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Shift 2 Rail
Prospects from gains during Covid-19 pandemic

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Ray of hope amidst pervasive gloom
Covid-19: freight business on IR

- As world over, Covid-19 pandemic jolted Indian Railways with an impact, unusual and unprecedented.
- It had to halt most of its normal operations, cancelling all of around 13,500 passenger trains it operates every day, ferrying 23 million travellers across the country.
- IRmen won nation’s trust as they are known to do, especially in emergencies and difficult times.
  - With roads closed, truckers in disarray, drivers having had to hide owing to lockdowns, IR allowed no shortage of daily staples, essential consumables, medical supplies, industrial raw materials anywhere in the country of 1.3 billion people.
  - A rare lull in passenger operations enabled it to run freight trains much faster;
  - For a first, it broke a new ground – running time-tabled parcel trains on demand;
  - Inter-country trade transit by rail across Bangladesh jumped, involving fast intermodal and parcel specials.
- Optimal utilization of technologies has been embraced to ensure a non-disruptive supply chain to channel the demand effectively, promote contactless, paperless transactions.
Inter-country trade transit – buoyant and hopeful

- A new ground broken in case of inter-country trade transaction.
  - Month of June closed with record interchange between India and Bangladesh – as many as 104 full train loads.

- For a first, IR ran out a parcels train of 16 VPs (carrying around 400 tonne mainly of dried chillies grown in Guntur area of Andhra Pradesh) from Reddipalam, a station on South Central Railway, to go past the Petrapole/Benapole border station on 13 July 2020.
  - Another train load of 2,440 tonne of onions from Dhoraji town in Rajkot in Gujarat to Gede-Darsana cross-border station, a distance of 2,425 km.
  - Yet another 15 VPU (parcel carrying vans) rake loaded with 51 Tata Ace mini trucks in Izzatnagar Division of North Eastern Railway in India left on 25 July for Petrapole/Benapole cross-border station.
In addition to railways, waterways emerged as a transport mainstay

- Not just railways carried several commodities from India to Bangladesh, which were traditionally moved only by road; India and Bangladesh jump started short-sea operation, commencing coastal shipping service, for example, connecting Krishnapatnam port on India’s east coast to Chattogram port in Bangladesh.

  - In July ’20, a containerized cargo shipment moved out of Kolkata to Chattogram port, further road-bridged through Bangladesh, and delivered at Agartala in India’s landlocked northeastern state of Tripura.

  - On 16 July, Bangladeshi vessel MV Shejyoti sailed out from India’s Haldia port, carrying trial shipments of two containers each of 50 tonne of TMT steel bars (destined to western Tripura) and 53 tonne of pulses (for Karimganj in Assam), reached Chattogram port on 4 August, and road-bridged to Tripura, reaching Agartala on 6 August.

  - On 4 September 2020, a consignment of cement aboard Bangladeshi vessel MB Premier sailed out from Daukandi in Bangladesh on a 93 km journey along Tripura’s largest river Gomati, and offloaded the cargo at Sonamura (Tripura) in India on 6 September.

- Signalling a milestone, an MoU signed between Container Company of Bangladesh (CCBL) and Container Corporation of India (CONCOR) for the development, management, and operation of container carrying trains and ICDs.

  - The inaugural container carrying train, consisting of 50 TEUs - 40 of them filled with FMCG and ten others with textile fabrics, ran out on 24 July 2020 from CONCOR’s CFS at Majerhat in Kolkata on way to Bangladesh, heralding the advent of long awaited multimodal transport.
Covid-19 pandemic: Railways earn people’s trust

- As the Secretariat papers explain, ASPA distinguished itself in preserving transport connectivity during the coronavirus crisis, re-establishing railways’ reliability and resilience.
- While taking a severe toll of lives and livelihood, the pandemic brought for railway systems green shoots of promise and potential.
- With death and despair came also a ray of possibility for railways to meaningfully contribute to sustainable development.
Railways lost the plot

- Now almost 200 years old, history’s great change-agent it was
  - It heralded a revolution
    - Impacted mental, social and economic beliefs and structures
- No organization can afford to get stuck in time, history or geography
  - Railways continued to remain stuck as a mere railway system, when
    - It needed to be a leader in a wider transport domain.
    - It needed to be in lead role in integrated logistics business.
    - It needed to co-opt ancillary modes, coordinate with them in partnership, not competition, all partners playing to their potential strength.
      - for cost-and-time-effective service to customer end-to-end.

Railways needs to recognize the pivotal role roads play for first/last mile connectivity, for which they be coopted as partners.
Facilitating Shift2Rail

- Rail is clearly a preferred modal choice -- safe, energy-efficient, land use-efficient, operationally predictable, with high throughput capacity per unit of transport, and, of course, environmentally benign.
- Even so, by and large, steady Shift2Rail strategy, for example, in EU has been of little avail.
- Most non bulk freight in LTL volumes requires first mile/last mile transit by road for railways to carry them between common user terminals/nodes.
- Such bi-modal transport involves additional time and cost in transfer of cargo from/to trucks and its aggregation/disaggregation at both ends.
- Road transport scores well by virtue of end-to-end movement.
- How to increase rail’s freight market share, especially of break-bulk sundry goods has no clear answer.
- Some generic suggestions may hold good for most, region’s railway systems, disparate in size, capacity, traffic mix, competition, will require analysis of the pattern and volume of traffic (domestic and international, also transit traffic) already moving - major stream-wise, mode-wise, cost-wise.

Railways must introspect and re-invent themselves
Elements impacting transport

- The **value** of trade grows much faster than its **weight**.
  - This compositional shift is happening both across products (the shift away from bulks and towards manufacturing) and within manufacturing.
- **Worldwide, transport growth has been consistently higher than the economic growth**
- Higher income countries import higher quality goods.
  - There is growing demand for
    - precision,
    - speed, and
    - coordination in anticipating customer needs down to the store level.
- **Speed** in delivery today is itself an important characteristic of product quality.

Falling costs of transportation make the world smaller.
Railways must perforce be run as a business

- It needs to keep a hawk’s eye on productivity, cost structure, and maintenance regime for optimal utilisation of assets – material and human.
  - ensuring constant improvements in areas of cost efficiency and availability through better maintenance and asset management.
- Asset management must be optimised; digitalisation helps the task becoming more efficient.
- There is scope to learn from the technological step change, including digitalisation, AI, and more.
- Policymakers need to create a fair mode-neutral framework, which allows for all costs involved to be reflected in the price of the service.
- The rail sector must demonstrate how it is part of the overall transport network, where each mode plays to its strength.
  - Multimodality should encourage rail operators to open up systems and processes to cooperation.
Major constraints IR confronts

- Capacity crunch is severe
  - Its arterial routes are highly congested; terminal capacity is limited.
    - Pending capacity enhancement through capital-intensive projects, challenge is to optimize the use of existing resources by operational and managerial innovations, and
    - rationalisation of passenger services, e.g., about 4,000 ‘regional’ (average distance of 110 km) passenger trains it operates daily.

- Rail freight pricing remains skewed, uncompetitive.
  - Freight accounts for 35% of IR’s total train-km, and 71% of revenue; passenger segment 65% of train-km, only 29% of revenue.
  - Low passenger fares compel IR to keep jacking up freight charges, which dampens freight volumes.
The pie got ever larger, but the rail slice is thinner

- Overwhelmingly patronized by captive customers, for whom railways is the only option, for long, IR has kept losing most of the LDHV cargo.
  - Even in case of nine bulk commodities, IR’s bread and butter, its share has been dwindling – to less than 40%.
- Coal alone making over 50% of its output as also the revenue, it needs to look for life beyond coal.
- IR confronts still more formidable challenges in days to come.
  - The national highways length, which already transports over 40% of all road-borne traffic, is being rapidly doubled, to 200,000 km, with capacity to carry 80% of the freight
  - The maximum load carrying capacity of heavy vehicles has been allowed to increase 20-25%, raising the axle load weight of trucks by 12-14%
Break-bulk freight - immense potential

- An estimated 1,500 million tonne of originating freight in India is break-bulk, most of which is transported by road, often over sub-continental distances.
  - LTL cargo journeying over 700 km and more is estimated to constitute approximately 1,000 million tonne.
    - FMCG (estimated Rs 450,000 crore annual market, running annual logistics bill of Rs 35,000 crore), automobiles, textiles, chemicals, et al.
- Containerisation with holistic intermodal development will be the key for LTL traffic.
  - India’s ‘Dwarf’ container initiative - a window of opportunity:
    - Its low height, in comparison with 20 foot ISO container, enables double stack movement on conventional electrified rail routes, yielding almost 70% additional loadability of low density commodities.
- A standardised pallet will help handle LWL/LCL general cargo by road or rail, by passenger or freight trains.
Re-dimension rail freight business

- The heart of a railways’ freight strategy is the creation of minimum critical mass for high volume, high speed freight corridors.
- Railways is a preferred mode, provided there be a minimum critical mass.
  - It needs to create this critical mass in partnership with other players.
  - It needs to devise innovative means to convert/consolidate LTL/LWL freight into train loads.
  - Railways would play the role of a wholesale carrier of bulk commodities in block trains and liner trains.
  - It will itself do only line haul, creating an expanded future of exclusive liner trains like inter-city passenger services – supplying wagons in train load formation.
  - Customer would deal on single window basis, only one lead service provider responsible for integrated logistics end-to-end.
- Higher speed freight trains:
  - Growing revenue potential of time-competitive high value freight transport service.
  - Some corridors may justify time-definite overnight inter-city journey of freight and documents, in cooperation with, say, integrators.
  - Like some railways in Europe and China improvise high speed EMUs to operate scheduled freight services similar to air freight carriers.
Trans-continental rail business

A concerted follow-up with long-term vision is required to explore the potential of Trans-Asia rail business

- Container flows from eastern and southern Asia to Europe are expected to increase 2.8 times over a 15 year period, to over 31m TEU.
- Rail carriage of containers on Eurasian corridors steadily growing – China-Europe freight trains aggregated to 5,122 in H-I/2020, up by 36% vis-à-vis H-I/2019. *(Global Times, China)* enabling shippers save transit time more than half (20 days by rail vs 40 days by sea), thus reducing their cost of frozen capital.
- Block liner trains on the TAR Northern Corridor, transporting high value, time-sensitive freight, e.g., computers, auto components, FMCG, achieving transit of 17-20 days for the 11,500km journey.
- The UIC sponsored ICOMOD (Intercontinental Combined Traffic) study, 2011 identified five corridors for the Eurasian land-bridge transport by rail.
  - There is up to an annual 500,000 TEU traffic potential under current conditions.
  - Eurasian container market expected to reach 17.4m TEU in 2020 and 22.7m TEU in 2030.
- A rail market share of just 5-6% would yield a throughput of about 500,000 TEU annually, or about 20 trains a day.
- To partially operationalise Trans Asian Railway’s Southern Corridor, trail container trains from Dhaka to Delhi, to Lahore, to Koh-i-Taftan, to Zahedan, to Istanbul on way to Europe are awaited.
  - Some ECO-supported container trains have already been run from Pakistan to Turkey via Kerman-Bam-Zahedan.
Trans Asian Railway Network (TARN)

- In context of developing and operationalizing TARN, main discussion has centred only around freight traffic, that too in international trade streams.
- It is essential that rail freight business be considered in its entirety, to include international as well as domestic traffic streams.
- Whereas the TAR Northern Corridor has been actively supporting Eurasian rail-bridge to make steady progress, the Southern Corridor remains beset with constraints, e.g., missing links (around 12,500 km for entire TARN, estimated to cost $75b).
- There appears little possibility of adequate resources to construct the missing links in a hurry.
- For the time being, a pragmatic way out will be to take a sub-regional route.
Efficacy of sub-regional approach

- TARN has four broad segments, reflecting varying features, standards, and levels of development as well as traffic volumes:
  - East Asian,
  - Southeast Asian,
  - South Asian, and
  - Central Asian.
- A sub-regional corridor, for example, involving Bangladesh, Bhutan, India and Nepal will facilitate seamless transit transport through the Kakarbitta-Panitanki-Phulbari-Bangabandhu corridor, allowing Bhutanese and Nepali trade to have easier access to Mongla port or Chittagong port.
- A dual approach may be of big help to wean away rail freight volumes from road:
  - the work already in progress, that is, the new rail lines being built/firmly proposed under bilateral relationships, for example, between India and Myanmar, India-Bangladesh, India-Nepal, India-Bhutan, should be pursued for expeditious completion; and
  - the old linkages lying dormant for long (as between India and Bangladesh), if suitably rehabilitated and strengthened, will provide additional connectivity at least cost, and in quick time. (Some of the dormant India-Bangladesh rail links are being activated).
- Some of South Asia’s sub-regional pilot projects in the transport sector could include: Agartala-Akhaura-Chittagong corridor, Birgunj-Katihar-Singhabad-Rohanpur-Chittagong with links to Jogpani, Biratnagar and Agartala, Kathmandu-Birgunj-Kolkata/Haldia, Phuntsholing-Hashimara.
- Similar sub-regional corridors of promising potential could be identified in Southeast Asia and Central Asia, O-D-wise, by road and rail.
Myanmar offers potential of a pivotal role to link South Asia with Southeast Asia

- India is constructing a rail link between Jiribam (Manipur) and Moreh (Myanmar), involving construction of Jiribam-Imphal-Moreh stretch (India), Tamu-Kalay-Segyi line (Myanmar), rehabilitatin of Segyi-Chaungu-Myohaung line.

- Likewise, Bangladesh has a critical role to play in boosting sub-regional connectivity and development of rail-led multimodal transport.

- Landlocked Nepal and Bhutan too will add to sub-region’s intermodal development when new rail links on the anvil fructify.

- There are two railway links under construction in Nepal: the Jayanagar (India) to Bardibas (Nepal) rail line project (length: 68.79 km - 2.99 km in India, 65.72 km in Nepal; and the Jogbani (India) to Biratnagar (Nepal) line (length: 18.6 km - 5.45 km in India, 13.15 km in Nepal.

- The Hasimara-Phuentsholing line, which will connect Bhutan to IR BG network, has also been proposed for construction.
Harnessing technologies for ease of doing business, raise efficiency, cut costs

• Propitious is the time now to prepare for the post-Covid-19 future by using the crisis to re-imagine, re-orient railways, creating ‘digital proximity’, embracing digital technologies such as web-based indenting and booking, acceptance of e-documents, real time trace and track facility, also optimizing asset utilization, enabling reduction in unit cost, ensuring ease of doing business.

• **Harmonization of equipment standards**

• A wide variety of rolling stock and hardware inducted into the railway systems creates problems of maintenance and impacts interoperability of train services.

• Incompatible designs of freight wagons and their sub-systems, including braking equipment, varying axle loads prevail over different railway systems in the region.

• This underscores the need for standardization and harmonization of rolling stock, track geometry, signalling systems, etc.

• A regional framework can promote joint ventures in some construction activities and production of rolling stock and communication hardware, provide economies of scale in addition to reducing proliferation of disparate products.
Thank You