NOTE

Sub : Inter Ministerial Committee(IMC) for improving 'Turn-Round-Times'(TRT) of Railway freight trains across Ports

Ref : ERB-I's O.O. No. ERB-I/2017/23/88 dated 22.12.2017

With respect to the above reference, the Committee has hereby submitted the Report on 20th January, 2018 and put up for perusal.

Shri. Anoop Kumar Agarwal,
Managing Director, IPRCL

Shri. M.TKrishna Babu,
Chairman,Visakapatanam Port Trust.

Shri. P.Raveendran Chairman,
Chennai Port Trust

Shri. Rinkesh Roy, Chairman,
Paradeep Port Trust

Dr.Monica Agnihotri,
ED/Freight Marketing, Railway Board.

20/1
Shri. T.Sivakumar, CCM.(FM),
Southern Railway.

Prem Sagar
20.1.18
Shri.Prem Sagar Gupta,
ED/CE(G), Railway Board.

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Shri. G.V.L.Satya Kumar,
ED/Strategic Planning, Railways Board

Steps to reduce

Turn Round Time (TRT) of Freight Trains at Ports

20th January 2018

A Report Submitted by the Inter Ministerial Committee (IMC)

between

Ministry of Railways

and

Ministry of Shipping

EXECUTIVE SUMMARY

Vide O.O. No. ERB-1/2017/23/88 dated 22nd December 2017, Ministry of Railways in consultation with Ministry of Shipping have formed an Inter Ministerial Committee (IMC) with specific reference as : **"Steps to be taken to reduce Turn Round Time (TRT) of freight trains at Ports"**

The IMC met on 4 occasions in past one month; visited individually and/or severally 14 of the 23 Ports studied and interacted with the Port and concerned Divisional/Zonal officers; conducted a meeting inviting all Traffic Managers of Ports and CTPMs of concerned Zonal Railways and deliberated comprehensively on all infrastructural and process related issues having a bearing on operations of freight trains and thereby on the overall TRT. Three broad activity centres along geographic basis were identified for such infrastructure and process analysis in this context as – (1) Intra-Port Activity, (2) Interface between Port and Railways and (3) Hinterland Connectivity (including Main lines)

The recommendations of the Committee are in 3 categories :-

1. Pan-Port Recommendations
2. Port-Wise : Prioritisation of ongoing initiatives and
3. Port-Wise : Additional Initiatives mandated by the IMC

1. Pan-Port Recommendations :

A. Re-organization of Patterns of Train Examinations across Ports

- Variations in patterns of freight examination across Ports for identical streams of traffic shall be done away with.
- Joint Train Examination shall be done away with immediately in the few Ports where it still exists – viz VPT, Chennai, BPT.
- Examination of Freight Trains shall be done only for "Invalid Rakes"
- The "Haldia Model" of posting 1 or 2 Railway Coupling Porters in "Tippling Areas" is recommended.
- Ports to strictly comply with standards of High-Rise Handling Equipment for loading/unloading wagons.
- Rules for Damage and Deficiency checks shall be standardised across all Ports – recommended a weekly check once in a year.

B. Weighment

- Weightometers authorized and validated by "Weights and Measures Departments" be recognized for purpose of loading.
- Weighment be exempted for light-weight bulk commodities viz. Pet Coke, Met Coke, etc.

C. Electrification – EOL Policy and Through Siding Declarations

- Taking cognizance that Ports are Multi-Siding entities and that individual cargos have differentiated requirements of OHE – i.e Fully Wired or Top-Wired, Zonal Railways shall not deny "Through Siding Facility" to a Siding, if it

is Top-Wired due to the nature of cargo being handled on that line – viz. POL, Steel, Ores loaded through Rapid Loading Systems like "Silos".

D. Rationalize Operationally Administrative Units to improve Mobility

- Indian Railways needs to look for a scientific basis for deciding on interchange points and Divisional Boundaries. The Committee strongly recommends that the OD stream of traffic should be the basis for inclusion of a station in that respective jurisdiction. Also major junction points, with heavy density freight converging from all directions, should be discouraged from being an Interchange Point, which have proven to be traditional bottlenecks.

- In this context, JSG(Junction) and Dhamra(OD dependency on SERly) be considered objectively for re-allocation.

E. Agreements between Ports and Railways

- The Committee strongly recognizes the Agreements between Ports and Railways to be the cornerstones for the operational and commercial relationship between the entities. It is observed that so far there is no Major Port, with a current valid Agreement with the Railways. All of them have been outdated and need to be updated and signed.
- All Major Ports and the Respective Railways shall ensure that the Agreements are updated and signed before March 31st 2018.

2. Port-wise prioritization of On-going Initiatives

1. MUNDRA

Hinterland

PNU-RE Doubling to be expedited; DFC connectivity to Palanpur be ensured in a seamless manner

2. KANDLA

Hinterland

Tuna-Tekra NGR to be 100% operated by M/s DPT

Intra-Port

Berth Connectivity Works for Berths No. 13,14,15,16 be expedited; Comments on DPR to be furnished by the Port

Fertiliser Handling - Cut Placements to be avoided. Work on Line No. 13,14,15,16 to be expedited

3. PIPAVAV

Hinterland

Electrification initiatives between Port. SPV of M/s PRCL and Western Railway for VM-Surendranagar be expedited to match DFC targets

4. NAVLAKHI

Intra-Port

Land Exchange between GMB and Railways be facilitated by MoS

7. MUMBAI

Hinterland

Wadala - Kurla Line to be expedited

8. JNPT

Intra-Port

Urgent Need to sort out the "Common Operator System" - Pending for over three years.

9. MORMUGAO

Hinterland

CRS sanctions for easing restrictions on Castle-Rock - Kuelem be followed up vigorously

10. NMPT

Hinterland

Doubling between MAJN and Jokkatte is a critical bottleneck - be expedited

12. V.O.CHIDAMBARANAR

Hinterland

MVN to Melmaradur new line for two block sections be taken up on priority along with vigorous follow up of siding proposals of M/s Coastal Energy and M/s Hind Bharat

Intra-Port

Hare Island Connectivity - ESP Approved in Aug 2017 - DPR yet to be submitted

13. KARAIKKAL

Intra-Port

Engine Escape be provided at Karaikkal end for direct placement

The defunct mechanised handling system be completed expeditiously

14. CHENNAI

Intra-Port

Electrification to CONCOR Yard be taken

18. GANGAVARAM

Hinterland

Expedite RV line doubling

19. VISAKHAPATNAM

Interface

RRI works in R&D yard and OEC be completed timely

Western Sector - OEC Bypass be commissioned at earliest

20. PARADEEP

Hinterland

Expedite Doubling and Electrification works of JSG-CPH; ANGUL-SBP; Haridaspur - Paradeep lines

Intra-Port

Enforce Compliance of High-Rise Mobile Handling Equipment for Bulk Cargo Handling in Wagons

21. DHAMRA

Interface

Doubling and Additional Loop works be expedited

22. HALDIA

Interface

Durgachak to Haldia - 7 kms - doubling be completed within next 6 months

(3) Port-wise Additional Initiatives mandated by the IMC :

1. MUNDRA

Hinterland

Kutch Rail Corporation to commence the work of Doubling and Electrification on the super-critical Samikhyali-Palanpur section

2. KANDLA

Hinterland

Kutch Rail Corporation to commence the work of Doubling and Electrification on the super-critical Samikhyali-Palanpur section

Interface

Phenomenon of "Waiting for Indent" - detaining rakes : Coordination Mechanisms to be strengthened to ensure no time is lost

Primary reason for outward rake detentions is availability of matching locomotive; Crew Management in the area needs to be strengthened

Intra-Port

Avoid Nested Handling

Segregate Coal Handling from Fertiliser Handling clearly;

Fertiliser Handling - Switch 100% to Line Nos. 13,14,15,16

Plan O&M Agreement on Lines 13,14,15,16 for simultaneous loading of fertiliser Rakes - Plan for peak decongestion

3. PIPAVAV

Hinterland

Synchronization of electrification initiatives between Port ; SPV of M/s PRCL and Western Railway for VM-Surendranagar

5. ROSI-BEDI

Hinterland

Long-Term : 2020 - Rajkot - Kanaulus section be planned for doubling

6. DAHEJ

Hinterland

SPVs wary of Capex Investments other than original scope of project, amongst other issues; - A comprehensive redressal of the issues concerned be made

7. MUMBAI

Intra-Port

Migrate from Exchange Yard Model to Pure Siding Model (Land; Fixed Infrastructure; O&M issues be viewed comprehensively).

Simplification of Yard Layouts and Customise to Cargo Requirements - Auto handling; Project Cargo.

8. JNPT

Intra-Port

Current Electrification Plans beyond Jasai Yard towards JNPT Handling Yards to be de-linked from the "Yard Modification works" and continue upto the Holding Yard.

Yard Modification - Current Stalemate to be resolved expeditiously, while IPRCL continues to work in un-obtrusive areas

9. MORMUGAO

Interface

Majorda to Madgaon be considered for Automatic Signalling.

Work of By-Pass between Konkan Railway and Majorda be initiated.

10. NMPT

Hinterland

Doubling between Padubidri and PNMB be initiated immediately.

11. COCHIN

Intra-Port

Through Siding be considered for Vallarapadam - Clarification through check list be issued on treating top-wired sidings.

12. V.O. CHIDAMBARANAR

Interface

Doubling with Electrification be taken up from Milavittan to TNHP forthright.

14. CHENNAI

Interface

Exchange Yard Concept to Migrate to "Through Siding" Concept.

15. ENNORE

Hinterland

Long-Term : AIP- Puttur New Line be considered – 2020.

17. KAKINADA

Hinterland

3rd Line work between Vijayawada and Rajamundry be taken up on priority.

18. GANGAVARAM

Hinterland

Electrification of RV Line on immediate basis pending doubling.

Route Rationalization on RV Line be lifted for "Container Traffic".

Interface

Bypass Line between Gangavaram and M/s RINL be taken up immediately by M/s GPL.

19. VISAKHAPATNAM

Hinterland

Electrification of RV Line on immediate basis pending doubling.

Route Rationalization on RV Line be lifted for "Container Traffic".

Interface

Joint Examination to be eliminated forthright

Intra-Port

Electrification of Western Sector be taken up on priority to improve mobility.

Enforce Compliance of High-Rise Mobile Handling Equipment for Bulk Cargo. Handling in Wagons.

Intra-Port movement of Container traffic be experimented with.

Twin-Exchange Yard : Be experimented with.

Zero Base review of the 27 Level Crossings.

20. PARADEEP

Hinterland

Electrification of Single line between Angul-Sambalpur be taken up pending the doubling work.

Intra-Port

Manual Handling(Semi-Mechanical) to be eliminated.

21. DHAMRA

Interface

"Operational Command" of Bhadrak-Dhamra section being transferred to South Eastern Railway be considered.

22. HALDIA

Intra-Port

Full length placements to be ensured loading.

Reliability of Coal Tippler be improved.

Upgradation of the Mechanised Coal Loading Infrastructure is recommended.

23.KOLKATTA

Interface

Develop a full length cargo-handling line within the R&D Yard - Feasibility exists on extreme line of R&D Yard.

KoPT to install one cross-over to provide additional flexibility in R&D Yard.

Provide for a Bypass line from EJC to Majeharhat to avoid detention at KoPT.

Back ground

Vide O.O.No. ERB-1/2017/23/88 dated 22nd December 2017, Ministry of Railways in consultation with Ministry of Shipping have formed an Intra Ministerial Committee (IMC) to improve the "Turn Round Times" (TRT) of freight trains across Ports.

The Committee comprised of the following:

(i) Shri. G.V.L.Satya Kumar, ED/Strategic Planning, Railways Board
(ii) Shri. Anoop Kumar Agarwal, Managing Director, IPRCL
(iii) Shri. M.T. Krishna Babu, Chairman, Visakhapatanam Port Trust
(iv) Shri. P. Raveendran Chairman, Chennai Port Trust
(v) Shri. Rinkesh Roy, Chairman, Paradeep Port Trust
(vi) Shri. T.Sivakumar, CCM(FM), Southern Railway.
(vii) Dr.Monica Agnihotri, ED/Freight Marketing, Railway Board.
(viii) Shri.Prem Sagar Gupta, ED/CE(G), Railway Board.

Terms of Reference (TOR) and Tenure

The Terms of Reference (TOR) of the Committee was to recommend

"Steps to be taken to reduce turn round time of freight trains at Ports".

The committee was to submit its report by 20th January 2018

Methodology adopted

The Committee constituted a virtual multimedia group on 26th December 2018 and requisitioned information and data from Chairman / CEOs of various ports and DRM's of respective Divisions/Railways.

The details sought from Chairman/CEOs of Ports were as under :

S.No	Details
1	Internal Rail layouts
2	Handling Mechanisms
3	Rake wise detention
4	Note on current Railway Operations
5	Locomotives
6	
7	Intra Port Railway operations and monitoring mechanism
8	Co-ordination mechanism with Railways
9	Manning level of each Locomotive
10	Railway staff & Officers
11	Crew change and fuel pattern
12	Exchange details
13	Ports stacking areas and their capacity
14	Metrics of Rail performance
15	History of rail Operations of Ports
16	Current ship position & waiting times

17	Status of Agreements with Railways
18	BOT Operations
19	History of Ports
20	Future Developments
21	Miscellaneous

The details sought from DRMs / GMs were as under :

S.No	Details
1	Status of Agreements with Ports
2	Freight Train detention due to congestion to/from Ports
3	Rail infrastructure and constraints of mobility to/from Ports (Doubling/Bypasses/ etc.)
4	Steps taken in recent past to enhance mobility to /from Ports
5	Internal Rail Layout
6	Process of exchange of train to/ from ports-loco change, crew change; etc.
7	Main line constraints
8	Line capacity, Operational constraints – loco availability, traction availability & mismatch, crew availability, & traction issues
9	Status of WIP-Civil, Electrical, S&T to develop

The detailed formats of information sought from Ports and Railways are placed in Annexure 1 and Annexure 2 respectively.

The Committee physically met on 4 occasions:

- Jan 6th, 2018 at Visakhapatanam
- Jan 17th, 2018 at New Delhi
- Jan 20th,2018 at Chennai
- Jan 21st, 2018 at New Delhi

In the first sitting the detailed framework to be followed in the exercise was formulated.

The 3 components having a bearing on the TRT of freight train at Ports viz.

- Intra (port rail systems)
- Interface rail system between Ports and Railways
- and Main line rail connectivity systems.

were sought to be studied thoroughly from the **infrastructure** and **processes** perspective and deliberated thereon to home in on the bottlenecks and solution thereof. Also as the **volumes** of specific stream of traffic have a direct bearing on the capacity of the handling mechanisms to turn round the freight trains optimally from/to the port, the above 3 components needed to be evaluated vis-a-vis the volume handled of each stream of traffic at the ports.

Metrics of TRT at Terminals

The Turn Round – Time of freight trains at freight terminals is an additive measure of the 3 subcomponents of time differences between :

- (Arrl-Pl) : Arrival time of the train to the Placement time inside the terminal for loading/unloading.

- (Pl-Rel) : Placement time to the release time at terminal for loading/unloading.
- (Rel.Dep) : Release time to Departure time from terminal.

However, the overall TRT at terminals is also affected by detentions in various legs of activities.

Detention on either side of the arrival activity and departure Pre-Arrival Detentions (PADS)

- Origin in hinterland to mainline arrival detention i.e. feeder route detention.
- Main line detention
- Main line to Port terminal arrivals.

Additional Post-Departure Detention: (PDDs)

- Departure from Port Terminals to Main lines Arrival detention.
- Main line congestion.
- Main line to Destination Arrivals i.e. Feeder route detention

The committee deliberated on the factors affecting each of these activities and categorised three main subgroups of detention that need to be addressed to improve the TRT as under:

The following tables, which are self explanatory details the above categorisation.

Pre-Arrival Detentions		**TRT Category**
1	Origin in hinterland to main line (Feeder route detentions)	Hinterland Activity
2	Main line detentions	
3	Main line to Port Terminal Arrivals	Interface Activity
Terminal Detentions		
4	Arrival to Placement (arrl-Pl)	
5	Placement to Release (Pl-Rel)	Intra-Port Activity
5a	Single Operation	
5b	Double Operation	
6	Release to departure (Rel-dep)	Interface Activity
Post Departure Detentions		
7	Departure from Port terminals to Main line Arrival	
8	Main Line Detentions	Hinterland Activity
9	Main Line to destination arrivals (Feeder route detentions)	

Items (1,2) and (8,9) – may be categorised on Hinterland connectivity activities which are purely in the realm of Indian Railways.

Similarly (3,4) and (6,7) can be categorised on Terminal interface.

Item (5) is purely an "Intra Port" activity, thus the committee broadly categorised the TRT activities as:

1) Intra Port Activities
2) Interface Activities
3) Hinterland Activity

A) Factors affecting Intra-Port Activities (Placement to Release) Item (5) of table.

- Mechanisation – (level of Mechanisation of handling for each stream of traffic)
- Reliability and availability of handling system.
- Engine escape lines
- Shunting facilities
- Full rake handling facility
- Electrification
- Signalling infrastructure
- Track condition
- Alternate paths within Ports.
- Through running – EOL
- Speed Restriction
- Alternate handling systems
- Weighment mechanism
- Handling mechanism for over loading

B) Factors affecting Interface Activities (Item (3,4) and (6,7) of table X.

- Exchange yard /Holding yard/Direct placement
- Loco/Crew change to and from port
- Examination pattern (Universal CC, Damage and Deficiency, Sick line)
- R&D facilities – No. Of lines
- R&D facilities – Electrification
- R&D facilities - Signalling
- R&D facilities – Universal flexibility
- Loco/Crew availability
- Traction mismatch
- Crew – Road learning mismatch
- Crew- Traction mismatch
- Route restriction & rationalisation
- Speed restriction

C) Factors affecting Hinterland activities (item (1,2) and (8,9) i.e. Pre-Arrival and Post departure Activities (PAPD)

- Adequacy of line capacity
- Specific Mainline and Feeder route
- Entry mechanism from mainline into Port areas (Grade specification)
- Electrification
- Signalling infrastructure

The Port-Wise discussion and recommendations of the Committee follow herein :

1. MUNDRA PORT

- The total traffic handled by **Mundra Port** 2016-17 : **104.5** Million Tons.
- The rail traffic handled during the period : **19.26** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound container of **12 rakes per day** at an average rake detention of 11.33 hrs.
  - Outbound fertilizer of **3 rakes per day** at an average rake detention of 16.10 hrs.
  - Outbound Coal loading of **1 rake per day** at an average of 11.03 hrs.
  - (In FY 2017-18, upto December, an average outbound coal of 3 rakes per day are handled at an average rake detention of 8.52 hrs.)
  - Inbound container loading of **14 rakes per day** at an average rake detention of 11.33 hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (hrs)	Placement to Release (hrs)	Release to Departure (hrs)	Total (hrs.)
Outbound	Container	12	0.27	5.04	6.02	11.33
Outbound	Fertiliser	3	6.17	7.12	2.40	16.10
Outbound	Coal	1	5.33	2.13	3.17	11.03
Inbound	Container	14	6.32	4.31	0.48	11.51

Intraport Systems

- No Constraints.
- Infrastructure development ahead of time.

Interface system

- Twin exchange yard mechanism.
- For west Port coal loading – exchange only for "creep" loco interchange.

Hinterland connectivity

- Adipur - Mundra is already a double line. Electrification work on Adipur – Mundra is being undertaken by the NGR Company .
- To enable DFC complaint infrastructure, the electrification and doubling of Samaikyali - Palanpur lines needs to be expedited.
- With DFC section from Palanpur to Rewari being targeted for completion by 2019, both the Western Railway electrification project between Samaikyali - Gandhidham Mundra Port and the electrification of the Samaikyali line of Kutch Railway need to be expedited.
- CORE has indicated original target date of March 2020 for this project of high-rise OHE of 63 RKM (76 TKM) at Rs.275.59 Crores. The detailed estimates are under preparation by CORE.
- The critical bottle neck currently is Palanpur interchange point and the capacity constraint on Samaikyali – Gandhidham section. Kutch Railway Corporation Ltd., need to execute the doubling on top priority.

2. Deen Dayal Port (erstwhile KANDLA PORT) :

- The total traffic handled by **Kandla Port** during 2016-17 : **105.4** Million Tons
- The Rail traffic handled during the period : **8.65** Million Tons.
- The main commodities handled by rail during the period are:

  - Outbound fertiliser of **3 rakes per day** at an average rake detention of 20.50Hrs.
  - Outbound Coal of **2 rakes per day** at an average detention of 14.20Hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Fertiliser	3	4.32	11.41	4.37	20.50
Outbound	Coal	2	8.54	5.52	7.42	22.33

- The main issues having a bearing on the Rake Turn round time of Kandla Port are discussed herein:

Intraport system

- The Port is notified on through distance basis on 24th March 2017.

FERTILISER :

- Handling of Fertiliser at Tuna-Tekra is satisfactory.
- The Fertiliser handling lines at the main port, though adequate in number and length, have two major constraints in handling:

  i) Inadequate number of packers.
  ii) Rake being split at multiple road crossings in placement line.

- To overcome this constraint, the works of full length lines on line No. 13,14,15,16 need to be expedited. The TDC for two lines is January 2018.
- With O & M Agreement for Fertiliser handling in the two lines mandating 6 Hrs, it is expected that the turn round of Fertiliser rakes reduces by over 25%.

COAL:

- The Coal loading lines are nested inside the Fertiliser grid, leading to train waiting for placement.
- In this context, there is a need to shift to the new Fertiliser handling lines (Line Nos. 13,14,15, and 16) at the earliest and this work needs to be expedited.

Coordination Mechanisms

- Being 'direct placement' mechanism, the high detention on account of arrival to placement is primarily on account of late placement of indents. The co-ordination of Port with the Railway, needs to be strengthened. It is suggested that Deputy Traffic Manager (Railways) co-ordinate at least twice a day with Area Manager/Gandhidham/Western Railway.

Interface system

- No constraints - as no exchange yard exists.
- Considerable outward detention is mostly on account of inadequate availability of diesel locomotive. Progressive electrification would resolve this issue considerably.
- Berth Connectivity to Berths No.13,14,15 and 16 need to be expedited. Status of DPR : RVNL yet to respond to Zonal Railways Comments
- Rail Connectivity between Gandhidham and Tuna-Tekra Port of M/s DPT was commissioned under the NGR Model of PPP Policies of Railways in 2015, but operations of the line needs to be made full-fledged and M/s DPT should depute their own staff for its operations.

Hinterland connectivity

- To enable DFC complaint infrastructure, the electrification and doubling of Samaikyali - Palanpur lines needs to be expedited.
- With DFC section from Palanpur to Rewari being targeted for completion by 2019, both the Western Railway electrification project between Samaikyali - Gandhidham Mundra Port and the electrification of the Samaikyali line of Kutch Railway need to be expedited.
- CORE has indicated original target date of March 2020 for this project of high-rise OHE of 63 RKM (76 TKM) at Rs.275.59 Crores. The detailed estimates are under preparation by CORE.
- The critical bottle neck currently is Palanpur interchange point and the capacity constraint on Samaikyali – Gandhidham section. Kutch Railway Corporation Ltd., need to execute the doubling on top priority.

3. PIPAVAV PORT

- Total traffic handled by **Pipavav Port** during 2016-17 : **8.46** Million Tons.
- The rail traffic handled during the period : **6.79** Million Tons.
- The main commodities handled by rail during the period are:
  - Outbound containers of **7 rakes per day** at an average turn round time of 4.25 Hrs.
  - Outbound fertilizer of **1 rake per day** at an average turn round time of 9.28 Hrs.
  - Inbound container train of **5 rakes per day** at an average turn round of 6.39 Hrs.

- The main components of terminal detention are under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Container	7	0.22	2.47	1.1	4.25
Outbound	Fertiliser	1	0.20	7.35	1.34	9.28
Inbound	Container	5	0.04	6.32	0.02	6.39

Intraport System

- Electrification for high rise OHE to be synchronized with commissioning of WDFC between Pakapur to Rewari –M/s PRCL to plan accordingly.

Interface System

- No constraint as direct placement inside port.

Hinterland connectivity

- Electrification of the SPV line of M/s PRCL is to be expedited.
- M/s PRCL has given consent for executing the 293 RKM work of electrification at high-rise as a deposit work.
- Detailed estimate is under process.

4. NAVLAKHI PORT

- The total traffic handled by **Navlakhi Port** during 2016-17: **7.25** Million Tons
- The Rail traffic handled during the period : **0.99** Million Tons.
- The main commodities handled by rail is at a Railway Good shed – Navlakhi - during the period are:
  - Outbound Coal of **1 rake per day** at an average rake detention of 9.29Hrs.
- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Coal	1	0.28	8.16	0.45	9.29

Intraport System

- Not Applicable – as only Public Good Shed is utilised for handling port traffic.

Interface System

- No exchange yard.
- Additional Goods loading platform along with in-motion weighbridge at line No. 4 is required. Additional 100 metres is required towards the end.
- Sanction of Government of Gujarat is awaited for land exchange between Railway and Gujarat Maritime Board at Navlakhi station. 10717 sq.mtrs of GMB land to be exchanged with 3641 sq.mtrs of land.

Hinterland connectivity

- No constraints.

5. ROZI / BEDI PORT

- Total traffic handled by **Rozi/Bedi Port** in 2016-17 : **6.27** Million Tons.
- The rail traffic handled during the period : **0.4** Million Tons.
- The main commodity handled by rail is at a Railway Good Shed – WindMill- during the period are:
  - Outbound fertilizer of **0.4 rakes per day** at an average turn round time of 16.41 Hrs.
- The main components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (hrs)	Placement to Release (hrs)	Release to Departure (hrs)	Total (Hrs.)
Outbound	Fertilizer	0.4	0.25	14.19	1.57	16.41

Intraport System

- Not applicable – as only public good shed in utilized for handling port traffic

Interface System :

- No constraints.

Hinterland connectivity :

- Long term : Rajkot to Kanalaus section needs doubling.

6. DAHEJ PORT

- The total traffic handled by **Dahej port** during 2016-17: **26.56** Million Tons
- The Rail traffic handled during the period : **3.38** Million Tons.
- The main commodity handled by rail during the period was:
  - Outbound Coal of **3 rakes per day** at an average rake detention of 4.46hrs.

- The major components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Coal	3	0.18	2.27	2.01	4.46

Intraport System

- One of the best mechanised loading silo-based systems.

Interface System

- No constraints.

Hinterland connectivity

- Electrification at a later stage may be required for high-rise OHE standards to be DFC compliant on the SPV line of M/s BDRCL

7. MUMBAI PORT

- The total traffic handled by **Mumbai Port** during 2016-17 : **263.05** Million Tons
- The Rail traffic handled during the period : **0.92** Million Tons.
- The main commodity handled by rail during the period was:
  - Inbound Cement of **1 rake per day** at an average rake detention of 34.49 hrs.
  - Outbound loading of **0.1 rake per day** of steel coils in flats and 0.2 rake of peas and grams in covered flats.

- The major components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Inbound	Cement	1	4.54	10.13	13.28	28.35
Outbound	Steel coil	0.1	4.32	15.59	11.05	31.36
Outbound	Foodgrains	0.2	10.02	11.32	16.28	38.02

Intraport System

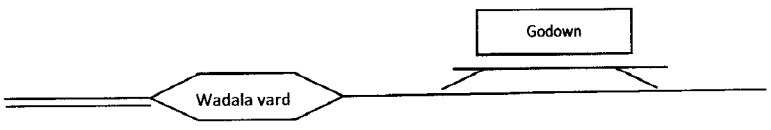
- The extreme network of Mumbai port along with rolling stock is infructuous considering the meagre level of rail traffic being handled.
- The rail lines should be redesigned along with the godown spaces to customise them, for handling bulk and break bulk consignments.

Interface System

- The exchange yard with 19 lines for the level of traffic handled is totally infructuous and a zero based review would reveal a 'neat' rail network with direct placement by Railway locomotives, after suitable electrification of its internal network.

Hinterland connectivity

- Given the suburban section and the 'windows' traffic available to Mumbai port rail network and exit out it makes it an unviable proposition, especially for high value cargos.
- The Wadala - Kurla line assumes importance in this context.
- Land acquisition, needs to be expedited to ensure delivery of the Wadala - Kurla freight line.
- The suggested layout for Mumbai Port Trust given its extensive go down availability and hinterland locational advantage could be:



8. JNPT PORT

- The total traffic handled by **JNPT Port** during 2016-17 : **62.15** Million Tons.
- Of this traffic, the container traffic handled : **54.53 Million Tons** equivalent to 4.5 Million TEUs
- The primary Commodity handled by rail from JNPT are Containers rakes
  - Outbound of **12 rakes per day** at an average TRT of 12.48hrs.
  - Inbound of **12 rakes per day** at an average TRT of 4.24hrs.
- The major components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Container	12	0.27	8.45	3.36	12.48
Inbound	Container	12	2.59	1.28	0.03	4.24

Issues

Steady decline in rail coefficient in both
The EXIM sectors

Year	Import (TEUs)	Rail Coefficient (%)		Exports (TEUs)	Rail Coefficient (%)
2012-13	2.17	22.4		2.18	18.9
2013-14	2.10	19.7		2.06	18.0
2014-15	2.27	19.5		2.16	18.1
2015-16	2.24	18.8		2.13	16.4
2016-17	2.26	15.9		2.22	13.5
April to December					
2016-17	1.69	16.5		1.57	16
2017-18	1.66	13.2		1.75	14.6

Overall handling performance

	Average Handling Time (Hrs)		
Year	Avg No. Of Rakes	Port	Railway
2012-13	15.5	6.22	2.10
2013-14	13.6	7.43	2.11
2014-15	14.3	7.54	2.08
2015-16	14.0	9.02	2.02
2016-17	12.1	10.05	1.48
2016-17	12.3	9.55	1.51
2017-18	12.8	9.05	2.20

Intra – Terminal performance

Port	JNPT			NSICT			GTI		
Year	No. Of Rakes	Handling Time		No. Of Rakes	Handling Time		No. Of Rakes	Handling Time	
		By Port	By Rly		By Port	By Rly		By Port	By Rly
2012-13	137	8:36	2:27	110	6:23	2:09	215	4:59	2:00
2013-14	124	9:52	2:32	90	8:22	2:12	194	6:03	1:58
2014-15	126	9:50	2:30	106	8:12	2:01	199	6:32	1:57

2015-16	133	11:00	2:14	108	8:50	1:51	177	7:45	2:00
2016-17	117	11:54	1:52	99	8:47	1:44	147	9:29	1:47
April to December									
2016-17	120	11:46	1:55	99	8:32	1:47	148	9:17	1:51
2017-18	119	10:35	2:20	104	8:35	2:04	163	8:18	2:13

Intraport System

- Of the 3 grids of JNPT – 4 lines, NSICT-2 lines and GTI – 3 lines handling lines is excessive at JNPT terminal of 10:45 while at others it is 8:48 Hrs/rake and 8:21 Hours/Rake.
- JNPT issued by a double line taking off from Panvel (24Kms) via Jasai Yard (8kms) up to holding yard. Holding yard onwards twin single lines of around 2kms connected to two container terminals viz. JNPT and BULK container terminals.
- Limitation of twin single line – 30 trains each way.
- Against Board's target of 4 Hrs, handling time at JNPT is 9-10 hrs /rake
- All yards are non-electrified.
- Mix traffic handling is a major issue.- **Common Operator System to be instituted immediately**

Interface system

- No exchange yard.
- Traction change at Jasai yard and BV reversal inside port is a main constraint.
- Electrification of Jasai-JNPT is a sanctioned work being held up for completion of modified holding yard. Electrification to be immediately taken up, not withstanding the commissioning of the DFC as this would enhance through running at the earliest.

Hinterland connectivity

- With DFC targeted for FY 2019-20, JNPT should gear up accordingly.
- The modified yard work for DFC compliance should be taken up forthright without delay

9. MURMAGAO PORT

- The total traffic handled by **Marmagao Port** during 2016-17 : **33.18** Million Tons.
- The rail traffic handled during the period : **15.7** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound coal of **8 rakes per day** at an average turn around time of 9.05hrs.
  - Outbound Limestone/Dolomite/Others of **1 rake per day** at an average turn round of 13.35hrs.
  - Inbound steel cargo of **1 rake per day** at an average turn round of 16.10 hrs.

- The major components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs)
Outbound	Coal	8	3.49	3.06	2.1	9.05
Outbound	Limestons/ Flux	1	3.26	4.34	1.53	9.53
Inbound	Steel	1	2.27	13.39	0.04	16.1

Intra port system

- Two mechanized coal loading facilities.
- The alternate facility at JSW terminal be modified for parallel loading of two rakes.

Interface System

- Exchange yard mechanism – above FOIS figures thus not reflective of actual detention.

Hinterland connectivity

- Limitations of Castle Rock – Kuelam section
- Konkan line crossing Majorda junction.
- TDC for doubling Hospet-Tinnaighat – March 2018.
- Goods train is not allowed to follow a Passenger train Down the Ghat.
- Passenger train is not allowed to follow a Goods train Up the ghat.
- Crossing can be arranged between a Passenger & Passenger train.
- Crossing can be arranged between Up the ghat Passenger train and down the ghat goods train provided.
- Descending goods train has arrived at the block station ahead and parked on down line with QLM end point set to sand hump and route set for receiving the ascending passenger trains at the station.
- Descending goods trains shall not start from that station unless ascending passenger train has arrived / run through not only at that station but also reached the next block station. During the intervening period, SM should keep the cross over points at CLR end in reverse position and set the slip siding at QLM end.
- An up goods train/Passenger train may start from QLM or run on the ghat section while any down passenger train is on run starting from CLT towards QLM.
- Only air brake stock is permitted.
- All down the ghat trains must have loco fitted with AEB in good working condition.
- All up the ghat trains are provided with banker locos. The banker locos shall have the AEB provision but AEB need not be set. The leading loco of up the ghat trains need not have AEB provision.
- Motor / push trolley / Lorry can work only under block protection.
- A separate passenger corridor, with server restriction is enforced before allowing Up/Dn passenger trains in the ghat section.

10. NMPT PORT

- The total traffic handled by **NMPT Port** during 2016-17 : **39.95** Million Tons.
- The rail traffic handled during the period : **5.16** Million Tons.
- The main commodities handled by rail during the period are :

  - Outbound coal of **3 rakes per day** at an average turn round time of 19.32 hrs.
  - Outbound fertiliser of **1 rake per day** at an average turn round time of 22.29hrs.
  - Outbound limestone/Gypsum of **1 rake per day** at an average turn round of 23hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs)
Outbound	Coal	3	5.2	4.46	9.25	19.32
Outbound	Fertiliser	1	2.54	7.47	11.48	22.29
Outbound	Limestone/ Gypsum	1	6.01	5.55	9.43	22

Intraport Systems

- Mechanised coal handling rapid loading system being augmented for catering to increased capacity of Udupi Power House for 1200MW to 2800MW

Interface system

- No constraints
- Siding agreement should be finalised and signed in the next two months between port and the Railways.

Hinterland connectivity

- With capacity augmentation of Udupi Power Corporation the line between PNMB to the serving station should be prioritised for completion.
- The doubling between MAJN to Jokkotte needs to expedited

11. COCHIN PORT

- The total traffic handled by **Cochin Port** during 2016-17 : **25.01** Million Tons.
- The rail traffic handled during the period : **0.094** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Coal of 0.09 rake per day at an average turn round of 26.57hrs

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Coal	0.09	10.2	10.19	6.18	26.57

Intraport Systems

- No constraints

Interface system

- No constraints

Hinterland connectivity

- Other issues: Pricing for Cochin to Coimbatore /Tiruppur area needs to be revisited for improved market share.
- Through Siding facility to be granted for Vallarapadam siding

12. V.O. Chidambaranar Port (erstwhile Tuticorin Port)

- The total traffic handled by **Tuticorin Port** during 2016-17 : **38.46** Million Tons.
- The rail traffic handled during the period : **0.641** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Fertiliser of **1 rake per day** at an average turn round of 14.53 hrs.
  - Outbound Coal of **0.05 rake per day** at an average turn round of 14.58 hrs.
  - Outbound Limestone of **0.06 rake per day** at an average turn round of 19.07 hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Fertiliser	1	3.42	6.29	4.42	14.53
Outbound	Coal	0.05	3.01	5.46	6.11	14.58
Outbound	Limestone	0.06	5.54	6.15	6.58	19.07

Intraport Systems

- Nearly 4000 MW of thermal power capacities are at different stages of being commissioned in Tuticorin area. The Port needs to install the Mechanised Coal handling system at the earliest.
- The rail connectivity to Hare Island needs to be expedited. ESP Approved by Zonal Railway in August 2017
- Doubling with electrification from Milavittan to Tuticorin Harbor Port Yard needs to be planned.

Interface system

- No constraints.
- The issue of In-Motion WeighBridge and the WeighBridge calibration needs to be sorted out, as it is likely to have an adverse impact on mobility in the region.

Hinterland connectivity

- Prioritise new line work of Milavattan to Melmarudur – 2 Block sections and siding proposals of Coastal Energy and HindBharat to be executed in a synchronized manner.

13. KARAIKKAL PORT

- The total traffic handled by **Karaikkal Port** during 2016-17 : **9.112** Million Tons.
- The rail traffic handled during the period :**5.4** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Coal of **3 rakes per day** at an average turn round of 6.49 hrs per rake.
  - Outbound Fertiliser of **0.5 rake per day** at an average turn round of 9.55 hrs per rake.
  - Outbound Limestone/Dolomite of **0.5 rake per day** at an average turn round of 5.42 hrs per rake.

- The components of terminal detention are as under:

Inbound/ Outbound	**Commodity**	**Average No. Of rakes per day**	**Arrival to Placement (hrs)**	**Placement to Release (hrs)**	**Release to Departure (hrs)**	**Total (Hrs.)**
Outbound	Coal	3	2.01	3.01	1.47	6.49
Outbound	Fertiliser	0.5	0.36	7.44	1.35	9.55
Outbound	Limestone/ Dolomite	0.5	1.12	3	1.31	5.42

Intraport Systems

- The coal loading systems needs to be mechanised
- The engine release facility needs to be provided at Karaikkal end of siding to facilitate direct reception on loading lines

Interface system

- No constraints

Hinterland connectivity

- No constraints

14. CHENNAI PORT

- The total traffic handled by **Chennai Port** during 2016-17 : **50.21** Million Tons.
- The rail traffic handled during the period : **5.441** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Containers of **2 rakes per day** at an average rake detention of 18.44hrs.
  - Outbound Limestone of **2 rakes per day** at an average rake detention of 21.38hrs.
  - Inbound container of **2 rakes per day** at an average rake detention of 9.01hrs.
  - Inbound Granite/steel of **1 rake per day** at an average rake detention of 18.59hrs.
  - Inbound Cement of **1 rake per day** at an average rake detention of 11.4hrs
- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (hrs)	Placement to Release (hrs)	Release to Departure (hrs)	Total (Hrs.)
Outbound	Container	2	4.36	4.01	10.07	18.44
Outbound	Limestone	2	4.21	8.28	8.48	21.38
Inbound	Container	2	3.16	4.00	1.45	9.01
Inbound	Cement	1	2.55	8.23	0.22	11.40

Intraport Systems

- Necessary Electrification of placement line to CONCOR yard should be taken up by the Port. Siding agreement should be finalised with consignee.

Interface system

- Exchange yard for the level of traffic is infructuous. The system needs to be done away with.
- Siding agreement should be finalised and signed in the next two months between port and the Railways.

Hinterland connectivity

- No Constraints by Rail

15. ENNORE PORT

- The total traffic handled by **Ennore Port** during 2016-17 : **30.02** Million Tons.
- The rail traffic handled during the period : **2.976** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Coal of **4 rakes per day** at an average rake detention of 3.10 hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Coal	4	4.26	3.44	5.00	13.10

Intraport Systems

- Adequate infrastructure for next 10 years to be planned.

Interface system

- Exchange yard mechanism to be reviewed.
- Doubling between holding yard and Ennore Port to be completed.

Hinterland connectivity

- Long term : Attipattu – Puttur line.
- MOU to be expedited by Port for maintenance of Signalling Equipment/RRI Cabin which is provided at Port Holding Yard

16. KRISHNAPATNAM PORT

- The total traffic handled by **Krishnapatnam Port** during 2016-17 : **36.1** Million Tons.
- The rail traffic handled during the period : **9.47** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Coal of **5 rakes per day** at an average rake detention of 10.06 hrs.
  - Outbound Other ores of **1 rake per day** at an average rake detention of 8.53 hrs.
  - Outbound Fertiliser of **1 rake per day** at an average rake detention of 10.56 hrs.
  - Outbound Container of **0.24 rake per day** at an average rake detention of 16.19 hrs.
  - Inbound Cement of **0.6 rake per day** at an average rake detention of 9.06 hrs.
- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Coal	5	1.31	3.37	4.58	10.06
Outbound	Other Ores	1	1.24	4.00	3.29	8.53
Outbound	Fertiliser	0.83	1.31	4.60	4.26	10.56
Outbound	Container	0.24	8.47	2.25	5.07	16.19
Inbound	Cement	0.57	0.38	4.56	3.32	9.06
Inbound	Coal	0.85	0.27	4.41	3.29	8.37
Inbound	Container	0.40	0.36	2.40	4.32	7.48

Intraport Systems

- Highly mechanised

Interface system

- Exchange yard mechanism

Hinterland connectivity

- No constraints

17. KAKINADA PORT

- The total traffic handled by **Kakinada Port** during 2016-17 : **12.7** Million Tons.
- The rail traffic handled during the period :**2.16** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Fertiliser of **3 rakes per day** at an average rake detention of 14.36hrs.
  - Outbound Coal of **1.5 rake per day** at an average rake detention of 10.36hrs.
  - Inbound Foodgriain of **0.64 rake per day** at an average rake detention of 18.50hrs.
  - Inbound Cement of **0.25 rake per day** at an average rake detention of 12.47hrs.
- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Fertiliser	3	3.01	8.00	3.35	14.36
Outbound	Coal	1.5	2.59	2.48	4.50	10.36
Inbound	Foodgrains	0.64	1.21	12.59	4.24	18.45
Inbound	Cement	0.25	0.56	9.22	2.29	12.47

Intraport Systems

- Mechanised handling systems
- Non interlocked points – major constraints

Interface system

- No exchange mechanism
- Single line between port station to O' point. The work need to be taken up

Hinterland connectivity

Given the constraint between Rajamundry to Korvur, the 3rd line work between VSKP-BZA be taken up on priority

RJY——————————————————— KOV

Godavari

18. GANGAVARAM PORT

- The total traffic handled by **Gangavaram Port** during 2016-17 : **18.04** Million Tons.
- The rail traffic handled during the period :**13.17** Million Tons.
- The main commodities handled by rail during the period are :

  - Outbound Coal of 6.2 **rakes per day** at an average rake detention of 17.20 hrs.
  - Outbound Limestone of **0.54 rake per day** at an average rake detention of 16.36 hrs.
  - Outbound Fertiliser of **0.60 rake per day** at an average rake detention of 23.41 hrs.
  - Inbound Ores of **0.58 rake per day** at an average rake detention of 7.07 hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (hrs)	Placement to Release (hrs)	Release to Departure (hrs)	Total (Hrs.)
Outbound	Coal	6.2	5.00	3.47	8.32	17.19
Outbound	Limestone	0.54	8.07	3.37	4.53	16.36
Outbound	Fertiliser	0.6	4.38	5.04	13.58	23.41
Inbound	Other Ores	0.58	0.24	5.26	1.17	7.07

Intraport Systems

- Mechanised Iron ore and Coal handling system

Interface system

- Exchange yard mechanism
- Advantage: No TXR examination at GPL
- To avoid engine reversal at Jaggayyapalem, a bypass from M/s RINL to Gangavaram Port needs to be constructed.

Hinterland connectivity

19. VISAKHAPATANAM PORT

- The total traffic handled by **Visakhapatanam Port** during 2016-17 : **16.02** Million Tons.
- The rail traffic handled during the period :**28.27** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Coal of **7.05 rakes per day** at an average TRT of 10.14 hrs.
  - Outbound Fertiliser of **2.14 rakes per day** at an average TRT of 17.41hrs.
  - Inbound Iron ore of **3.2 rakes per day** at an average TRT of 11.31 hrs.
  - Outbound Container of **0.62 rake per day** at an average TRT of 18.39hrs.
  - Outbound POL of 0.3 rakes per day at an average TRT of 6.41hrs.
  - Inbound coal of 2.37 rakes per day at an average TRT of 15.5hrs.
  - Inbound container of 0.7 rakes per day at an average TRT of 22hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (hrs)	Placement to Release (hrs)	Release to Departure (hrs)	Total (Hrs.)
Outbound	Coal	7.05	1.45	4.41	3.48	10.14
Outbound	Fertiliser	2.14	2.13	8.48	6.4	17.41
Inbound	Iron Ore	3.2	0.15	9.23	1.52	11.31
Outbound	Container	0.62	2.36	10.07	5.55	18.39
Outbound	POL	0.3	2.25	3.5	6.41	12.56
Inbound	Coal	2.37	3.14	10.08	2.28	15.5
Inbound	Container	0.7	1.38	13.29	6.54	22.01

Intraport Systems

- OEC to western sector bypass work be expedited.
- Inward Coal Handling be mechanised. May consider utilising the OEC tipplers for the same
- Manual handling of Coal using payloaders be eliminated/Ensure compliance of standards of handling equipment with High Reach
- Port to consider intra-rail movement of containers from M/s VCTPL to sidings in Western sector – JPL1, JPL2 and JPL3 – to ease the movement of containers by road through the city and feed the CFSs in the city.
- Electrification of Western Sector be taken up, to ensure seamless movement into the fertilizer sidings.
- Port to make a zero-base review of the 18 level crossings in its jurisdiction and minimize them by closing the poor TVU ones and diverting to other LCs. A survey for a week be undertaken in this context.

Interface system

- Electrification work within port be expedited
- Twin Yard concept of –DYD as a departure yard and R&D Yard as reception yard can be experimented for its utility in reducing loaded stock detention at R&D Yard of Port.

Hinterland connectivity

- Raipur – Viziangaram Line is the lifeline for both the Ports of Visakhapatnam and Gangavaram. This line needs to be electrified on priority as an interim measure pending completion of doubling work, as the major contribution to the detention of outward stock towards R-V direction is due to traction mismatch of locomotives.

- With some patches of R-V line having already been doubled, Route rationalization restriction for container traffic is recommended to be lifted partially, atleast for the stream of traffic of containers from/to VPT area.

20. PARADEEP PORT

- The total traffic handled by **Paradeep Port** during 2016-17 : **88.96** Million Tons.
- The rail traffic handled during the period :**45.93** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Coal of **12.16 rakes per day** at an average rake detention of 9.18hrs.
  - Inbound Coal of **14.85 rakes per day** at an average rake detention of 14.62hrs.
  - Outbound Limestone of **2.58 rakes per day** at an average rake detention of 7.03hrs.
  - Inbound Cement of **0.25 rake per day** at an average rake detention of 12.47hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Coal	12.16	2.18	3.10	3.50	9.18
Inbound	Coal	14.85	3.36	4.45	1.19	9.40
Outbound	Limestone	2.58	2.56	2.56	1.11	7.03

Intraport Systems

- Manual handling of coal to be eliminated
- The mechanisation projects be expedited
- The signalling works within the port be expedited by Railways

Interface system

Hinterland connectivity

- Haridaspur – Paradeep SPV work to be expedited
- Angul-Sambalpur line be electrified interim while doubling work is in progress.
- The surface crossing from Paradeep to Cuttack be eliminated and grade separator work to be taken up

21. DHAMRA PORT

- The total traffic handled by **Dhamra Port** during 2016-17 : **21.41** Million Tons.
- The rail traffic handled during the period :**21.91** Million Tons.
- The main commodities handled by rail during the period are :
  - Outbound Coal of **9.42 rakes per day** at an average rake detention of 6.51hrs.
  - Outbound Limestone of **0.74 rakes per day** at an average rake detention of 6.21hrs.
  - Inbound Iron ore of **4.5 rakes per day** at an average rake detention of 6.19hrs.
  - Inbound Coal of **0.5 rake per day** at an average rake detention of 8.07hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Coal	9.42	2.28	2.18	2.05	6.51
Outbound	Lime stone	0.74	2.26	1.54	1.60	6.21
Inbound	Iron Ore	4.5	1.10	5.09		6.19
Inbound	Coal	0.5	0.33	7.34		8.07

Intraport Systems

- Good example for other ports to follow- additional silo with 4000T capacity being installed to improve not only volume but also to minimize the detentions on account of "waiting time for silo feed"

Interface system

- Doubling work from Cuttack to Dhamra is to be expedited

Hinterland connectivity

- Supply of empties from SER – corridor merging Dhamra

22. HALDIA PORT

- The total traffic handled by **Haldia Port** during 2016-17 : **34.14** Million Tons.
- The rail traffic handled during the period :**12.64** Million Tons.
- The main commodities handled by rail during the period are :

  - Outbound Coal of **7.42 rakes per day** at an average TRT of 20.56hrs..
  - Outbound Limestone/Flux of **2.80 rakes per day** at an average TRT of 120.50hrs.
  - Outbound POL of **0.7 rakes per day** at an average TRT of 22.32hrs.
  - Inbound Coal of **2.5 rakes per day** at an average TRT of 10.56hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs)
Outbound	Coal	7.2	6.24	5.2	9.05	20.5
Outbound	Limestone/Flux	3.8	7.3	6.5	8.8	20.5
Outbound	POL	0.7	10.22	5.12	6.59	22.32
Inbound	Coal	2.5	3.15	6.37	1.05	10.56

Intraport Systems

- Electrification of line between Bulk yard and General yard is being undertaken in an incremental manner. The Committee suggests that Line 5 and Line 7 of Bulk Handling Yard too be taken up for electrification.
- Reliability of Coal tippler needs to be improved, as there are frequent breakdowns on this count, thus affecting turnround times.
- Despite having full length sidings, placements are being done in two short length spurs, as portions of full length lines are buried under the coal.
- The hauling capacity of locomotives is limited

Interface system

- Durgachak to Haldia : 7 Km doubling to be completed on priority. RVNL is the executing agency and the TDC is March 2019. This work needs to expedited.
- The "Haldia Model" of posting some Zonal Railway Coupling Porters Rationalise examination mechanism

Hinterland connectivity

- No constraint.

23. KOLKATA PORT

- The total traffic handled by **Kolkata Port** during 2016-17 : **16.81** Million Tons.
- The rail traffic handled during the period :**1.24** Million Tons.
- The main commodities handled by rail during the period are :

  - Outbound Container of **2.45 rakes per day** at an average TRT of 17.13hrs..
  - Inbound Container of **2.45 rakes per day** at an average TRT of 17.37hrs.
  - Inbound Foodgrains of **0.18 rake per day** at an average TRT of 23.22hrs.

- The components of terminal detention are as under:

Inbound/ Outbound	Commodity	Average No. Of rakes per day	Arrival to Placement (Hrs)	Placement to Release (Hrs)	Release to Departure (Hrs)	Total (Hrs.)
Outbound	Container	2.45	4.56	2.01	10.22	17.13
Inbound	Container	2.45	6.33	1.31	6.23	14.27
Inbound	Foodgrains	0.18	5.58	7.10	10.14	23.22

Intraport Systems

- Not having full length lines is a major constraint of KOPT. The farthest Line in the R&D should be converted for handling bagged commodities.
- The common entry point into CESC Lines is to be separated from the siding activities at the farthest point away from Exchange Yard.

Interface system

- KoPT to install one cross-over to provide additional flexibility in R&D yard to/from the Port Handling areas. This would facilitate better utilisation of R & D.
- M/s KoPT has to construct the bypass line of 400 m from East Junction Cabin Yard to Majeharhat to enable holding full length trains, while yard operations are being carried out.
- Agreement between Railways and Ports should be entered into by 31st March 2018

Hinterland connectivity