

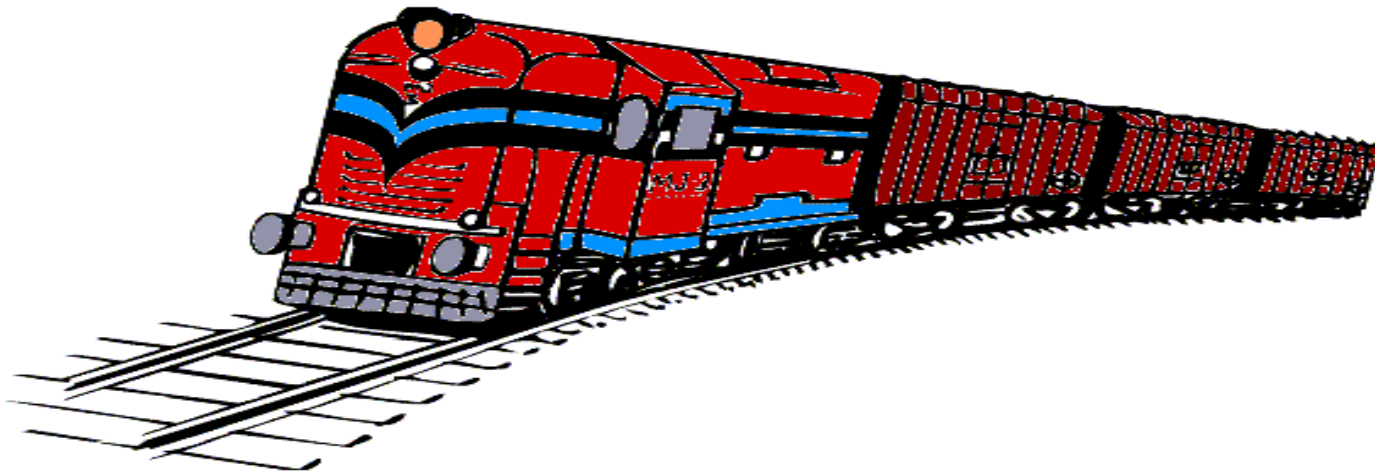
SEMINAR ON BRAKE BINDING



PRESENTATION

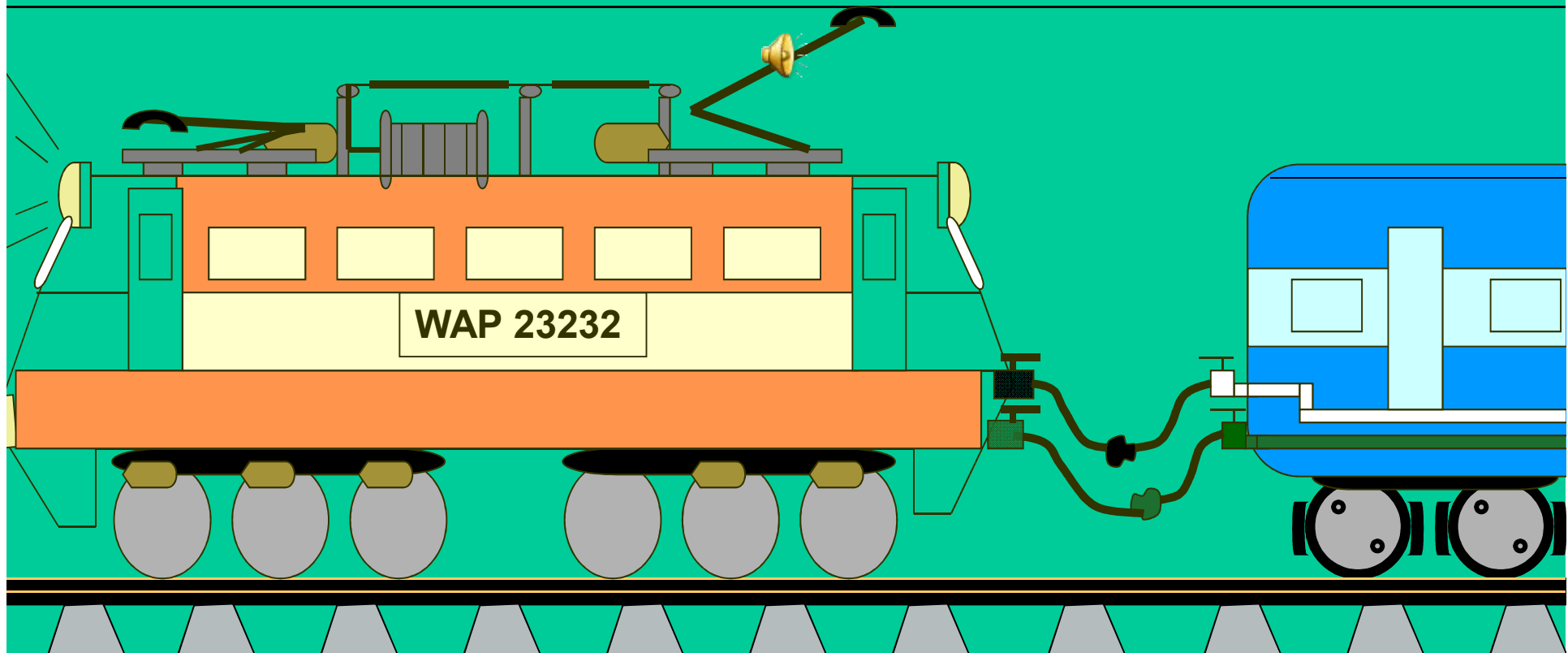
BY

STC/SBC

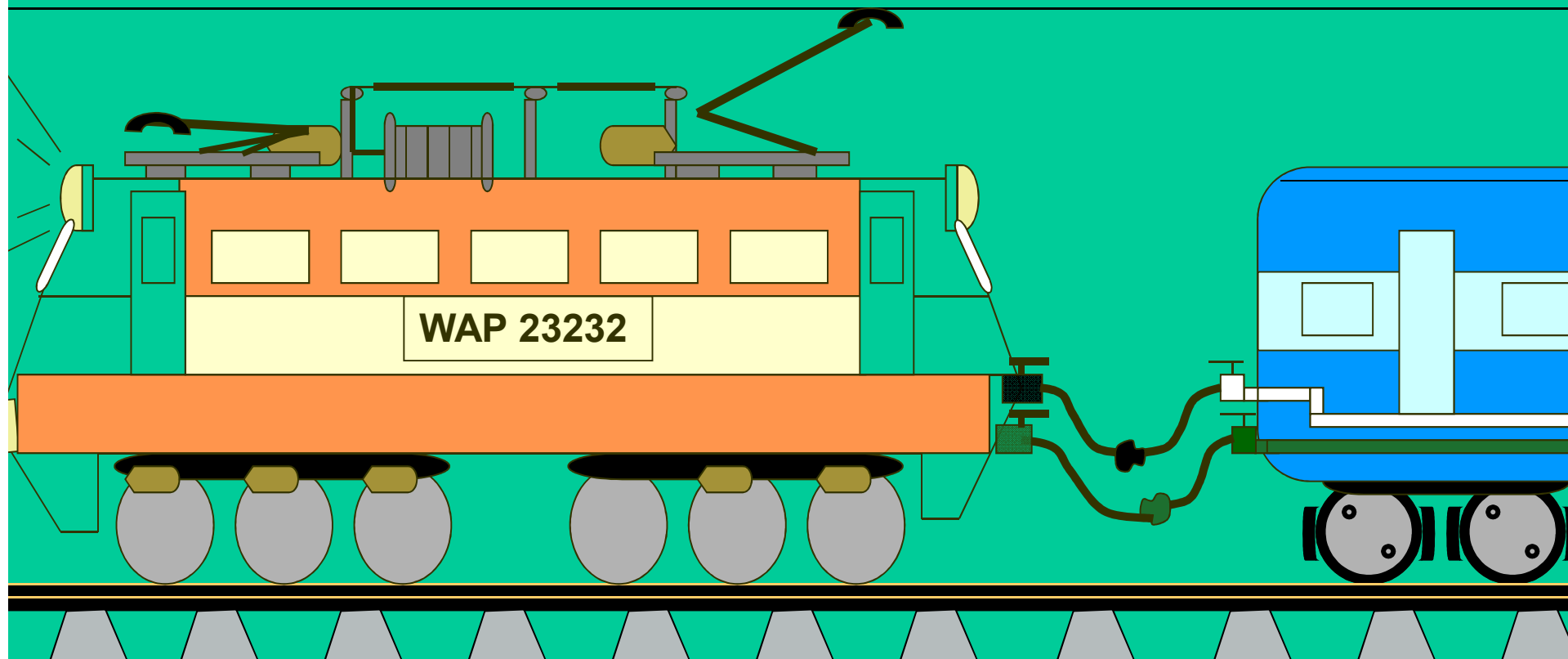


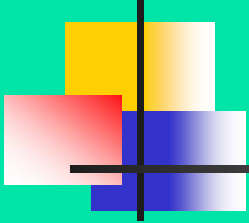
BRAKE BINDING IS AN UNINTENTED APPLICATION OF BRAKES PARTIALLY OR TOTALLY IMPEDING THE ROTATION OF THE -WHEEL.

TRAIN RUN IN NORMAL CONDITION



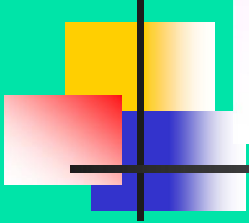
TRAIN RUN WITH BRAKE BINDING CONDITION





BRAKE BINDING IS USUALLY CAUSED BY:

- CYLINDER REMAINING IN APPLIED CONDITION.
- RIGGING NOT RETURNING TO RELEASE POSITION EVEN AFTER CYLINDER IS RELEASED.
- WEDGING OF BRAKE BLOCK BETWEEN BOGIE FRAME AND WHEEL.
- HAND BRAKE NOT RELEASED IN BRAKE VAN.



IT IS A WELL KNOWN TERM TO **RLY STAFF**

DURING RELEASE EVEN AFTER BP IS CHARGED TO 5 Kg/Cm² DUE TO VARIOUS REASONS, THE BRAKE WILL NOT RELEASE AND THUS THE WHEELS NOT REVOLVE FREELY ON THE TRACK. THIS IS CALLED BRAKE BINDING.



TECHNICALLY BRAKE BINDING IS A PHENOMENON OF

❖ **UNWANTED BRAKE APPLICATION.**

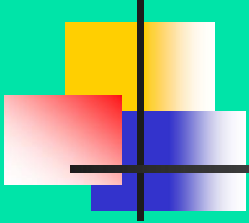
❖ **NO DESIRED RELEASE.**

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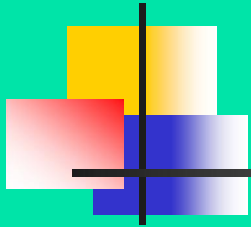
Exit



UNWANTED BRAKE APPLICATION

AIR BRAKE SYSTEM OPERATES WITH MECHANICAL COMPONENTS WITH PNEUMATIC ENERGY. ANY PROBLEM WITH AIR PRESSURE OR MECHANICAL COMPONENTS WILL CAUSE UNWANTED BRAKE APPLICATION DURING RUN.





NO DESIRED RELEASE

AFTER BRAKE APPLICATION SOME TIMES BRAKE CYLINDER IS NOT GETTING RELEASED UNDER NORMAL CONDITION AND CAUSE BRAKE BINDING.





UNWANTED BRAKE APPLICATION

MECHANICAL REASONS

PNEUMATIC REASONS

COMPONENT
FAILURE

IMPROPER
CLEARANCE

COMPONENT
FAILURE

PRESSURE
TROUBLE

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MECHANICAL REASONS

COMPONENT FAILURE

- UNEVEN THICKNESS OF BRAKE BLOCK ON THE SAME TRUSS BEAM.
- HAND BRAKE FULLY OR PARTIALLY ON.
- BRAKE BLOCK MOUNTING OVER THE WHEEL.

MECHANICAL REASONS

IMPROPER CLEARANCE

- BRAKE SHOE JAMMING.
- BRAKE BEAM RIGID.
- IMPROPER MANUAL ADJUSTMENT OF BRAKE GEAR .

EXIT

PNEUMATIC REASONS

COMPONENT FAILURE

- ➡ FAILURE OF MU WASHER.
- ➡ DISCOUPLING OF PALM ENDS.
- ➡ BP AIR HOSE BURST.
- ➡ DEFECTIVE ANGLE COCK.
- ➡ LEAKAGE FROM PIPE JOINTS, DRAIN PLUGS OF AR & CR.
- ➡ CUT OFF ANGLE COCK IN CLOSED POSITION.



PNEUMATIC REASONS

PRESSURE TROUBLE

- **OVER CHARGING OF BP. DUE TO DIFFERENCE OF BP PRESSURE MAINTAINED BY LOCO BEFORE AND AFTER LOCO CHANGING.**
- **SUDDEN HEAVY LEAKAGE DURING RUN IN FORMATION AND IN LOCO BP.**
- **DEFECTIVE A9 VALVE IN LOCO.**

EXIT



NO DESIRED RELEASE

MECHANICAL REASONS

AFTER APPLICATION BRAKES NOT RELEASED.

MALFUNCTIONING OF SAB.

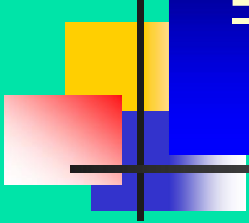
MALFUNCTIONING OF DV.

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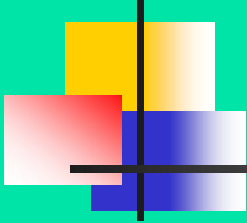
Exit



AFTER APPLICATION BRAKES NOT RELEASED DUE TO

- ✧ BRAKE CYLINDER RELEASE SPRING
WEAK OR BROKEN.
- ✧ PISTON ROD BENT.

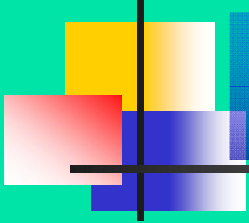
EXIT



MALFUNCTIONING OF **SAB DUE TO.**

- ✧ **IMPROPER 'A' DIMENSION.**
- ✧ **AFTER APPLICATION SAB FAILS
DUE TO BREAKAGE OF
SPINDLE.**

EXIT



MALFUNCTIONING OF DV.

✧ ERRATIC BEHAVIOUR OF
SPRINGS IN DV.

EXIT



PNEUMATIC FAILURES

BC PRESSURE NOT RELEASING AFTER APPLICATION DUE TO

- ✓ EXHAUST PORT BLOCKED DUE TO MOISTURE CONTENT.
- ✓ INSUFFICIENT RELEASE TIME ALLOWED BY DRIVER.

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CR PRESSURE NOT RELEASING DURING MANUAL RELEASE



**BRAKE BINDING IS AN
UNINTENTED APPLICATION
OF BRAKES PARTIALLY OR
TOTALLY IMPENDING THE
ROTATION OF THE WHEEL.**

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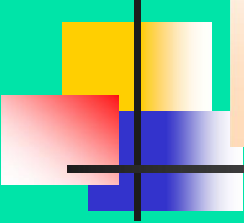
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BRAKE BINDING IS USUALLY CAUSED BY:

- ❖ **CYLINDER REMAINING IN APPLIED CONDITION.**
- ❖ **RIGGING NOT RETURNING TO RELEASE POSITION EVEN AFTER CYLINDER IS RELEASED.**
- ❖ **WEDGING OF BRAKE BLOCK BETWEEN BOGIE FRAME AND WHEEL.**
- ❖ **HAND BRAKE NOT RELEASED IN BRAKE VAN.**



REPERCUSSIONS OF BRAKE BINDING

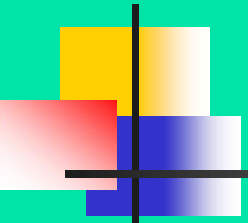
- ➔ DAMAGES THE WHEELS.
- ➔ DAMAGES THE BEARING.
- ➔ DISCOMFORT TO THE PASSENGERS.
- ➔ LEADS TO DETENTION TO THE TRAIN.
- ➔ LEADS TO DETACHMENT OF ROLLING STOCK ENROUTE.
- ➔ LEADS TO TRAIN PARTING.
- ➔ LEADS TO HIGH POWER / FUEL CONSUMPTION.
- ➔ DAMAGES THE TRACK.

CAUSES OF BRAKE BINDING

-
- BRAKE PIPE PRESSURE
 - AUXILARY RESERVOIR
 - CONTROL RESERVOIR
 - DISTRIBUTOR VALVE
 - BRAKE CYLINDER
 - SAB
 - LOAD-EMPTY DEVICE
 - HAND BRAKE
 - TRUSS BEAM
 - BRAKE BLOCK (FREE MOVEMENT OF B'BLOCK)
 - ANGLE COCK, AIR HOSES
 - FEED PIPE
 - FLOATING LEVERS, HANGERS
 - BRAKE GEAR PINS

CAUSES OF BRAKE BINDING

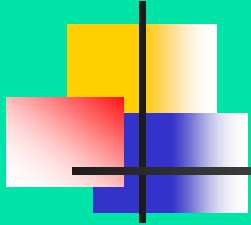
- BRAKE PIPE PRESSURE
- AUXILARY RESERVOIR
- CONTROL RESERVOIR
- DISTRIBUTOR VALVE
- BRAKE CYLINDER
- SAB
- LOAD-EMPTY DEVICE
- HAND BRAKE
- TRUSS BEAM
- BRAKE BLOCK (FREE MOVEMENT OF B'BLOCK)
- **ANGLE COCK, AIR HOSES**
- **FEED PIPE**
- **FLOATING LEVERS, HANGERS**
- **BRAKE GEAR PINS**



BRAKE PRESSURE LESS **THAN 5Kg/Cm²**

- LEAKAGE IN AIR HOSES.
- LEAKAGE THROUGH CUT-OFF ANGLE COCKS.
- LEAKAGE THROUGH DIRT COLLECTOR.
- LEAKAGE THROUGH BRAKE PIPES.
- LEAKAGE IN DV PARTICULARLY AT THE JOINTS.

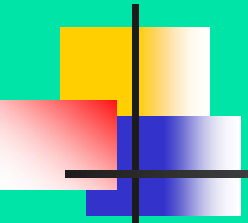
EXIT



CR PRESSURE MORE THEN BP

1. WHENEVER LOCOS ARE REVERSED AT JUNCTION STATION.
2. DUE TO DIFFERENCE IN CALIBRATION OF BP GAUGES IN THE LOCO.

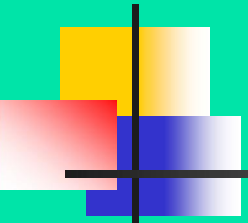
EXIT



LEAKAGE IN AR

- INCASE OF SINGLE PIPE AR IS CHARGED THORUGH BRAKE PIPE.
- EXCESSIVE LEAKAGE IN AR DUE TO WORKING OUT OF DRAIN PLUG OR CORROSION AND FOREIGN BODY HIT ON AR PREVENTS RECHARGING OF BP TO 5Kg/Cm^2 .

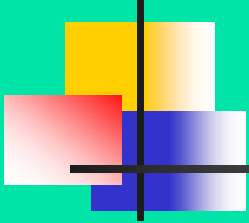
EXIT



DEFECT IN DISTRIBUTOR VALVE

- EXHAUST PORT BLOCKED DUE TO DUST & MOISTURE CONTENT.
- INTER CHANGING OF DV BETWEEN GOODS AND COACHES.
- DUE TO DEFECTIVE R-CHARGER (**EK DV**) AR CHECK VALVE (**C₃W DV**) AR PRESSURE OF **6Kg/Cm²** ENTERS IN TO BP & CR IS OVER CHARGED.

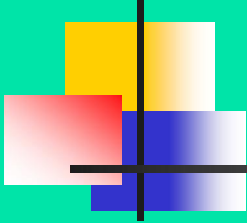
EXIT



DEFECT IN BRAKE CYLINDER

- BENT PISTON ROD.
- WEAK / BROKEN RETURN SPRING.
- JAMMED PISTON.
- BRAKE CYLINDER LEAKAGE.

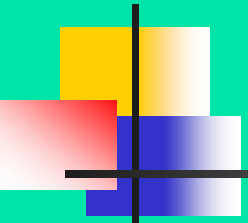
EXIT



DEFECT IN SAB

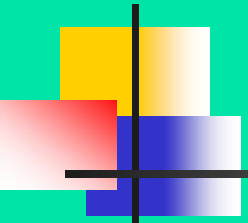
- ❖ BRAKE REGULATOR NOT PAYING OUT SLACK AFTER BRAKE APPLICATION.
- ❖ CORRECT LENGTH OF PULL ROD FOR PARTICULAR TYPE OF COACH TO BE USED OTHERWISE THIS WILL RESULT IN INCORRECT "**E**" DIMENTION & FAILURE ON RUN.
- ❖ WHILE WELDING PULL ROD RETURN LEAD IS CONNECTED CLOSE TO THE POINT OF WELDING.

EXIT



DEFECT IN LOAD-EMPTY DEVICE

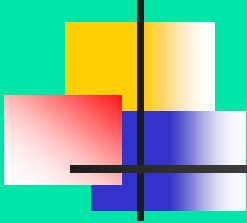
- JAMMING OF HORIZONTAL LEVER.
- WRONG SETTING OF CHANGE OVER HANDLE WHEN THE WAGON IS EMPTY.
- EMPTY TIE ROD SETTING IS TAMPERED.



REMEDIAL MEASURES

- LUBRICATE & CHECK HORIZONTAL LEVER FOR ITS FREE MOVEMENT DURING **POH/ROH & SICK LINE** REPAIR.
- WELD AN ANTI ROTATION LUG BETWEEN SLEEVE NUT AND EMPTY TIE ROD.

EXIT



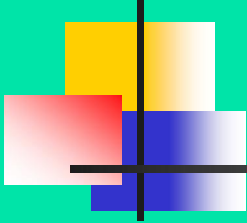
DEFECTIVE HAND BRAKE

- **JAMMING OF HAND BRAKE.**

REMEDIAL MEASURE

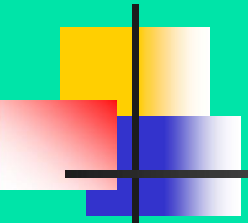
- EVERY TRIP OPERATE THE HAND BRAKE ,DURING **POH / ROH & SICK LINE** REPAIR.
- CLEAN AND LUBRICATE THE MOVING PARTS .

EXIT



DEFECTIVE TRUSS BEAM

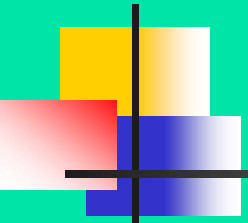
- **EXCESSIVE WORN OUT BRAKE BEAM AT ENDS WILL THROW BRAKE HEADS AND B.BLOCKS OUT OF WHEEL TREAD & WEDGE BETWEEN WHEEL & PRIMARY SPRING IN CASE OF COACHING STOCK. IN GOODS STOCK BRAKE BLOCK WILL BE WEDGED BETWEEN WHEEL AND BOGIE FRAME .**



REMEDIAL MEASURES

- WORN OUT TRUSS BEAMS AND BUSHES TO BE CHANGED DURING IOH / POH AND MAINTENANCE.
- SECURE THE BRAKE HEADS PROPERLY WITH THE TRUSS BEAMS WITH THE CORRECT SIZE SPLIT PINS.
- CHANGE THE WORN-OUT TRUSS BEAMS.

EXIT



INTER CHANGING OF BRAKE BLOCK

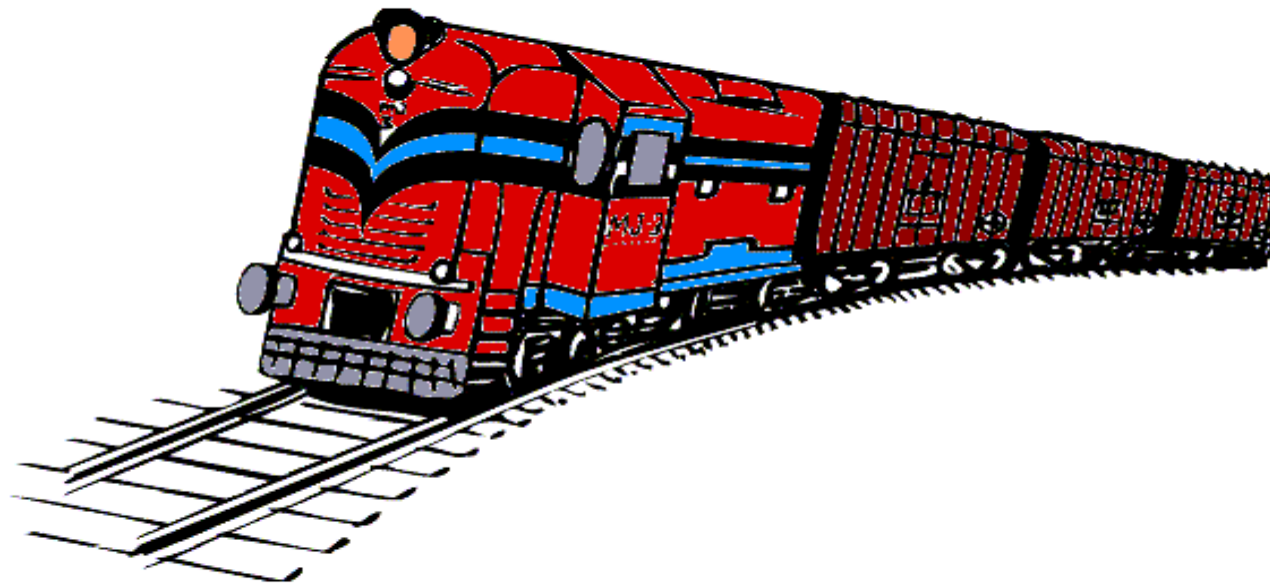
- ❶ **"L"** TYPE LOW FRICTION COMPOSITE BRAKE BLOCK OR CAST IRON BRAKE BLOCK ARE TO BE USED FOR UNDERFRAME MOUNTED AIR BRAKE SYSTEM.
- ❷ **"K"** TYPE HIGH FRICTION COMPOSITE BRAKE BLOCK TO BE USED FOR BOGIE MOUNTED BRAKE SYSTEM.
- ❸ USE PROPER BRAKE HEADS .

EXIT



RELEASING OF BRAKE BINDING

WAGONS



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BC IN APPLIED CONDITION.

BC IN RELEASED CONDITION.

BC IN RELEASED CONDITION

APPLY & RELEASE HAND BRAKE

**IF NOT RELEASED
THEN ROTATE SAB**

**STILL B.BINDING
IS NOT RELEASED**

**REMOVE ANY BRAKE
GEAR PIN**

EXIT

BC IN APPLIED CONDITION

PULL QRV

BC RELEASED

ISOLATE DV

BC NOT RELEASED

ISOLATE DV

BC RELEASED

BC NOT RELEASED

UN SCREW M20 NUT
(CYLINDER DRAIN PLUG)

OR

UNSCREW CYLINDER
FLANGE NUT

EXIT

BC IN APPLIED CONDITION

PULL QRV

BC RELEASED

ISOLATE DV

BC NOT RELEASED

ISOLATE DV

BC RELEASED

BC NOT RELEASED

UN SCREW M20 NUT
(CYLINDER DRAIN PLUG)

OR

UNSCREW CYLINDER
FLANGE NUT

EXIT

EXIT



EXIT



EXIT



EXIT



EXIT





RELEASING OF BRAKE BINDING

COACHES

BRAKE BINDING IN UNDER FRAME MOUNTED COACHES

BC IN APPLIED CONDITION.

✓ BC IN RELEASED CONDITION.

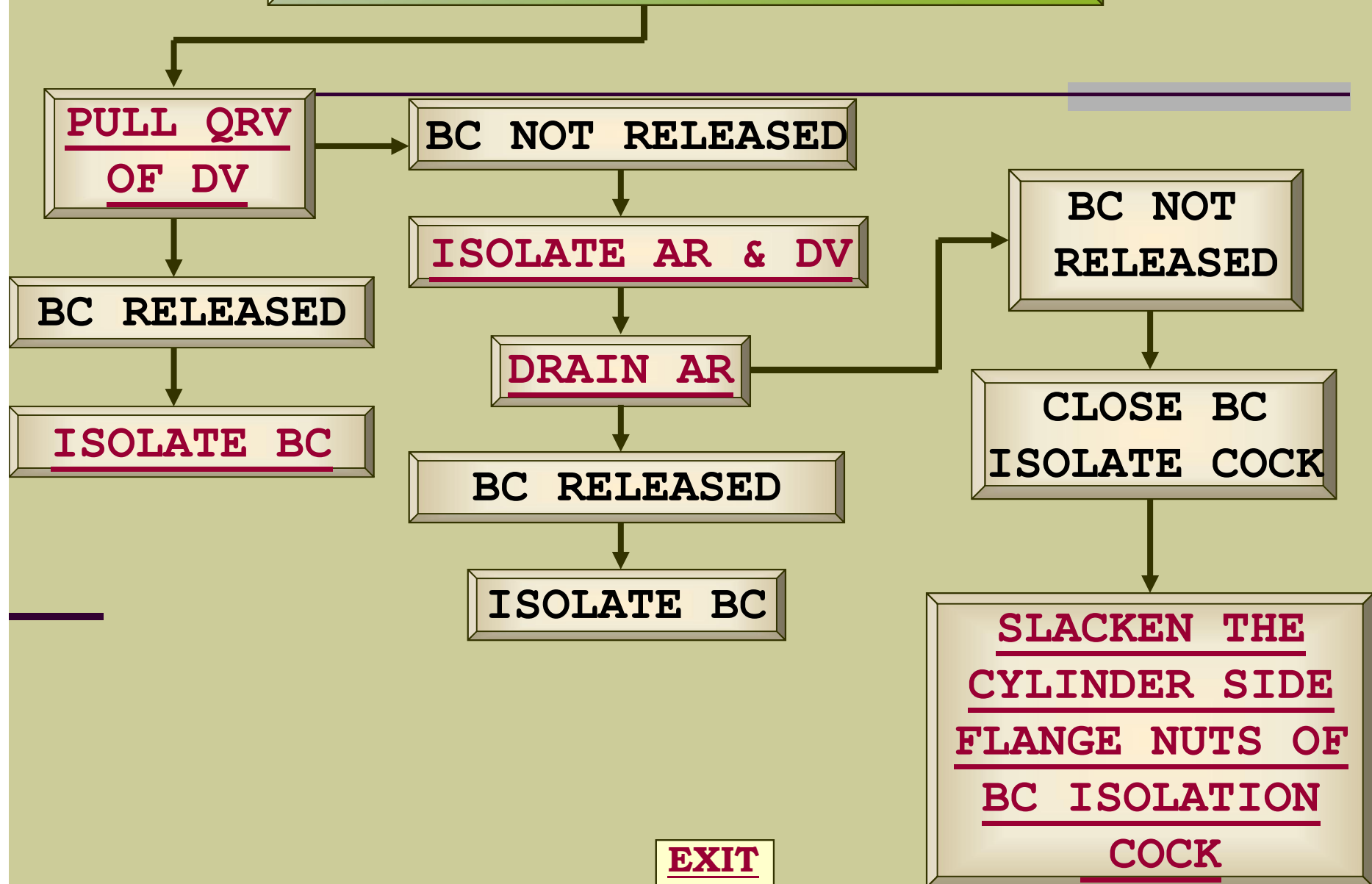
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BC IN APPLIED CONDITION



BRAKE BINDING IN CYLINDER RELEASED CONDITION

BRAKE BINDING IN ONLY
ONE TROLLEY OF VEHICLE

ROTATE SAB

SAB IS ROTATING

RELEASE BRAKE
BINDING
BY ROTATING SAB

ISOLATE BC

SAB IS NOT ROTATING

REMOVE CONTROL ROD PIN
& THEN ROTATE SAB

IF SAB DOES NOT ROTATE
REMOVE PULL ROD PIN

EXIT

ISOLATE BC

EXIT



EXIT



EXIT



EXIT



ISOLATE DV





EXIT



AIR BRAKE

BRAKE BINDING IN BOGIE MOUNTED BRAKE CYLINDER

RELEASING OF BRAKE BINDING IN BMBC

☐ ONLY ONE CYLINDER NOT RELEASING.

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☐ ALL CYLINDER NOT RELEASING.

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ONLY ONE CYLINDER NOT RELEASING

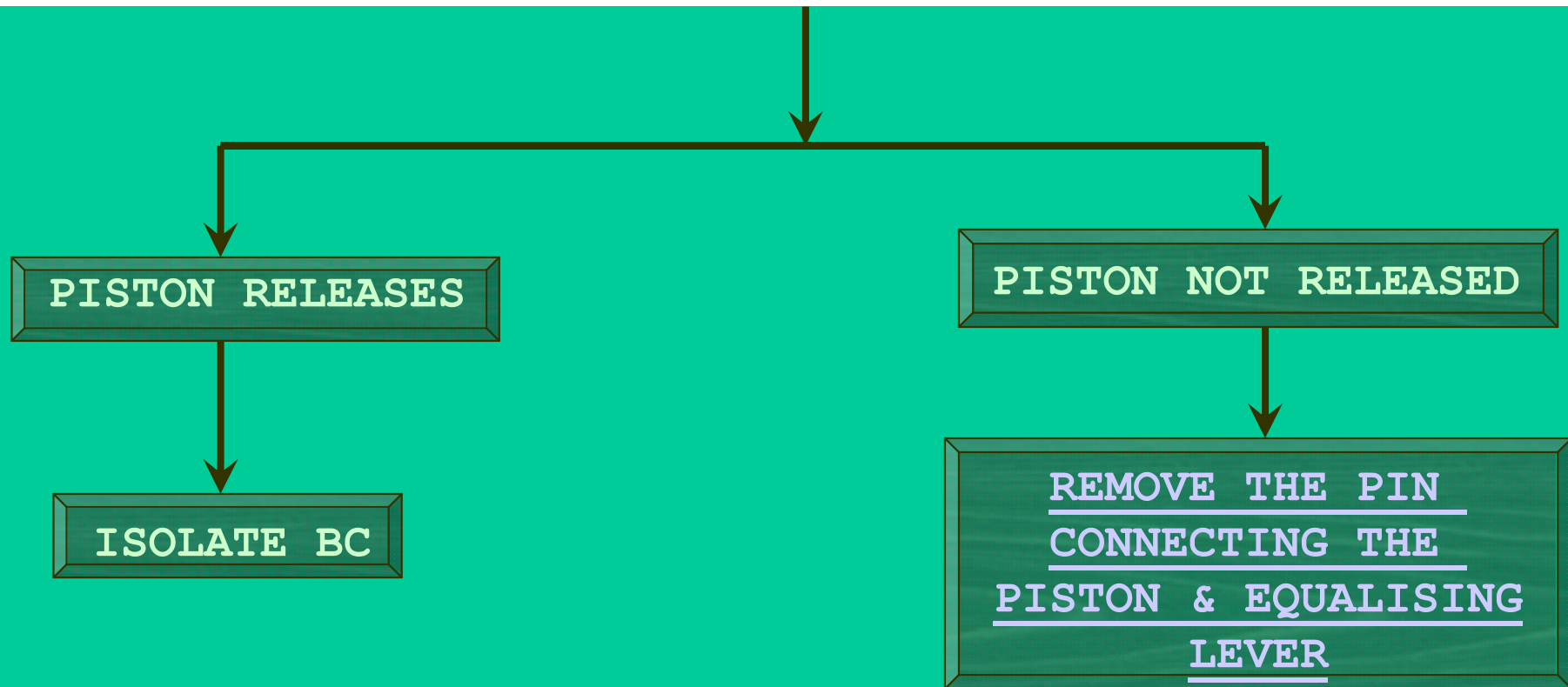
**GENTLY TAP THE PISTON
WITH A HAMMER TILL THE PISTON
COMPLETELY GOES IN**

PISTON RELEASES

ISOLATE BC

PISTON NOT RELEASED

**PULL THE RING OF
LOCKING PIN OF
CYLINDER &
ROTATE SLEEVE
OF PISTON**

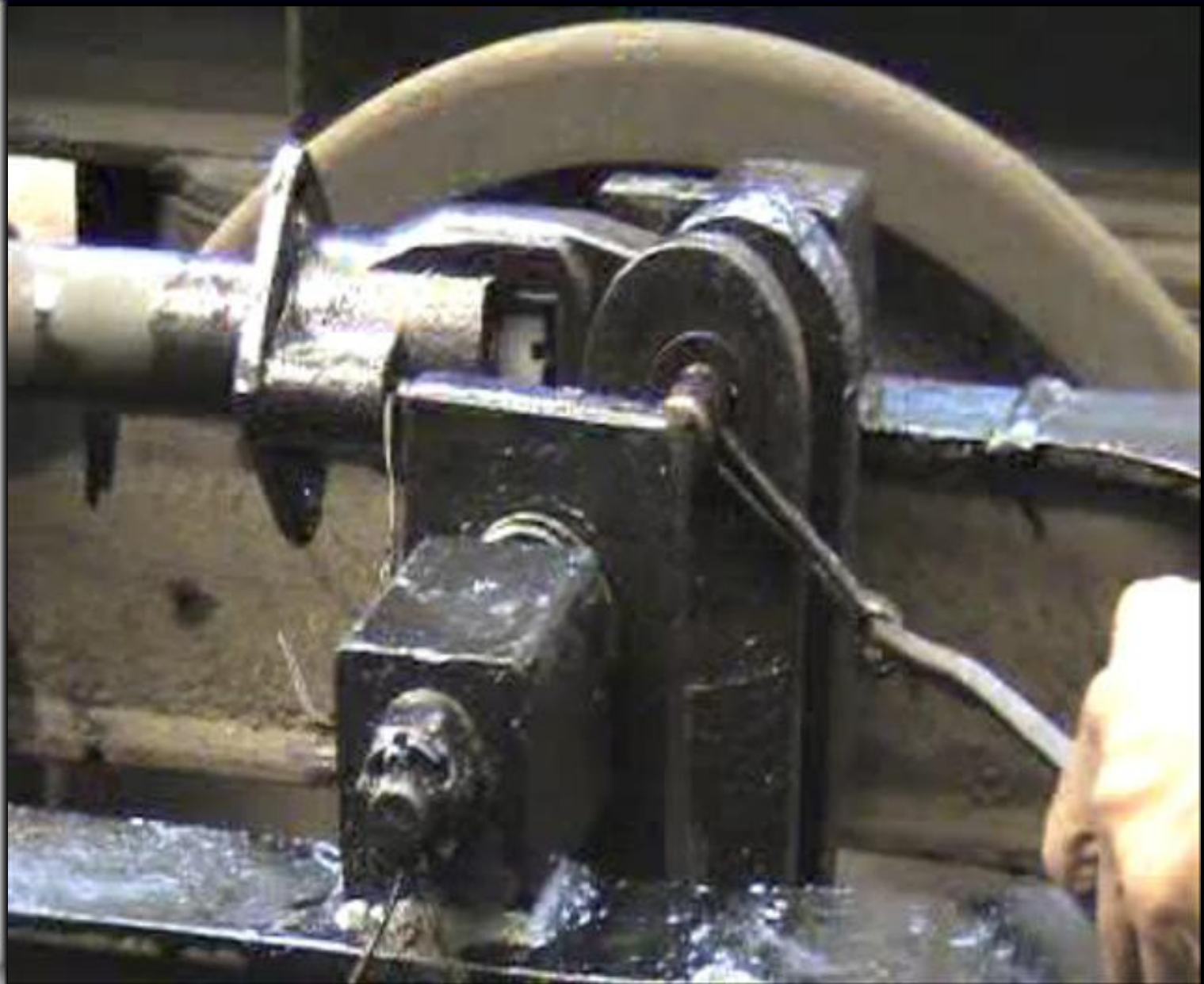


EXIT

EXIT



EXIT



EXIT



ALL CYLINDERS NOT RELEASING

PULL QRV OF DV

PISTON RELEASED

ISOLATE ALL
FOUR CYLINDERS

PISTON DO NOT
RELEASES

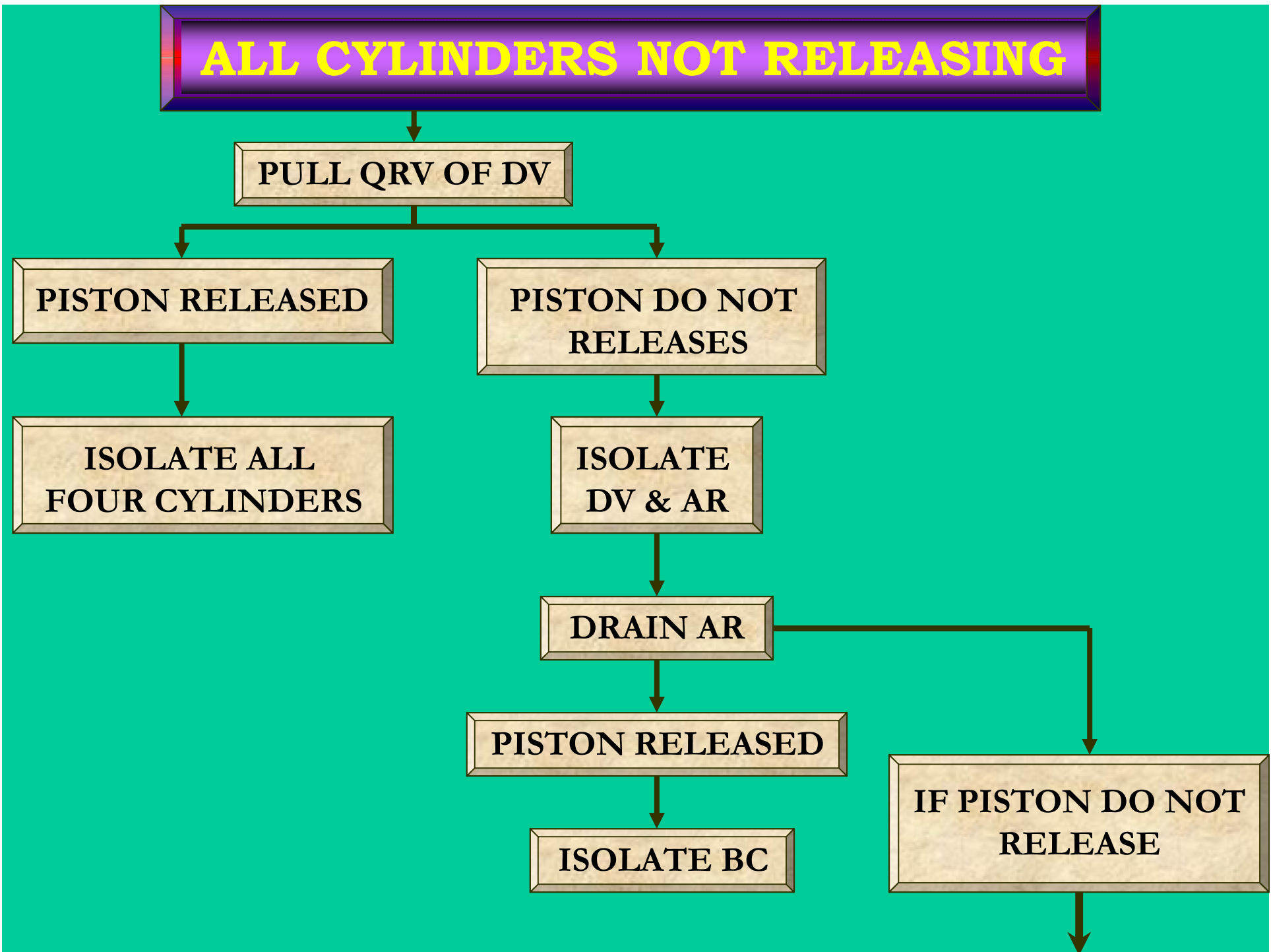
ISOLATE
DV & AR

DRAIN AR

PISTON RELEASED

ISOLATE BC

IF PISTON DO NOT
RELEASE



DISCONNECT
FLEXIBLE HOSE PIPE

```
graph TD; A[ ] --> B[DISCONNECT FLEXIBLE HOSE PIPE]; B --> C[PISTON RELEASED]; B --> D[REMOVE THE PIN CONNECTING THE PISTON & EQUALISING LEVER]; C --> E[ISOLATE BC]; E --> F[EXIT];
```

PISTON RELEASED

ISOLATE BC

REMOVE THE PIN CONNECTING
THE PISTON & EQUALISING
LEVER

EXIT



EXIT

TYPES OF BRAKE BINDING

1. ONE (OR) TWO COACHES HAVING BRAKE BINDING
2. PART FORMATION BRAKE BINIDING
3. FULL FORMATION / PART OF FORMATION BRAKE BINDING



ONE (OR) TWO COACHES HAVING BRAKE BINDING

1) ICC PULLED



RESET PEASD WITH
RESETTING KEY.
ENSURE NO AIR
LEAKAGE IN PEASD.
ISOLATE PEASD.

2) HAND BRAKE
APPLIED



IF SLR / SALOON
RELEASE HAND
BRAKE.

3) HEAVY LEAKAGE IN
FORMATION



ARREST THE LEAKAGE
PARTICULARLY IN BP AT
JOINTS.

ONE (OR) TWO COACHES HAVING BRAKE BINDING

4) CHANGE OF LOCO/
DIRECTION



VARIATION IN PRESSURE
MANUALLY RELEASE THE
FORMATION.
CHARGE BP.

5) LOCO CHARGING
CAPACITY IS LOW



CHECK THE LOCO USING
7.5mm TEST PLATE.

EXIT

PART FORMATION BRAKE BINIDING

1) PRESSURE IN THE
LOCO IS OK BUT IN
SLR BP PRESSURE
IS LOW.



BLOCKAGE IN PIPELINE
CUT OFF ANGLE COCK
CLOSED PARTIALLY OR
FULLY .

ENSURE ALL ANGLE
COCKS IN OPEN
CONDITION. DEFECTIVE
CUT OFF ANGLE COCK
TO BE REPLACED.

PART FORMATION BRAKE BINIDING

3) ~~SAB DEFECT~~ CYLINDER
NOT RELEASED



PULLING IN IS
LESS ADJUSTED
IF NOT RELEASED
PAYIN/ PAYOUT NOT WORKING.
CLOSE ISOLATION COCK
REMOVE PULL ROD PIN.
OF FP
ISOLATE BC
OPEN AR DRAIN OUT COCK
BC RELEASED
ALLOW IN THE SAME
CONIDTION.
IF BC RELEASE SPRING
IS WEAK HAMMER IN THE
PISTON ROD.

EXIT

FULL FORMATION / PART OF FORMATION BRAKE BINDING

**DEFECT MOSTLY ON LOCO OR HEAVY LEAKAGE
IN THAT PORTION**

FULL FORMATION

**PRESSURE LEVEL LOW → ENSURE CORRECT PRESSURE
IN TE & SLR**

- DUE TO BRAKAGE OF THE ANGLE COCK AT THE FIRST WAGON
- BURSTING OF AIR HOSE PIPE & WORKING OUT OF PIPES.
- HEAVY LEAKAGE ON FORMATION. CATTLE RUN OVER. DRAIN OUT COCK BROKEN, BRAKAGE OF DIRT COLLECTOR.

IF FORMATION IS IN GOOD CONDITION

CHECK THE LOCO BY USING 7.5_{MM} TEST PLATE FOR

- FLUCTUATION OF BP PRESSURE
 - POOR RECREATION OF BP PRESSURE
 - A9 VALVE DEFECTIVE
 - BREAKAGE / HEAVY LEAKAGE IN BP PRESSURE
- IN ENGINE

DRIVER DEFECT OR MISHANDLING

AFTER OVER CHARGING OF BP REDUCES TO 5KG / Cm²

INSUFFICIENT TIME GIVEN BY DRIVER

TYPE	SERVICE APPLICATION	EMERGENCY APPLICATION
SINGLE PIPE	2.5 MIN	3 MIN
TWIN PIPE	1 MIN	1.5 MIN

ATTENTION TO BE GIVEN FOR BRAKE BINDING AT ENROUTE

**BEFORE REACHING THE SPOT TO
ATTEND BRAKE BINDING FIND OUT THE
NATURE OF BRAKE BINDING FROM
CONTROL. CARRY THE FOLLOWING
MATERIALS IN A KIT ALONG WITH
WELL TRAINED C & W STAFF.**

MATERIALS

- BP PALMEND HAVING 7.5 MM HOLE WITH GAUGE (TEST PLATE)

- PALMEND WITH GAUGE

- SPANNER SET 18/19 & 24/26 mm

- PIPE WRENCH

- MU WASHER, SEALING WASHER, AIR HOSE PIPES & ANGLE COCKS

- TEFFLON TAPE

- 6 mm ALLEN KEY

- HAMMER, CHISEL etc

**AFTER REACHING THE SPOT FIRST ENQUIRE ABOUT
THE NATURE OF BRAKE BINDING FROM GDR**

a) BRAKE BINDING ON PART FORMATION DUE TO

**CUT OFF ANGLE COCK IS IN CLOSED
CONDITION IN THE MIDDLE OF THE
FORMATION.**

**AFTER ATTENDING ANY LEAKAGES FAILED TO
OPEN CUT OFF ANGLE COCK ON THE
FORMATION.**

BRAKE BINDING ON NEXT TO ENGINE ONE OR TWO COACHES

**MALFUNCTION OF DV DUE TO MOISTURE & DUST
ACCUMULATED IN DC & DV**

BRAKE BINDING ON REAR OF THE FORMATION

**ICC PULLED, DV FAILURE, HAND BRAKE ON &
G.VAN VALVE OPEN**

BRAKE BINDING ON TWO OR THREE COACHES IN DIFFERENT PLACES

DV FAILURE AND ICC PULLED

BRAKE BINDING ON TWO OR THREE COACHES CONTINUOUSLY

ICC PULLED

OTHER CAUSES FOR BRAKE BINDING_

- ≡ NON RELEASE OR IMPROPER RELEASE OF BRAKES AFTER TRACTION CHANGE / ATTACHING SLIP COACHES.**
- ≡ HAND BRAKE PULL ROD BENT.**
- ≡ DEFECTIVE TARE TIE ROD.**
- ≡ WRONG SETTING OF LOAD-EMPTY DEVICE.**

DEFECT ON LOCOMOTIVE

- ≡ FLUCTUATION OF BP PRESSURE.**
- ≡ RECREATION OF BP IS POOR.**
- ≡ A9 VALUE DEFECTIVE.**
- ≡ MOISTURE IN LOCO COMPRESSORS.**
- ≡ EXCESSIVE AIR PRESSURE IN BP.**

NO BRAKE

- ▣ BP PRESSURE IN LAST BV SHOWS MORE THEN 5Kg/Cm² DUE TO FEED PIPE COUPLED TO BP.
- ▣ A9 VALVE DEFECTIVE.
- ▣ SAB DEFECTIVE / MISSING.
- ▣ IOP.
- ▣ DV DEFECTIVE. (CR,AR NOT CHARGED
AR TO BC PORT BLOCKED)
- ▣ BRAKE RIGGING DISCONNECTED.
- ▣ CLOSED CUT OFF ANGLE COCK.

INVESTIGATIONS



PRELIMINARY INVESTIGATION



DETAILED INVESTIGATION



SINGLE WAGON TEST RIG



DIRT COLLECTOR



AR



APPLICATION & RELEASE TIME



PISTON STROKE



SAB DIMENSION



DETAILED INVESTIGATION REPORT



ADVANTAGES



PRELIMINARY INVESTIGATION

- 1. BRAKE BINDING REPORT**
- 2. COLOUR OF BRAKE BLOCK**
- 3. BP LINE /BRANCH LINE**
- 4. AR**
- 5. CUT OFF ANGLE COCK**
- 6. ISOLATING COCK**
- 7. DV ISOLATING COCK**
- 8. WHEEL SKIDDED MARK**
- 9. SAB – CONTROL ROD / PULL ROD**
- 10. EMPTY LOAD BOX**

EXIT

DETAILED INVESTIGATION

1. SINGLE WAGON TEST

2. BC APPLICATION / RELEASE TIME

3. PISTON STROKE

4. SAB 'A' DIMENSION

5. LOAD EMPTY BOX

6. HAND BRAKE

EXIT

THE ABOVE SAID ALL TEST TO BE RECORDED

SINGLE WAGON TEST RIG

1. LEAKAGE TEST

2. INSENSITIVITY TEST

3. SENSITIVITY TEST

4. CR PRESSURE

5. BC PRESSURE

6. DV TYPE, SERIAL NO, SHOP DATE

7. DEFECTIVE TAG

EXIT

DIRT COLLECTOR

1. CLEAN THE DIRT COLLECTOR.

AR

1. CLEAN THE AR

EXIT

CYLINDER APPLICATION & RELEASE TIME

STOCK	APPLICATION TIME (SECONDS)	RELEASE TIME (SECONDS)
COACH	3.5	15 - 20
WAGON	18 - 30	45 - 60

EXIT

PISTON STROKE

STOCK	LOAD	EMPTY
WAGON	130 +/- 10	85 +/- 10
COACH	UNDER FRAME	- 90 +/- 10 mm
	UF(MODIFIED)	- 60 +/- 10 mm
	BMBC	- 25 – 32 mm

EXIT

SAB 'A' DIMENSION

AIR BRAKE WAGON	70 +2 -0
AIR BRAKE COACH	22 + 4 -0

EXIT

ADVANTAGES

- 1. WORKING CONDITION OF COMPONENTS ARE TO BE INVESTIGATED.**
- 2. QUALITY OF COMPONENTS.**
- 3. IMPROVING LIFE OF WAGON & COACH, TURN ROUND.**
- 4. AVOIDING ENROUTE DETACHMENT.**

EXIT

POINTS TO BE CHECKED/ENSURED ON
PIT LINE TO AVOID BRAKE BINDING ENROUTE

1.	ENSURE CORRECT PRESSURE IN TE & SLR	<u>TE</u> BP 5 FP 6	<u>SLR</u> BP 4.8 FP 5.8	LEAKAGE/PIPE CONNECTIONS TO BE ENSURED
2.	LEAKAGE RATE IN PIPE LINE	0.2Kg/Cm ² IN ONE MINUTE, NO LEAKAGE IN BP LINE IS DESIRABLE		ARREST THE LEAKAGES AT PALMEND, PIPE JOINTS ETC AND KEEP WITH IN LIMIT.

3.	DV WORKING	ISOLATING HANDLE PERPENDICULAR TO GROUND (TO AVOID MALFUNCTIONING)	BRING ISOLATING HANDLE IN PERPENDICULAR POSITION AND CLAMP IT WITH PROVISION AVAILABLE.
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4.	BRAKE CYLINDER	PISTON SHOULD COME OUT DURING BRAKE APPLICATION PISTON SHOULD GO IN DURING RELEASE 15-20 SECONDS NOT WORKING LEAKAGE AT PISTON ROD SIDE	PISTON STROKE IS MORE ADJUST SAB A DIMENSION IF THE RELEASE TIME IS MORE REPLACE DV OR CLEAN THE EXHAUST CHOKE REPLACE THE CYLINDER OVER HAUL BC
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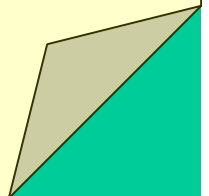
5.	HORIZONTAL LEVER MOVEMENT (LEVEL)	FREE MOVEMENT	IF NO FREE MOVEMENT CHANGE THE HORIZONTAL LEVER (INDICATION PISTON TUBE RUBBING)
		SUPPORT BRACKET WELDING GIVEN UP	WELD THE SUPPORT BRACKET WITH THE BODY.

8.	BRAKE SHOE MOUNTING OVER WHEEL (LOW DIA WHEEL IS BELOW 830mm)	MODIFIED BRAKE HANGER & MODIFIED BRAKE SHOE. (HANGER LENGTH INCREASED FROM 205 to 235mm)	PROVIDE THE MODIFIED BRAKE HANGER & MODIFIED BRAKE SHOES
9.	MOVING PARTS IN BOGIE/ BRAKE RIGGING.	FREE MOVEMENT	OILING TO BE DONE. REPLACE WORN OUT PINS & BUSHES

10.	CLEANING/ DRAINING OUT PRESSURE FROM PARTS	AR	EVERY TRIP BY OPENING THE DRAIN COCK.
		DC/CR	EVERY MONTH CLEAN DC AND REMOVE DIRT. DRAIN CR BY OPENING THE DRAIN PLUG
		PEAV/PEASD	CLEAN EVERY ALTERNATE MONTH

STEPS TO BE TAKEN TO AVOID BRAKE BINDING IN AIR BRAKED TRAIN

- 1. INTRODUCTION OF ROLLING OUT EXAMINATION IN ALL STATION TO DETECT BRAKE BINDING IN THE COACHES .**
- 2. IMPARTING TRAINING TO C&W AND OPERATING STAFF TO HAVE ADEQUATE KNOWLEDGE OF TROUBLE SHOOTING .**

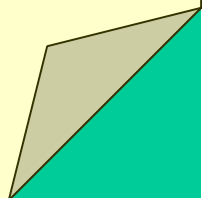


3. AUGUMENTATION OF TESTING DURING PRIMARY MAINTENANCE.

THE APPLICATION AND RELEASE TIME AS WELL AS LEAKAGE FROM DV GIVES SUFFICIENT ADVANCE NOTICE OF ITS MALFUNCTIONING ON LINE.

4. PREVENTING C&W STAFF TO CHECK THE ARC WITH DV BODY WHILE CARRYING OUT WELDING NEAR COACH.

5. LOCKING OF DV ISOLATING HANDLE.



EXIT





EXIT



THANK U