Welcome to a Lecture on

STATION INSPECTIONS

MAINTENANCE BLOCKS

CAUTION ORDERS &

THEIR MONITORING

by :

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Outline of the Lecture

- Station inspections.
- Maintenance blocks.
- Caution orders & their monitoring.

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Outline of the Lecture

- Station inspections.

Station inspections

- The safety edifice of IR is supported by a system of inspections that has been steadily built up over 150 years.
- To that extent, improvement in safety is directly proportionate to the frequency and quality of inspections carried out in the field.*
- It is essential that systems prescribed are constantly monitored to confirm that they are being followed meticulously without resort to short cut methods.**

Station inspections

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Station inspections

- Unfortunately, the system of carrying out inspections has gradually fallen into disuse, and
  - the technique of conducting purposeful inspections is being forgotten.*
- This has partially been brought about as a result of the revolution in railway operations by means of block rake movement in early 1980s.
- In the pre – 1980 era, sprawling marshalling yards, huge transhipment sheds, big goods terminals along with numerous smaller yards, pilots and shunting engines were focal points of railway operations.*

Station inspections

- Block rake movements have transformed railway operations like never before and made them control office centric.*
- Officers can now manage operations well enough without facing the rigours of outdoor field inspections.
- This has resulted in an increasing tendency to relegate field inspections to a secondary level of importance.
- It is for this reason that the age – old system of inspections needs to be put on a sound footing for ensuring safety of train operations.

Station inspections

- Shri M. S. Gujral's comments on the importance of inspections :
- Inspections conducted at various levels serve multifarious purposes.
- Periodic inspections check utility and effectiveness of extant orders and existing systems;
  - as also ensure that working practices are as per laid down rules and procedures.

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- Inspections conducted at various levels serve multifarious purposes.
- Periodic inspections check utility and effectiveness of extant orders and existing systems;
  - as also ensure that working practices are as per laid down rules and procedures.
- Surprise inspections curb the tendency amongst staff of following short cut methods or adopting unsafe practices;
  - they also instil a sense of alertness and fear amongst them.

Station inspections

- Shri M. S. Gujral's comments on the importance of inspections :
- In addition to above, routine inspections are invaluable for
  - fault detection,
  - timely correction,
  - on the spot counselling and
  - redressal of staff grievances.

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- In addition to above, routine inspections are invaluable for
  - fault detection,
  - timely correction,
  - on the spot counselling and
  - redressal of staff grievances.
- Last but not the least, field inspections are possibly the best means available for bringing about long term systems improvement.

Station inspections

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Station inspections

- Accident inquiries indicate that accidents caused by staff are attributable less to their lack of knowledge of rules/procedures and
  – more to their negligence/carelessness in observing them.
- This is further compounded by failure of their supervisors to detect these in time by close detailed checks and to rectify the same.*
- Similarly, failure of officers to detect such slack supervision on the part of front line inspectors leads to system failure.**

Station inspections

- Conducting an effective inspection is both a science and an art.*
- In railway working, example set by management goes a long way in setting right systems.
- Therefore it is imperative that management sets an example by means of their personal actions.
- Example set by senior officers are picked up and followed by middle level officers.
- Similarly, examples set by branch officers are emulated by asstt. officers/supervisors.

Station inspections

- Why do accidents occur?*
- Most accidents occur during abnormal working.*
- How do we prevent accidents?*
- No accident occurs in isolation. Champa accident.*
- Inspections are the most effective means of prevention.
- Footplate on GZB – MB section.*
- Unsafe practices and shortcut methods have to be taken up with a firm hand.*
- In case of asset failures, ensuring safety comes first.*
- Department which are responsible for maintaining the asset will answer for train detention.*
- Counselling of both supervisory and frontline staff.

Station inspections

- 5 effective inspections in a month by each operating officer* is good enough to ensure safety.*
  - 1 footplate (by rotation).
  - 1 motor trolley.* This should cover station, cabin, traffic L-Xing gate etc.
  - 1 night inspection by road.
  - 2 miscellaneous inspections.*
    - Lobby.
    - Running Room.
    - Station yard.
    - Private siding.

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    - Private siding.
- 2 days and 1 night is adequate for above inspections.**

Station inspections

Type of inspection	1st day	2nd day	1st Night	Total
Footplate	1			1
Station – detailed	1			1
Miscellaneous – lobby	1			1
Motor trolley :				
Station – casual		3		3
Level crossing		2		2
Night inspection by road				
Station			2	2
Level crossing			1	1
Footplate*			1	1

Station inspections

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Station inspections

- Verify whether every employee is fully conversant with rules, instructions and procedures relating to his duties,
  - especially with respect to abnormal working.
- Ascertain that staff are performing their duties according to rules, instructions and procedures in force.
- Ascertain that registers, documents and other records are being maintained and preserved according to instructions.
- Inculcate discipline and build up the morale of the workers.
- Check compliance of previous inspection reports of officers.
- Analyse performance vis-à-vis target.

Station inspections

- Detect undesirable shortcuts, irregularities or unsafe practices being resorted to by the staff taking remedial action which may be :
  - (a) Educative, in case these are resorted to out of ignorance.
  - (b) Corrective, if there is something wrong in the working conditions, or there are system deficiencies.
  - (c) Punitive, if resorted to wilfully, negligently or persistently even after repeated guidance and counseling.

Station inspections

- Casual Inspection should be started by taking a round of the station yard, understanding the system of working,
  - including reception and despatch of trains, shunting procedures, facilities for simultaneous movements etc.

Station inspections

- Casual Inspection should be started by taking a round of the station yard, understanding the system of working, – including reception and despatch of trains, shunting procedures, facilities for simultaneous movements etc.
- These should then be cross checked with the provisions available in the Station Working Rules.
- Thereafter, safety inspection of the ASM's office should be undertaken.
- Inspection of various Books and Registers should be undertaken sequentially so that nothing is missed.

Station inspections

- The idea should be to conduct a thorough check of whatever areas are picked up.
- In case of lack of time, it would be better to leave out some aspects of working altogether rather than try and cover everything in a slipshod manner.
- The subjects that should be taken up in the decreasing order of their importance are as follows :
  - Registers of staff,
  - Train passing books and registers,
  - S&T books and registers,
  - Engineering books and registers,
  - other safety books and registers.

Station inspections

- My system has been to thoroughly scrutinize the Sectional TI's Inspection Register.*
- Last 2 detailed inspections conducted by the Sectional TI are gone through.
- During detailed inspection a Sectional TI is supposed to check each and every register, form and document for the period since his last detailed inspection.
- All registers, forms and documents that the TI has recorded as checked and found correct are gone through.
- Two consecutive detailed inspection notes should be gone through to see whether same mistakes have been repeated.

Station inspections

- Some of the shortcomings noticed during station inspections.
- TI's inspection register – index.
- Last 2 inspections – 10th January and 15th March.
- Supposed to inspect all forms and registers from the time of his last inspection till the current date.
  - Inspected from 11th January till 15th March.
  - Serial nos. 12345 till 12351.
  - Following discrepancies noticed :
  - Sn. 12347 – time not mentioned – name of staff .
  - Sn. 12349 – signature not taken – name of staff.

Station inspections

- Compliance written as “TI/SWR informed”.*
- Interim compliance to be written in pencil. Only after the final compliance has been obtained should entries be made in ink.
- Two advantages :
  - Firstly, an inspecting official can note that this particular item has not been complied with.
  - Secondly, Sectional TI during his next inspection will again note this down as unimplemented.

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- Special report to Sr. DOM on items which carry on for more than 2 detailed inspections.

Station inspections

- Night Inspection* :
  - Select aspects of night working to be inspected.*
  - Route chart.
  - Sleeping on duty.*
  - Incognito inspection.
  - Checking alertness of staff of adjoining work spots.
  - Impersonating the porter.*
  - Visibility of signals.
  - Alertness of running staff of through passing trains.*
  - Attitude of section controller.*
  - Testing the knowledge of staff.
  - Graded system of responsibility.

Station inspections

- Safety Meeting Register.
- Registers are casually filled up.
- Attendance of staff is poor.
- Staff attendance shown but physically not attended the meeting.
- Staff on being questioned are unable to explain what was supposed to have been discussed.
- Topics being given by hdqrts. depending on latest accidents.*

Station inspections

- Relay Room Register :
  - Cutting and overwriting in relay room opening register.
  - Purpose of opening of relay room not being entered in register.
  - Opening of relay room for long durations observed.

Station inspections

- Signal Failure Register :
  - Cross checking with T-369 (3b) and SI-26, it was observed that entries of individual failures not being entered in the register.
  - Delayed compliance of items noted in joint inspection of point and crossing.

Station inspections

- Disconnection Register :
  - Reason, date and time not being recorded.
  - Dis-connection/Re-connection memo not being pasted properly in register.
  - Name of S&T gear dis-connected and points/signals affected are not always indicated in the notice.*

Station inspections

- Switch clamps. Fixing near point machines.*
- If necessary fix 2 clamps close to each other.
- Indenting for new clamps.*
- Review requirement of switch clamps mentioned in SWR.
- No train operations should be carried out during a failure till all safety precautions have been taken as per rule.*

Station inspections

- At many stations ASMs are habitual of exchanging duty, sometimes performing for 16 hrs without break.
- Safety consciousness of controllers.*

Station inspections

- Earlier most accidents on traffic account were due to reception of train on blocked line.*
- At present, most accidents on traffic account are due to mis – manipulation of panels
- Many staff don't understand intricacies of panel working.
  - Leave alone, emergency operation of panel.
- They are barely able to operate the panel for normal working provided there are no failures.
- Opening of Relay Room.*
- SMSs to TIs to SMs to remaining staff.*
- Special training to staff who are weak by some of the better TIs.

Station inspections

- Database of inspections.
- We have to function through supervisory staff.*
- System failures in jurisdiction of same TI.
- Shortcomings noticed in the jurisdiction of one sectional TI should be informed to other sectional TIs during periodic operating meeting.*
- Emphasis should be more on educating the staff, rather than on fault finding.
- In case of repeated failures supervisors to be taken up.*

Station inspections

- First Line.
- AAA.
- BBB.
- CCC.
- DDD.
- EEE.
- FFF.
- GGG.
- HHH.
- III.
- JJJ.
- Last Line.

Outline of the Lecture

- Station inspections.
- Maintenance blocks.

Maintenance blocks

- From the Civil Engineering departments point of view, requirement of blocks is a bottomless pit.
- Monthly Joint Statement is prepared as follows :
  - Demanded 100 hrs.
  - Granted 60 hrs.
  - % of block granted 60%.

Maintenance blocks

- From the Civil Engineering departments point of view, requirement of blocks is a bottomless pit.
- Monthly Joint Statement is prepared as follows :
  - Demanded 100 hrs.
  - Granted 60 hrs.
  - % of block granted 60%.
- Despite only 60% of block being granted, all targets of civil engineering department are met with.*
- Exaggerated demands.*
- Repeated demand if block not granted on a particular day.*

Maintenance blocks

- Northern Railway's system of calculating requirement of maintenance blocks for Track Machines.

Maintenance blocks

- Optimum requirement of block for all types of maintenance works :
  - 100 kms. section.
  - 12 stations.
  - 100 L – Xings.

Maintenance blocks

- Optimum requirement of block for all types of maintenance works :
  - 100 kms. section.
  - 12 stations.
  - 100 L – Xings.
- Since requirement of civil engg. department would be maximum, their annual requirement of maintenance blocks has been worked out.*
- Requirement of other departments would be comparatively less and hence their requirement can be adjusted within the requirement of blocks by civil engg. department.

Maintenance blocks

- Goose which laid the Golden Eggs.
- For IR, whose end result is transport output, both production and production capacity are important, and must be well looked after .
- Prudence demands that production capacity of an asset must be maintained in good health in the long-term interest of the organisation.
- At the same time it must also be realised that granting of maintenance blocks has a cost attached to it.
- While the cost can be worked out for each individual section, it would generally vary.*

Maintenance blocks

- For branch line sections the cost could be negligible.
- For saturated trunk routes it would range from around Rs. 5 lakhs/hr. for a single line section to over Rs. 10 lakhs/hr. for both lines of a double line section.
- List of maintenance works that can only be carried out under traffic block.
- All blocks must be programmed, pre-planned and pre-notified, except in case of emergencies.
- Blocks must be given to the extent of 100% of actual requirement.

Maintenance blocks

- There must not be any incidents of block bursting and in case of any such occurrence, same must be analysed to see whether it was avoidable or not.*
- While it is desirable to grant maintenance blocks only during daytime, same may not always be possible.*
- Each block granted must be simultaneously utilized by all departments.*
- Modular matching of beats of senior supervisors will go a long way towards implementing above concept of integrated maintenance blocks.

Maintenance blocks

- There are certain activities of maintenance that require co-ordinated efforts of all 3 departments namely, civil, signal and electrical, or
  - sometimes even between 2 branches of the same department.

Maintenance blocks

- There are certain activities of maintenance that require co-ordinated efforts of all 3 departments namely, civil, signal and electrical, or
  – sometimes even between 2 branches of the same department.
- These include maintenance of points & crossings, emergency cross overs, shifting of track, level crossings etc.*
- Major blocks of > 4 hrs. must be planned by branch officer and supervised by at least a junior scale officer at site.

Maintenance blocks

- Major works of girder bridges, ROBs, FOBs should be completed during shadow blocks, as far as possible.

Maintenance blocks

- Today the biggest bane of civil engineering department is vulnerability of track machines whose maintenance has become more critical than even maintenance of track.
- It is well known that failures of track machines are common throughout IR, including failures while working in the block section in midst of a maintenance block.

Maintenance blocks

- Armoured warfare.
- A lone track machine on a 400 km. section cannot achieve much in a 4 hrs. block. The block basically gets wasted.
- On the other hand 6 separate sets of track machines (consisting of 3-4 machines each) working in shadow of 4 hrs. block can give at least 6 times more output for the same duration of block.*
- Track machines must also be deployed in large numbers on individual sections so that their combined strength acts as a force multiplier.

Maintenance blocks

- Planning for deployment of track machines must be done by civil engineering departments in consultation with operating branch.
- All track machines of a division must be concentrated on 2 or 3 select sections at a time.
- They must be split up into separate groups.
- These groups should work at locations at distances of about 75 kms from one another during the same 4 hrs. block/shadow block.
- After completing their maintenance work on a section for 1½ to 2 months, these track machines should be re-deployed on some other section as per program.

Maintenance blocks

- Pre – block preparation and post – block site management are equally important.
- All pre block preparations must be completed beforehand so that actual duration of block is kept to bare minimum.
- Before a block is physically taken availability of required materials at site and presence of adequate manpower both in terms of staff and supervisors should be ensured.
- Adequate safety precautions required and protection systems must also be in position.
- These include banner flags, leading flagman, detonators, fusee signals, walkie-talkie sets, portable control phones etc.

Outline of the Lecture

- Station inspections.
- Maintenance blocks.
- Caution orders & their monitoring.

Caution orders & their monitoring

- Speed Restrictions to be accepted only to the extent of 90% of ER time available.
- Minimum distance of 50 kms. between two successive speed restrictions.
- Weekly cross checking of Caution Orders.
- Roster of Sectional TIs for checking accuracy of Speed Restriction Boards displayed at site twice a week.
- In case of discrepancy, further blocks to be stopped.

Review

- Station inspection.
- Maintenance blocks.
- Caution orders & their monitoring.

Station Inspection, Maintenance blocks

Any questions please ?

Thank You

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