

NEW PATTERN OF TRAIN EXAMINATION OF GOODS STOCK

Introduction: The efficient working of freight stock is closely linked to the standard of yard maintenance. Several factors are responsible for good and quality examination/repairs in the yard. The method of examination is described as under.

New Pattern of Freight Train Examination: It is based on the Revised JPO issued by Railway board letter No. 94/M(N)/951/57 Vol-2 dated 25.10.04, Letter no. 2005/M(N)/951/13 Dated 07.04.05 and even no dated 25.04.2006 and 5.11.07.

Following are the main feature of new pattern examination of freights trains:

1. The freight train can only be subjected to examine for intensive End to End, Premium End to End and Close Circuit Rakes.
2. The practice of safe to run examination of freight trains per se may be discontinued.
3. En route Rolling-in-Examination of freight trains may be discontinued. However rolling in examination as part of intensive examination will continue.
4. Post loading examination by C&W Staff may be discontinued for all type of stock (except loading of steel consignment). This check is to be carried out by Guard and Driver as per standard proforma issued by Railway Board. The post loading check must be carried out by C&W Staff and securing of steel bundles with lashing chains may be ensured.
5. After Tippling the rake will be offered for post tippling examination, in case of less than three rakes per day, the check may be carried out by guard and driver as per standard proforma issued by railway board. In cases 3 or more rakes are being tippling, post tippling check will be done by Skelton C&W staff. After tippling the rakes should be subjected to post tippling check either by C&W Staff or by GUARD & Driver in case of non provision of C&W Staff in siding.
6. It should be ensured that unexamined lead (after unloading before next C&W Point) of freight trains running end to end pattern or invalid BPC in case of premier & cc rakes does not exceed 400 kilometer.
7. Since multiple loading and unloading are permitted in CC & Premium Rakes, its movement will be monitored through FOIS by Traffic Department with C & W control.
8. In case of mechanized loading and unloading (i.e. in BOXN wagon), examination by C&W will be desirable.
9. The CC rakes shall be offered for PME in empty condition at the CC base depot where the CC Rake was originally formed.
10. ROH and POH wagons from CC rake will be marked and detach at base Depot.
11. The rake integrity of CC rake as listed in the BPC should be maintained. However up to 4 wagons may be replaced by good examined wagons in the entire run between the two PME (05 BLC or one unit in case of BLC rakes allowed for attended or replaced).

Intensive End to End Examination:

In End to end pattern examination, the train will be examined in empty condition in nominated intensive yard and BPC will remain valid upto unloading point after loading under following conditions.

- i) The integrity of examined rake should not be disturbed by more than 4 wagons.
- ii) The examined rake should not be stabled by 24 hours and above at any examination yard.
- iii) Man-hours are decided as 56 for End to End pattern examination.
- iv) The destination must be endorsed on the BPC of loaded rake.

Back Loading Examination: After unloading, the train is required to be examined further intensively at a nearby Intensive yard. On demand, traffic department may send the empty rake for loading instead of offering further for intensive examination. In that case, the un-examined load should be dispatched for loading on Guard & Driver's safety checking memo or if feasible, the load may be examined by a flying squad (C&W). After loading, the loaded rake must be offered for intensive examination at the first intensive examination point in the direction of its movement. Such type of examination is termed as Back Loading Examination.

PREMIUM RAKES:

This type of examination for air brake stock has been introduced in Indian railway w.e.f. April 06 as per instructions issued by Railway Board.

The salient features of such types of examination are under:

1. Premium rake will be form out of air brake stock (i.e. BOXN, BOXNHS, BCN, BCNHS & BOBRN etc.) only.
2. Such rakes will be intensively examined in empty condition at nominated examination yard nominated by CME & COM.
3. Premium examination points should either be 'A' category or upgraded to 'A' Category examination point.
4. If any of the conditions, i.e. examination in empty condition or examination at nominated points is not satisfied; rake will not be certified as premium rake and will operate as normal end to end rake.
5. Stipulation to form rake out of Off POH /ROH wagons as in case of CC rakes are not applied in case of premium rakes.
6. Similar types of wagons are taken to form premium rakes, mixed wagons not allowed for such rake.
7. The rakes will be turned out with minimum 95% brake power and BPC will be issued on Green Book only.
8. The validity of BPC to be issued for 12 days including date of issue. However grace period of 3 days is given when rake is in loaded condition and on 15 days rake must be unloaded and offered for C &W examination.
9. The rake is handed over to Operating Department for multiple loading and unloading within 12 days.

10. After each loading and unloading, the rake must be offered for Guard and Driver check before commencement of journey as per proforma issued by Railway Board and observation will be recorded on the relevant column of the BPC.
11. Movement of premium rakes will be monitored through FOIS by Traffic Department with Mechanical Department.
12. If the rakes stabled in yard more than 24 hours, the rakes must be offered for C&W examination otherwise BPC will be treated as invalid.
13. Man hours are decided as 75 for Premium End to End (PEE) examination.
14. The integrity of rake will be maintained. However 4 wagons may be replaced by examined wagons en route.

Advantage of Premium Rake:

Following are the advantage of introducing premium rake examination:

1. Wagon turn round is reduced and loading cycle is increased by 3 times.
2. Rakes are available for maximum to Traffic Department.
3. During the year 2007-08 a profit of 2000 crore is made to Railway by increasing 40 million ton loading on premium rake pattern.
4. Overall average yard detention of Indian Railway is reduced from 15 hrs to 11.15 hrs.
5. Due to introduction of premium rakes the availability of rake for end to end examination over IR decreased from 400 rakes per day to 150 rakes per day due to this over all expenditure on examination reduced.

Disadvantage of Premium Rake:

Since the examination of premium rake is being also attended in yard which is yet upgraded to 'A' category, following are the disadvantages:-

1. Reject able Items for attending examination and repair of such rake are also not specified.
2. The rake is permitted for multiple loading and unloading on the basis of GDR check. It is experienced in N. C. Railway that GDR check is not effective and derailment of 3 premium rakes during 2006-07 as 2007-08 were occurred due to lack of GDR check which is not safe practice and not safe to rolling stock.
3. Grace period of 3 days is permitted when rakes are in loaded condition (i.e. in rare cases) and must be reached to unloading point within 15 days and on 15th days rake must be offered for C&W examination .

But it is experienced in NC Railway that Traffic Department is taking advantage of grace period, the premium rakes are received after loading on 12th day from the issue of BPC and thus rakes are running on invalid BPC. Such information is being sent to Railway Board in PCDO and operating department is requested to minimize such practice to safe running of rolling stock.

CLOSE CIRCUIT RAKES:

CC rake are being formed in term of Railway Board's letter No.94/M(N)/951/57 Vol- II dated 25.10.2004 and time to time instruction issued by Railway Board.

Following are the main feature of CC rakes:-

1. Railway must ensure that the infrastructural facilities at all the CC examination points are upgraded to 'A' category.
2. CC rakes will run on predefined path and under completion of day / km mention on BPC the rake should be examined at nominated base depot only.
3. Off POH/ROH wagon should be preferred during formation of CC rakes.
4. Examination of CC Rakes should be conducted in day light only (morning to sun set). However, if Close Circuit freight trains are examined during night hours, minimum illumination level of 100 to 150 lux is required for under gear examination as well as repair work of rake.
5. The examination should be conducted on nominated line by CRSE & CFTM of the Railway.
6. All rejectable items must be attended during examination of such rake.
7. The air brake wagons of same types of stocks are formed in CC rake. Mixed wagon cannot be allowed.
8. For examination of CC rake, 100 man hrs is to be taken.
9. After examination BPC with 100 % brake power is issued on prescribed yellow color certificate.
10. The examination of CC rakes is carried out where the minimum infrastructure facility for examination as standardized by CAMTECH is available.
11. There are 2 types of CC rakes examined, and validity of BPC is being issued over Indian railway.
 - a) 6000 kms /30 days whichever is earlier (examined in "A" cat. Yard)
 - b) 7500 kms/35 days whichever is the earliest (examined at Special "A" cat. Yard)
12. Grace period of 5 days is allowed if the rake is moving towards the base depot.
13. The rakes are handed over to Traffic Department for multiple loading/unloading within the validity of BPC and GDR check.
14. Listed wagons on BPC are allowed to run. En route if detachment or attachment of more than 4 wagons is done without examination by SSE/JE (C&W), BPC should be treated as invalid (In case of BLC 5 wagons/one unit)
15. Movement of CC rakes will be monitored through FOIS by Traffic Department with Mechanical Department.
15. If the rakes stabled in yard more than 24 hours, the rakes must be offered for C&W examination otherwise BPC will be treated as invalid.
16. The km runs must be endorsed by Driver and Guard on BPC in relevant column.
17. If the kilometrage have not been logged correctly and continuously the BPC will be deemed to be valid for 20 days only from the date of issue.

Further, zonal Railways shall maintain detailed record w.r.t. en route detachments. Brake power and detachment during examination of these rakes and give monthly feed back to board on their performance.

Railway must ensure that infrastructural facilities at all the above points are upgraded to 'A' category.

POST LOADING AND POST TIPLING EXAMINATION:

Vide Rly Bd's letter no. 2005/M(N)/951/13 dated 08.02.2006. Post loading examination by C&W staff was discontinued. Post loading check by Guard and Driver was introduced. In the para (iv) of Rly Bd's above letter dated 08.02.06. It was stipulated that:

After tipling the rake will be subjected to post tipling examination. In the case less than 3 rakes are being tipling per day, the check may be carried out by Guard & Driver as per proforma enclosed. In case 3 or more trains are being tipling, post tipling check will be done by skeleton C&W staff.

The same has been reviewed vide Rly Bd's letter No. 98/ M (N)/951/12/pt.1 dated 17.05.07, relevant paras are reproduced as follows:

1. Board has reviewed the subject matter and has decided to revise the instructions contained in para (iv) of aforesaid letter dated 08.02.06 on post tipling checks on freight trains as under:
 - a) After tipling rake should be subjected to post – tipling checks either by C&W staff or by Guards and Drivers in case of non provision of C&W staff in the siding.
 - b) As local condition may vary from siding to siding, based on recommendations of CME & COM, GMs may decide whether the post tipling check on a particular point will be entrusted to C&W staff or Guard and Driver. While deciding the matter one way or other, the following may be kept in mind:
 - i) Recovery of necessary charges from the owner of such sidings in case any defects damages are noticed.
 - ii) Post tipling check by Guards and Drivers should be done as per format enclosed with the above mentioned letter of Railway Board.
2. Rules regarding starting of trains from non-C&W points after examination by Guard and Drivers should be strictly enforced.

All other provisions of Board's letter no.2005/ M (N)/ 951/13 dated 08.02.2006. It is to be followed.

GDR CHECK:

GDR check has been defined as, required to be done only for rakes, which are to be offered to C&W examination, where due after completion of loading and unloading cycle and are required moving another 400 km before hitting the C&W points.

The GDR check by guard and loco pilot should invariably ensure the following:-

1. Adequacy of Air pressure in motive power and brake van.
2. Ensure Air pressure continuity from loco to last vehicle.
3. Success of brake feel test.
4. Adequacy of brake power by counting operative/non-operative pistons.

5. Shall ensure by visual examination that there are no loose fitting in the under gear including brake blocks, safety brackets, track area, brake gear pins etc. which may danger the safe running of train. This examination shall be one by walking along the length of the train by loco pilot on one side and by Guard on other side.
6. Guard and loco pilot shall jointly prepare a memo in triplicate indicating the brake power deficiency, if any. They shall append their signature on the same and both of them shall retain a copy of the same and third copy shall be handed over to station master on duty.
7. In case of premium end to end rakes the observation by the guard and loco pilot will be recorded under the relevant column of the BPC.

The GDR check should not lead to a false sense of adequacy of brake power in the psyche of the loco pilot. So apart from adequacy of air pressure in the locomotive and the last vehicle, the loco pilot should have the confidence on the adequacy of the brake power only after conducting the brake feel test and this aspects of sufficiency of brake power of the train should not be diluted by other visual examination by Guard and Loco Pilot .

Since premium rakes allowed for multiple loading and unloading up to 12 days based on the GDR check, there is an urgent need to bring improvement in quality of GDR checks by imparting suitable training to all goods Drivers and Guards. Some of the areas that need to be specifically covered in such training are as follows:

1. Significance of post loading and post tipping examination.
2. Items to be checked: critical assemblies and components: procedure for checking.
3. Type of BPCs: validity of BPC: action to be taken in the case of invalid BPC.
4. Type of tippers/pay loaders: nature of the damage caused to the freight stock during loading per tipping operation.
5. How to check brake power of air brake train? How to check continuity of air pressure in trains?
6. How to check condition of couplers, hoses and other under gear components.
7. Types of the angle cocks: open/close position of different type of the Angle cocks.
8. Empty/load device: principle of working/correct position of empty/load device handle.
9. Types of the bogies suspension arrangement, brake gear components, common defect of spring, brake pull load, brake beam, safety bracket, brake block etc. And action to be taken in each defect.
10. Type of hand brake, procedure of release/application of various types of hand brakes/defect of hand brake.
11. Type of doors and their locking in various type of wagons, door opening mechanism of BOBRN wagons.
12. Action to be taken for various defects in freight stocks/train.

Post Loading/ Post Tipling Checks by the Guard and the Driver:

Items to Be Checked By Guard and Drivers

1.	All CBCs and Air Hoses are properly coupled and locked.
2.	All the Angle Cocks are in open condition.
3.	The last Angle Cock is in closed condition.
4.	Empty/Load device handle is in proper position.
5.	There is no loose fitting/hanging part like spring push-pull rod, Brake Beam, Safety brackets, Brake blocks etc. which may endanger safe running of the train.
6.	Hand Brakes are released.
7.	Doors of wagons are closed and locked / secured.
8.	Check continuity of the air pressure before starting.

Proforma for joint check by the Driver and the Guard

1.	Date	:
2.	Train No. and Loco number	:
3.	From.....	To
4.	BPC No.; Date & Station of Issue	:	
5.	Loaded at	Or	Tipling at
6.	Time of Locomotive Attachment	:
7.	Total Load	:

 (Signature of Driver)
 Driver's Name.....

 (Signature of Guard)
 Guard's Name.....

(This memo should be prepared in three copies, one copy to be kept with Driver, one with the Guard and one will be given by the Guard to the Station Master / Yard Master.)

INTENSIVE EXAMINATION OF GOODS TRAINS

The intensive examination is a rejection standard examination with intensive repair to rolling stock, the purpose of which being to permit extended runs of through trains while raising the general standard of fitness of rolling stock by giving concentrated attention to the wagon at the time of dispatch from originating yard to destination. During intensive repair all rejectable and desirable items are to be attended.

Following steps must be taken to attend in intensive examination:

a) Rolling in examination including axle box feeling

Only all terminating trains requiring intensive examination should be given rolling in examination while entering a train examination depot. The following inspection should be carried out during rolling in examination:

- i) In-motion inspection and observation of under gear of wagons for any loose or dangling components and flat places on tyres/wheels.
- ii) Immediately after the train has come to a halt, all axle boxes should be felt/ temperature measurement taken with contact-less thermometers and those, which are found running at high temperature (more than 90⁰C), should be marked sick.
- iii) Examination of any abnormal behavior of any of the vehicles or any other observation which may be related to the safety of the train.
- iv) The rolling-in examination must be conducted to detect any skidded wheel.
- v) Incoming BPC should be collected by the C&W staff.

b) Intensive examination of goods trains including repairs, detachment of sick wagons and brake testing

During intensive examination of goods train, following items must be attended.

1. Inspection and repairs of running gear fittings.
2. Inspection and repairs of brake gear and spring gears.
3. Inspection and repairs of draw and buffing gear.
4. Checking and making good the deficiency of safety fittings, safety brackets, safety loops, etc.
5. Replacement of brake blocks:
 - a) Brake blocks should be replaced on reaching condemning thickness.
 - b) To ensure correct fitment of brake blocks, only spring steel key as per RDSO Drg. No. W/BG-6150 should only be used.
 - c) After fitment of brake block and key on brake head fitment of split pin should be ensured.
6. Correct fitment of washers, bulb cotters and all brake gear pins to be ensured.
7. Correct functioning and positioning of empty load device.
8. Checking and proper securing of doors of covered wagons.
9. Look for abnormal and /or unequal CBC height, Wear plate, Knuckle, etc. to the extent possible by visual examination. In case of doubt, the CBC height should be measured.
10. Meticulous check of brake cylinders, distributor valves, auxiliary reservoirs, control reservoirs and other pipe joints should be carried out to ensure that these are in proper working order. Isolating cocks and angle cocks to be checked for proper position. Brake cylinder should be released and checked for piston stroke for empty and loaded position.
11. After brakes are released, the wheel profile should be examined visually. If any defect is noticed, it should be checked with tyre defect gauge and wagon to be marked sick for wheel changing, if required. If bent axle is suspected wheel gauging must be done.
12. The bogies, complete side frames and bolsters are to be visually examined for cracks and missing parts. Bolster springs, Snubbers, spigots, centre pivots fastening, side bearer and elastomeric pads should be checked for defects, if any.

13. Examine brake rigging components with special attention to brake beam deformation and wear on integral brake shoe bracket. Check intactness of the pull and push rods with pins, washers, split pins and cotters, etc. Hand brakes must be checked for smooth and effective operation.
14. Visual examination of under frame members, body, door mechanism, CBC wear or deficiency of parts to be marked and their operation to be checked.
15. Brake power should be tested.
16. Where a rejectable defect cannot be attended to on the train in the yard, the wagon shall be damaged labelled for attention in the sick line.
17. Brake adjustment shall be done as per wheel diameter by adjusting End Pull Rod hole position.
18. Visual examination of under frame members, body, door mechanism for any defects/damages. Attend, if necessary.

c) Issue of Intensive Brake Power Certificate after ensuring brake continuity of formed load

After ensuring brake continuity of intensive examined rake, necessary BPC to be issued to the guard & driver as per type of examination for further movement of the rake.

Brake Power Certificate (BPC):

This is a certificate jointly signed by guard, driver and C&W supervisor prepared in triplicate by SSE/JE (C&W) after ensuring vehicle attached in train is fit to run and required amount of air pressure is maintain in engine and brake van / last vehicle.

BPC contains:

It contains BPC number with date, issued by yard/division/Railway, train number, loco number, loads and stock, break up of load, total no. of brake cylinders, brake power % age of the train, amount of air pressure in engine and brake van and first and last two vehicles number respectively.

BPC is to be issued in prescribed colour proforma as under:

Intensive End to End	- White colour	- 90 %
Premium rake	- Green colour	- 95 %
CC rake	- Yellow colour	- 100 %

Colour of e-BPC will be white.

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