UCLA Institute of Transportation Studies

JULY 2026

A Corridor Pilot for Better Track-Time Governance in Indian Railways

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Issue

Indian Railways has to use the same track for two essential purposes: moving trains and maintaining the infrastructure that makes safe movement of said trains possible. On busy corridors, this creates a constant conflict. The Operations department (hereafter "Operations") must keep passenger and freight trains moving, protect punctuality, and respond to disruptions. The Maintenance department (hereafter "Maintenance") needs predictable traffic "blocks" — periods when trains are stopped or regulated — so crews and machines can inspect, repair, and renew the track safely.

This issue becomes serious when corridors run close to or above planned capacity. In such conditions, every hour is contested. If maintenance gets less time, the railway may protect train movement today but face more failures, speed restrictions, and emergency repairs later. If maintenance blocks are poorly planned or overrun, train services suffer immediately. The problem is therefore not simply "more trains versus more maintenance." It is how the railway governs a scarce shared resource.

Indian Railways already has a rolling block planning system, but the plan often changes before execution. Blocks may be shifted, shortened, denied, or inserted late. This weakens trust between Operations and Maintenance. Maintenance may ask for extra time because it expects cuts. Operations may grant less time because it fears overruns. The result is a workable but inefficient system: trains continue to run and maintenance continues to happen, but with congestion, uncertainty, and repeated adjustment. This brief addresses how to make track-time commitments more credible and useful.

Study Approach

This study analyzes track allocation as a practical problem of how a busy railway shares limited time on the same track. First, Indian Railways' rules for planning maintenance blocks were reviewed, including the rolling block system and the way line capacity is calculated. This is helpful in understanding how the system is supposed to work on paper.

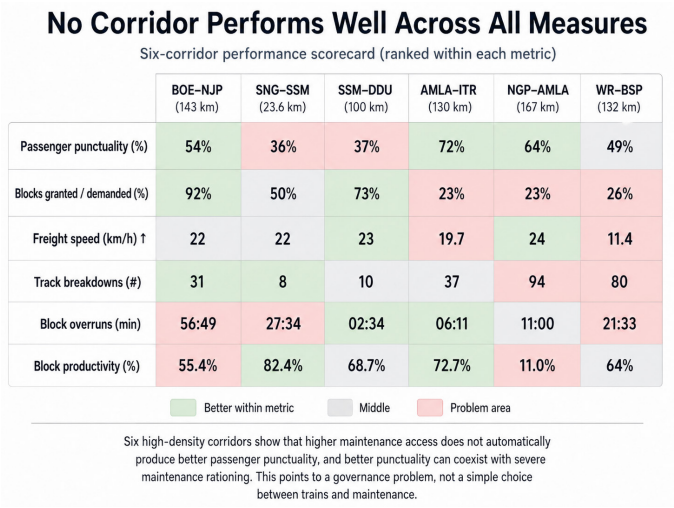
This study next tested how the system performs in practice by studying six heavily used railway corridors. These corridors were selected because they face high traffic pressure and therefore show the conflict between train movement and maintenance most clearly. For each corridor, the study looked at six simple indicators: passenger punctuality, freight speed, maintenance blocks granted compared with blocks demanded, productivity of maintenance blocks, block overruns, and track-related failures.

This study also compared Indian Railways with three other examples: Britain, Japan, and India's Dedicated Freight Corridor. These comparisons helped identify what other systems do differently, such as making disruptions more visible, protecting maintenance time more firmly, or separating freight movement from mixed traffic.

Key Findings

The study found that Indian Railways' current track-allocation system works, but not as well as it should.

- Trains continue to run and maintenance continues to happen, but both take place under congestion, repeated adjustment, and uncertainty.



	BOE–NJP (143 km)	SNG–SSM (23.6 km)	SSM–DDU (100 km)	AMLA–ITR (130 km)	NGP–AMLA (167 km)	WR–BSP (132 km)
Passenger punctuality (%)	54%	36%	37%	72%	64%	49%
Blocks granted / demanded (%)	92%	50%	73%	23%	23%	26%
Freight speed (km/h) ↑	22	22	23	19.7	24	11.4
Track breakdowns (#)	31	8	10	37	94	80
Block overruns (min)	56:49	27:34	02:34	06:11	11:00	21:33
Block productivity (%)	55.4%	82.4%	68.7%	72.7%	11.0%	64%

Figure 1. Corridor-level findings

- The six high-density corridors did not show one single problem. Some corridors had poor punctuality, some had very low freight speed, some had limited maintenance access, and some had high track failures (Figure 1).
- The maintenance problem is not only about getting more blocks. In some corridors, Maintenance received blocks but could not convert them efficiently into completed work. This shows that block quality, timing, readiness, and execution also matter.
- The rolling block plan is useful, but it is not always credible at the execution stage. Blocks may shift in section, timing, or duration, and some blocks may be inserted late.
- Operations and Maintenance respond rationally to the pressures they face, but their incentives are not fully aligned. This can lead to defensive behavior: Maintenance may over-ask, while Operations may under-grant.
- The main issue is governance. Indian Railways needs clearer requests, stronger commitments, visible reasons for deviations, and shared corridor-level performance measures.

Recommendations

- Indian Railways should treat track time as a scarce and valuable resource, not as a flexible reserve that can be repeatedly adjusted without consequence. The goal is not to choose between trains and maintenance, but to protect both current service and future reliability.
- Indian Railways should test a six-month Rolling Block Credibility Pilot on one or two saturated corridors, basically a change in the current block allocation system to see what Maintenance genuinely needs, what Operations actually commits to, and which side causes avoidable changes to scheduled blocks. The pilot should be chaired by the Divisional Railway Manager or Additional Divisional Railway Manager and should work within the existing divisional structure rather than creating a new organization.
- Maintenance requests should become clearer and more evidence-based. Each major block demand should state the reason for the work, minimum usable duration, preferred timing, readiness of machine and crew, expected output, and consequence of postponement.
- Daily blocks should become stronger commitments once finalized at the T-1 stage, increasing overall reliability of the railways. Changes should still be allowed for safety, weather, public-service needs, defence movement, or serious traffic pressure, but every change should carry a reason code.
- The pilot should track deviation minutes and recovery obligations. It should also use a corridor-level Key Performance Indicator that measures block reliability, usability, productivity, overruns, and wider outcomes such as punctuality, freight speed, and failures.

Shukla, U. (2026). Track Allocation in Indian Railways: Institutional Design, Departmental Incentives, and the Allocation of Scarce Track Time (Master's capstone, UCLA). Retrieved from: https://escholarship.org/uc/item/0sn0942s

Project ID UCLA ITS-LAS2604 | DOI:10.17610/T61K6H