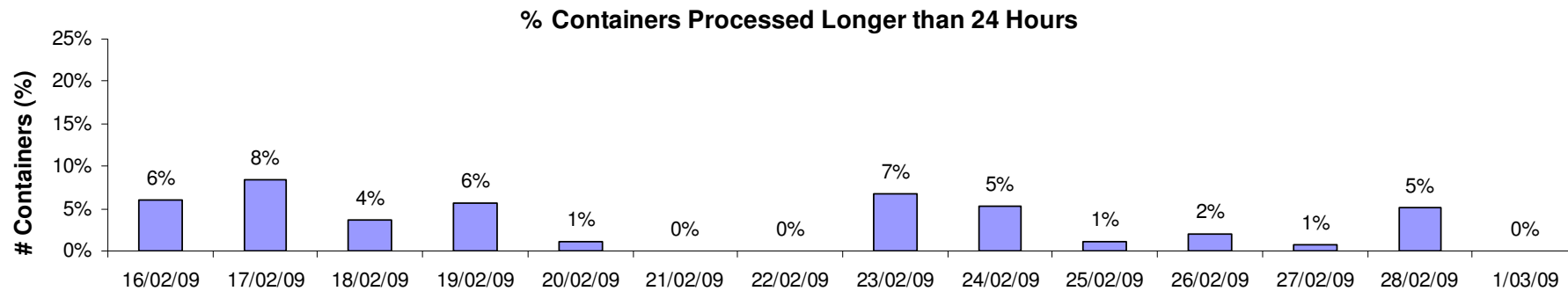
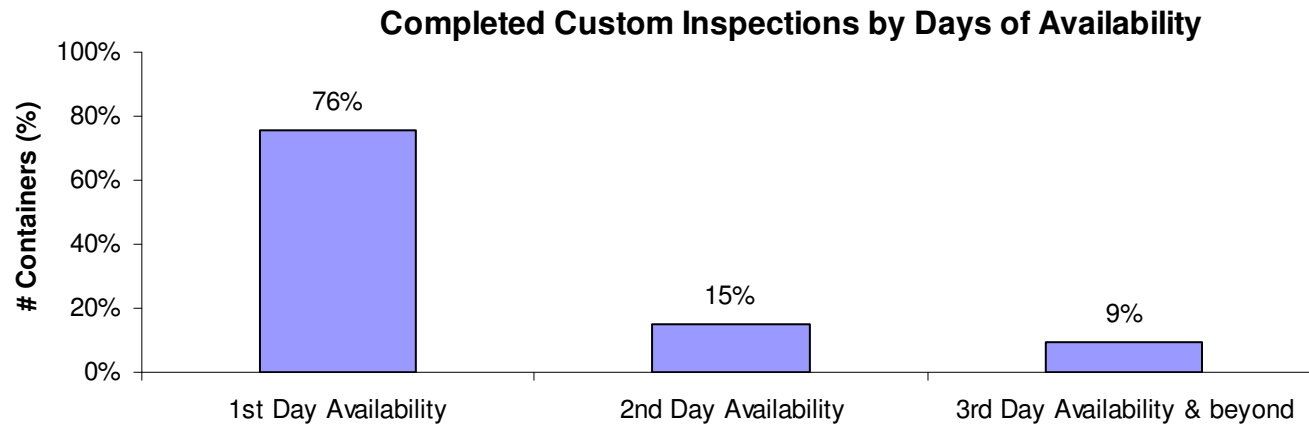
**Empty Container Parks - Capacity Utilisation**



# Customs - Container Examination Facility (CEF)

Of all the containers processed at CEF during the Trial, more than 76% were released on the first day of availability and on average around 4% took longer than 24 hours to process.

- The CEF operating hours are 05.30 to 22.00 on weekdays and 05.30 to 14.00 on Saturday



# Table of Contents



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- 2. SCOPE & METHODOLOGY**
- 3. TRIAL HIGHLIGHTS**
- 4. LESSONS LEARNT**
- 5. ANALYSIS AND RESULTS**
- 6. APPENDIX**

## Detail Definition of Trialled Performance Indicators (1 of 4)

Performance Indicators	Definition	Comments
VBS – number of slots available per hour	<ul style="list-style-type: none"> <li>The number of slots made available per hour including extra slots added after slots are initially released</li> </ul>	Minimum number <ul style="list-style-type: none"> <li>DPW – 21hrs x 45 slots = 945</li> <li>Patrick's – 24hrs x 45 slots = 1080</li> </ul>
Patronage of non-peak slots	Formula: $(\text{Total Booked Slots in Off-Peak}) / (\text{Total Available Slots in Off-Peak})$	Off Peak period is defined as <ul style="list-style-type: none"> <li>Monday – Friday 9pm – 5am</li> <li>Friday 9pm - Monday 5am</li> </ul>
Patronage of weekend slots	Formula: $(\text{Total Booked Slots in Weekend}) / (\text{Total Available Slots in Weekend})$	Weekend period is defined as: <ul style="list-style-type: none"> <li>Saturday and Sunday</li> </ul>
Patronage of shoulder slots	Formula: $(\text{Total Booked Slots in Shoulder period}) / (\text{Total Available Slots in Shoulder period})$	Shoulder period is defined as <ul style="list-style-type: none"> <li>Monday – Friday 1pm – 9pm</li> </ul>
Patronage of peak slots	Formula: $(\text{Total Booked Slots in Peak period}) / (\text{Total Available Slots in Peak period})$	Peak period is defined as <ul style="list-style-type: none"> <li>Monday – Friday 5am – 1pm</li> </ul>

## Detail Definition of Trialled Performance Indicators (2 of 4)

Performance Indicators	Definition	Comments
Dual Slots	A Dual Slot is defined as when a truck delivers at least an export and picks up at least an import container in a single trip.	Data was provided by Stevedores for Trial 1
Vehicle Processing Time	<p>Vehicle Processing Time or Truck Turnaround Time (TTT) is defined as the time it takes for a vehicle to be processed from the start of Queue to the Out Gate.</p> <p>If a vehicle arrives earlier than the booked Time Zone, TTT is calculated from the start of the booked Time Zone</p> <p>Vehicle Processing Time would be analysed against agreed benchmark of 60 minutes for initial container and 15 minutes for every subsequent container on the same vehicle.</p>	<ul style="list-style-type: none"> <li>• Patrick: Time Stamp (Out Gate) - Time Stamp (Queue)</li> <li>• DPW: Time Stamp (Out Gate, captured manually in Trial 1) - Time Stamp (Queue, captured manually in Trial 1)</li> </ul> <p>For Trial 1, Queue arrival point is defined as:</p> <ul style="list-style-type: none"> <li>• DPW: corner of Charlotte Road and Friendship Road</li> <li>• Patrick: MSIC gate at Penrhyn Road.</li> </ul>
Container Processing Time	Container Processing Time is defined as the time between start and finish of the loading/unloading process of the containers onto/off the vehicle	<ul style="list-style-type: none"> <li>• After consultation with Stevedores, this indicator was <u>not</u> analysed / reported in Trial 1</li> </ul>
Late Arrivals	Late Arrival is defined as arrival at the Queue more than 30 minutes from the End of the booked Time Zone	
Early Arrivals	Early Arrival is defined as arrival at the Queue more than 30 minutes earlier than the Start of the booked Time Zone	

## Detail Definition of Trialled Performance Indicators (3 of 4)

Performance Indicators	Definition	Comments
No shows	<p>A No Show is defined as when a carrier books a time slot but fails to arrive for the booking and/or the scheduled container transaction is not possible to complete due to incorrect carrier/cargo owner process.</p> <p>The process to determine No Shows is done at midnight.</p>	Data was provided by Stevedores / 1-stop
Container Dwell times	<p>Dwell Time (from Discharge Date): Container dwell time is defined as the length of time (in days) that an import container stays at the dock after it is discharged from the vessel.</p> <p>Dwell Time (from First Free Day): Container dwell time is defined as the length of time (in days) that an import container stays at the dock starting from the first free day of storage.</p>	The trial measured both definitions
Electronic Processing (Paperless)	A truck process is considered paperless when its paperwork submission is done electronically before the vehicle arrives and the truck is manifested through 1-Stop Autogate system	
Industry Communications - Operational information	Operational Information is to be provided at end of the Shift (Trial 1: at end of Day)	Means of communication: - 1-Stop message board (current method) - Email (current method)

## Detail Definition of Trialled Performance Indicators (4 of 4)

Performance Indicators	Definition	Comments
Industry Communications – Contingency information	<ul style="list-style-type: none"> <li>Contingency event is defined as per the contingency protocol of each Terminal</li> <li>Information to be distributed within <u>one hour</u> from the start of the problem/issue</li> </ul>	Means of communication: <ul style="list-style-type: none"> <li>- 1-Stop message board (current method)</li> <li>- Email (current method)</li> </ul>
Container Examination Facility (CEF) - Container Availability	Container availability from CEF (Customs) is defined as the number of days a container is made available by Customs	Customs provided % containers processed by day of availability (1 <sup>st</sup> , 2 <sup>nd</sup> day and beyond) and % containers held for more than 24 hours.
Empty Container Parks	Baseline current performance around: <ul style="list-style-type: none"> <li>Usage of park capacity</li> <li>Daily container movements</li> <li>Volumes per hour</li> <li>Queues at certain time in the day.</li> </ul>	

# Template for Terminal Daily Operational Information



## Daily Operation Report - Port Botany

**Terminal** DP World or Patrick  
**Date:** dd-mmm-yyyy hh:mm

### Sea-Side Activities:

#### Vessels At Berth

- Vessel 1
- Vessel 2
- Vessel 3 etc

#### Vessels Scheduled to Berth within next 24 hours

- Vessel 1
- Vessel 2
- Vessel 3 etc

### Land-Side Activities:

<b>Total Trucks</b>	524
<b>Average TTT (mins)</b>	54.5
00 - 30	336
30 - 60	107
60 - 90	42
90 - 120	30
> 120	9

Standby	Trucks	Containers
Total	135	160
%	25.8%	20.13%

<b>Stack Runs</b>	160
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### Overall Terminal Status

- Text text text
- Text text text
- Text text text

# Template for Terminal Contingency Information

## Template for Contingency Reporting

Terminal: XXXX  
 Date: dd/mm/yyyy hh:mm

Issue:	Asset Break down
Short Description of the Issue:	2 out of the 4 cranes are not working
Impact of the Issue:	Congestion at the port
Duration of Expected Delays:	1 hours
Commencement time of the issue:	19/01/2009 14:00
Approximate time to resolve the issue:	Expect to be resolved in 3 hours
Resolution action:	<ul style="list-style-type: none"> <li>• Onsite technicians looking into the issue</li> <li>• An update will be sent in 1 hour to report on progress of the issue</li> </ul>

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