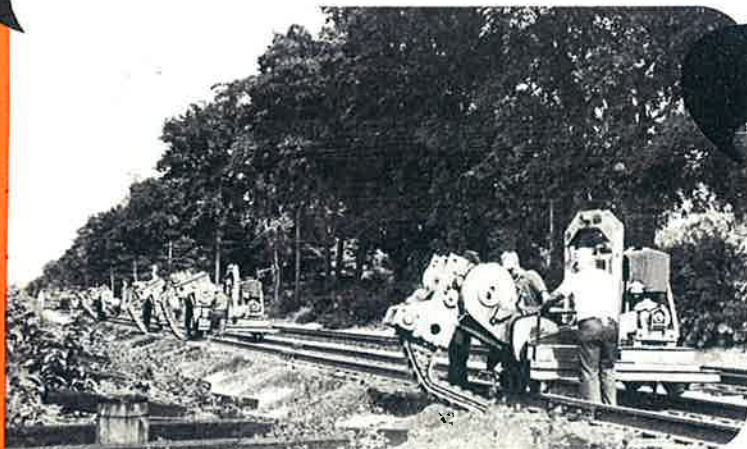


# USE NORDBERG MACHINES

to handle your  
**BALLAST RECONDITIONING PROBLEMS**



Four **CRIBEX** removing fouled gravel

## CRIBEX

- ★ For removing fouled ballast from between ties or switch timbers.
- ★ For cribbing in connection with complete ballast cleaning using Nordberg **BALLASTEX** and **SCREENEX**.
- ★ For lowering track.



**BALLASTEX** wasting muddy gravel

## BALLASTEX

- ★ For removing intertrack ballast in a wasting or track lowering operation.
- ★ For excavating intertrack or shoulder ballast and feeding **SCREENEX** in a cleaning operation.



**BALLASTEX-SCREENEX** cleaning stone ballast

## SCREENEX

- ★ For screen cleaning intertrack or shoulder ballast where partial cleaning is desired.
- ★ For screen cleaning material removed from the cribs plus intertrack and shoulder ballast where a complete cleaning is necessary.

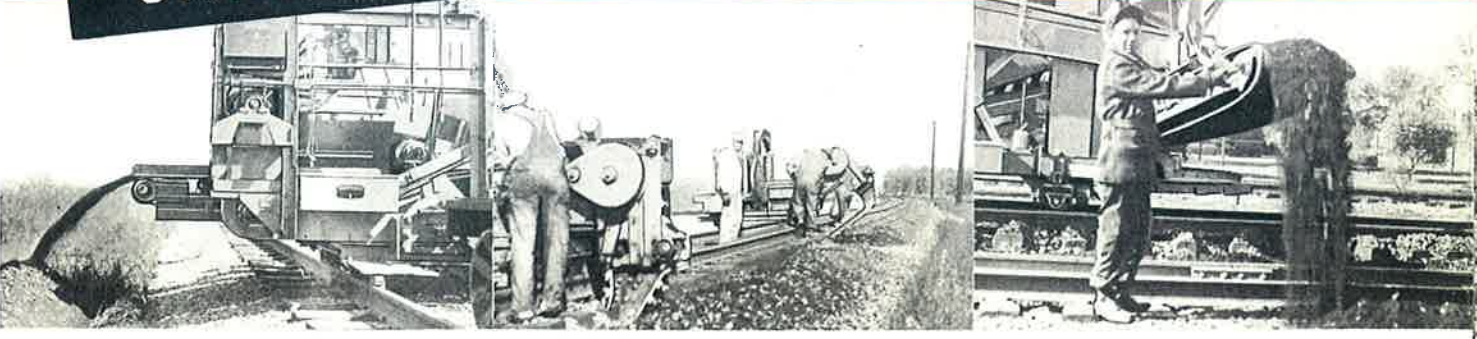
**NORDBERG MFG. CO., MILWAUKEE 7, WISCONSIN**

Bulletin 174



On the Job with

# CRIBEX • BALLASTEX • SCREENEX



Close  
adjust

## FLEXIBILITY FEATURES

### ★ SKELETONIZING SINGLE TRACK

CRIBEX used to excavate material between ties and place it on shoulders. This, with original material is then levelled by Spreader or Bulldozer.

### ★ SKELETONIZING MULTIPLE TRACK

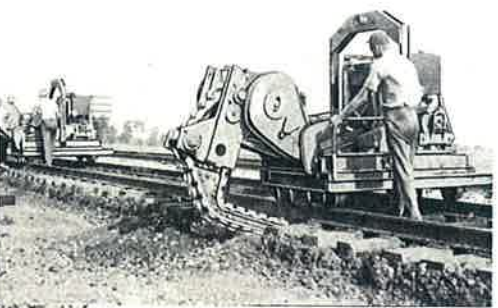
CRIBEX used as above with Spreader or Bulldozer. BALLASTEX excavates and wastes material originally in intertrack as well as cribbed material from half cribs adjacent to intertrack.

### ★ FOR COMPLETE CLEANING IN SINGLE OR MULTIPLE TRACK

The CRIBEX-BALLASTEX-SCREENEX team excavates and cleans all ballast, returning cleaned ballast to track and wasting dirt. The same combination is employed where only partial crib cleaning is desired; for example, where muddy track is confined to half cribs around joints.

### ★ FOR CLEANING INTERTRACK AND SHOULDERS ONLY

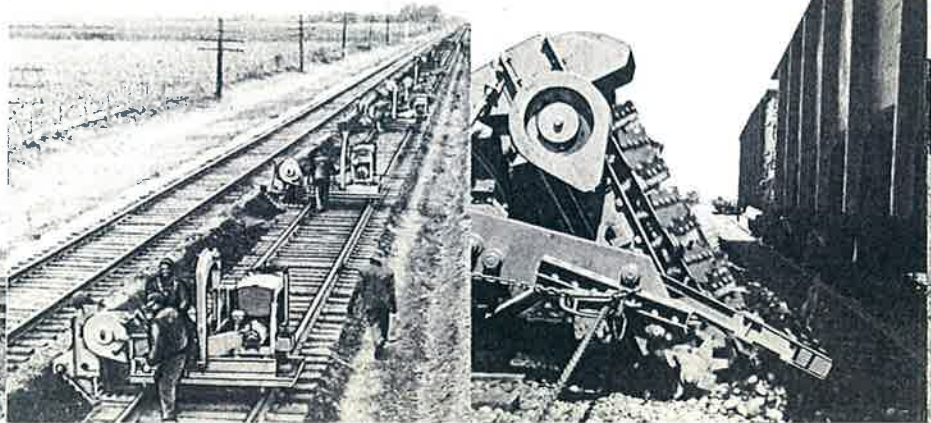
Where cribbing is not considered essential, but the shoulders and intertrack are to be cleaned, the BALLASTEX-SCREENEX combination is used.



Cribe  
Turn



Hyd





# The CRIBEX



Boom raised ready to start digging.



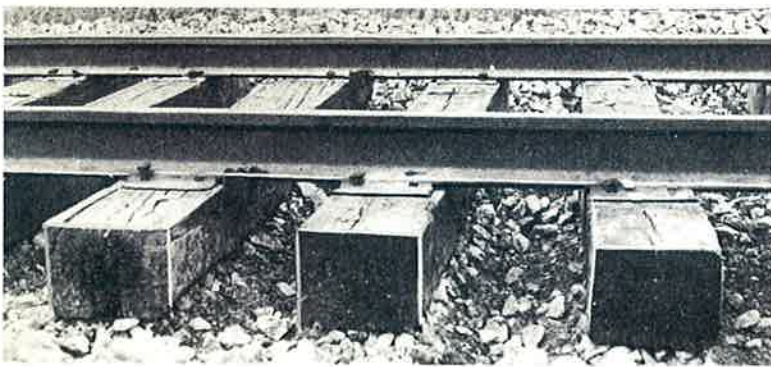
Boom under rail and entering crib.



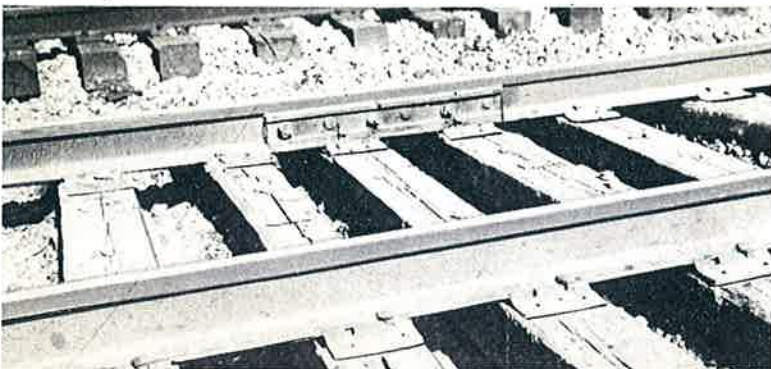
Digging completed to tie center.



Crib cleaned to center of tie.



All ballast removed from crib.



Cribs of irregular width are no problem.

The **CRIBEX** removes the material contained in the cribs and deposits it beyond the ends of the ties. It leaves a smooth and uniformly graded tie floor, completely emptying the crib without injury to ties or rail. CRIBEX can slope the floor of the crib, pitching from the center of the track downward toward the tie ends. It will remove 80% of the crib ballast in a turn out.

The **CRIBEX** is a compact and rugged machine weighing 5975 pounds, manned by an operator and a helper. An endless chain containing digging flights moves around a unique boom which enters the ballast at the tie ends, moves downward and under the rail — then moves inside to slightly beyond the center of the track. CRIBEX are normally used in pairs; the first removing the half crib under one rail and the following machine removing the rest of the crib. Production varies from 80 to 130 half cribs per working hour according to the type of ballast being excavated. A 30 horsepower gasoline engine drives the digging mechanism through a fluid coupling and slip clutch. The machine is quickly removed from the track by means of a special turntable and platform as shown on Page 6.

The **CRIBEX** will excavate as deep as 13 inches below the base of the rail, making it possible to lower track at tremendous savings. The CRIBEX and BALLASTEX provide the Engineer with a revolutionary new, economical method for lowering profile "humps" and for lowering track to improve overhead clearance and at the approaches to bridges or highways. With the use of Nordberg machines, these operations can be done under traffic.

Over 2,500,000 cribs excavated of every kind and type of ballast proves the performance of the **CRIBEX**



# The BALLASTEX



Wasting intertrack ballast.



Completed trench.



Clearing or moving position.

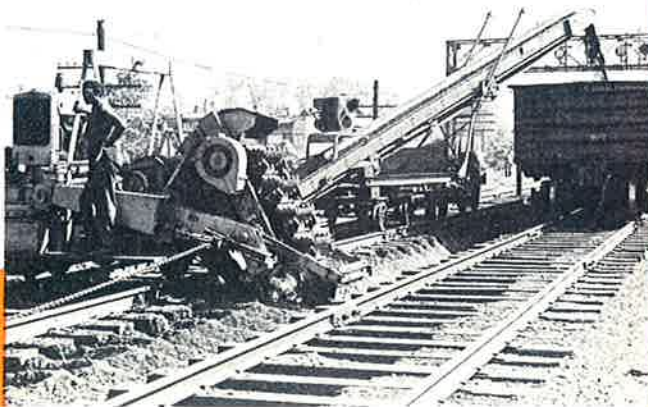
The **BALLASTEX** excavates the ballast in the area between the tracks or in the shoulder and disposes of it by either wasting it to the side or feeding it to the SCREENEX for cleaning. It digs a uniformly graded trench 42 inches in width, of any desired depth to a maximum of 30 inches below the top of rail.

The **BALLASTEX** is a track mounted machine weighing 14,600 pounds manned by an operator and a helper. An endless chain of digging buckets moves around a boom which is mounted on a hydraulically actuated transverse carriage in such a manner that the boom can be raised, lowered, moved in toward the track or away from the track as desired. A 50 H.P., 4 cylinder, water cooled, gasoline engine drives the excavating mechanism through a fluid coupling which, with a special slip clutch, prevents damage to the machine should a buried obstruction be encountered while digging. The BALLASTEX propels itself while excavating at a rate of between 800 and 1600 feet per hour depending upon the depth of trench and quantity of ballast handled. Forward motion is accomplished by a hydraulically ac-

tuated winch which pulls in on a chain, one end of which is fastened to a tie with a special clamp. The pulling chain is in two lengths joined by a snap connection thus permitting uninterrupted forward motion. A scari-fying device, attached to the boom, breaks the mud away from the tie ends. Unequal tie length presents no problem; the operator simply moves the boom out and around long ties without changing the trench grade.

The **BALLASTEX** waste conveyor can be moved in or out as desired, throwing the wasted material to a maximum of 11 feet from the center line of the track. When the BALLASTEX is used to feed the SCREENEX in a cleaning operation, this waste conveyor is quickly removed and replaced by the SCREENEX feed conveyor. Through the use of auxiliary conveyors, the BALLASTEX can be employed to load excavated ballast into cars on an adjacent track. A hydraulic turntable, furnished with each machine provides a quick method for turning to work the opposite side of the track. A turntable is also used for removing the BALLASTEX from the track and onto a set-off platform. This is shown on page 6.

The BALLASTEX and auxiliary conveyor loading into a gondola.

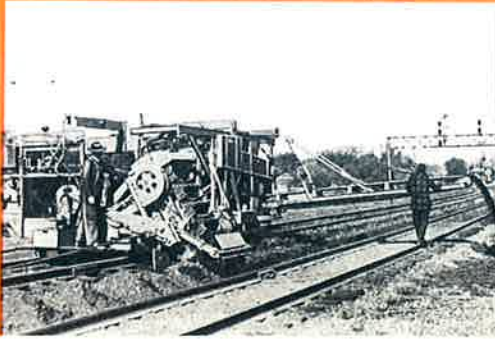


Rear view of Digging Boom. Note the cleaned ballast being returned.

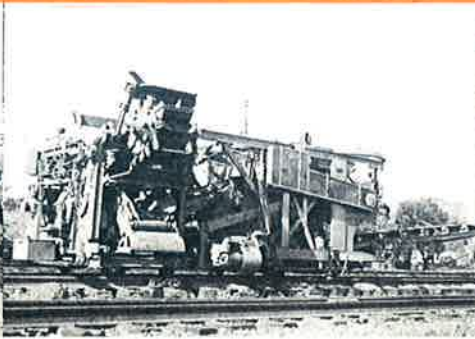




# The **SCREENEX**



**BALLASTEX-SCREENEX** cleaning intertrack and cribbed material.



Clearing traffic approaching on adjacent track.

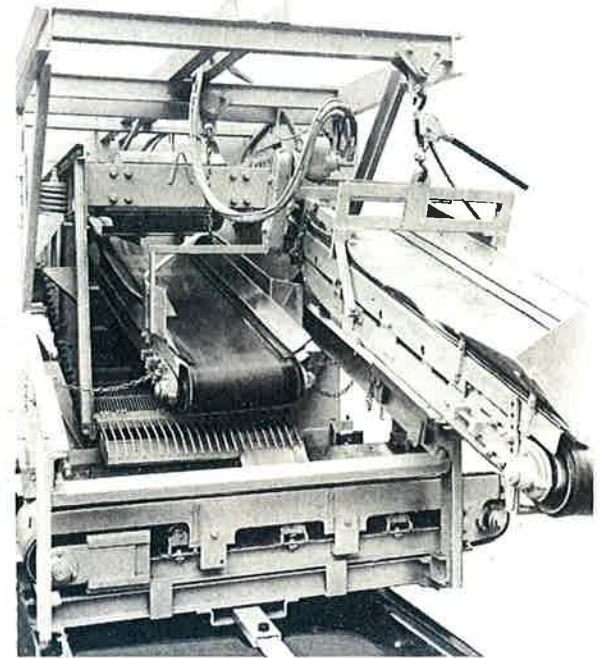


Intertrack and half-cribs cleaned and returned to track.

The **SCREENEX** takes fouled ballast that has been excavated and fed to it by the **BALLASTEX**, passes this material over a screen and returns the cleaned ballast to the track, intertrack, or shoulder in any desired proportions and wastes the screenings to the side beyond the shoulder. In operation, the **SCREENEX** is close coupled to the **BALLASTEX** and is towed by the **BALLASTEX**.

The **SCREENEX** weighs 16,000 pounds and is manned by an operator and a helper. Conveyors carry the material excavated by the **BALLASTEX** onto a screen. Cleaned stone runs off the screen onto a transverse conveyor which has complete flexibility of discharge control permitting return of clean ballast as desired: (1) all to empty cribs, (2) all to intertrack or shoulder, or (3) divided in any proportions between cribs and intertrack or shoulder. Waste dirt is carried to a 20 foot, 270° swing conveyor which carries it to either side of the track. Waste dirt can be thrown clear of the shoulder of an adjacent track at 16 foot centers. The waste conveyor folds against and is locked to either side of the machine for traveling and is equipped with a hand winch for raising or lowering the discharge end. Dirt can be discharged anywhere within the 270° swing, making it possible to move around structures such as signals, telephone booths, etc., located close to the track. All conveyors are driven by hydraulic motors. Cleaned ballast is returned only a few feet behind the excavating mechanism of the **BALLASTEX** — no open trench is left.

The **Rod Deck** Screen employed in the **SCREENEX**, is used throughout the world by the minerals industry where wet and sticky ores must be screened. Developed by the Nordberg Crusher Division, it fills a need for a low screening cost, big capacity, minimum maintenance screen for handling such material. The patented screening



Looking into **SCREENEX**. Note **ROD DECK SCREEN**.

surface consists of four banks of spring steel rods which are sprung into place and held into position by molded rubber spacers. The positions of these rods can be changed easily and quickly to alter the screen openings, thus permitting control of the minimum size of reclaimed ballast. Individual rods can be replaced without disturbing the rest of the deck: — no waste of any part of the screening surface because of uneven wear. The entire screen is vibrated by an eccentric weight which is easily adjusted to change vibration intensity. An exclusive feature of the **SCREENEX** assures maximum screening efficiency on super-elevated curves. The superstructure of the machine is maintained in a horizontal position by hydraulic rams. These rams are also used to raise the machine so that it can be quickly removed from the track to a set-off by means of transverse wheels.

**Violent agitation in the ROD DECK SCREEN effectively cleans ballast even when wet**



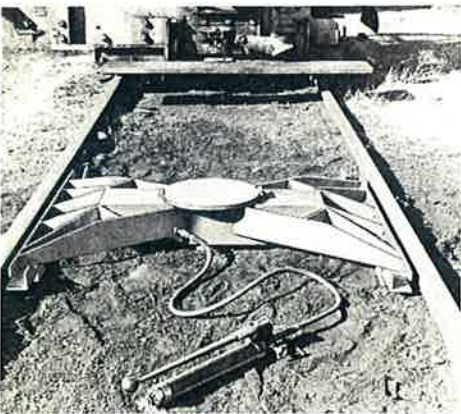
# Quickly Removed from Track



Closeup of Cribex setoff. Note adjustment of back for variable bank contour.



Cribex setoff in single track. Turntable placed in track.



Hydraulic turntable in place in track.

## Removing **CRIBEX**

A specially designed Platform and Turntable is available for use in quickly removing the CRIBEX from the track. With these devices, four CRIBEX can be cleared in five minutes. The Platform is a four piece unit, for easy handling and moving, with adjustable back and front to fit any bank contour. By means of a Turntable, which is mounted on rollers, the flanges of the wheels are raised clear of the track rail, the machine turned 90° and pushed across the Turntable Ramp and onto the Platform.



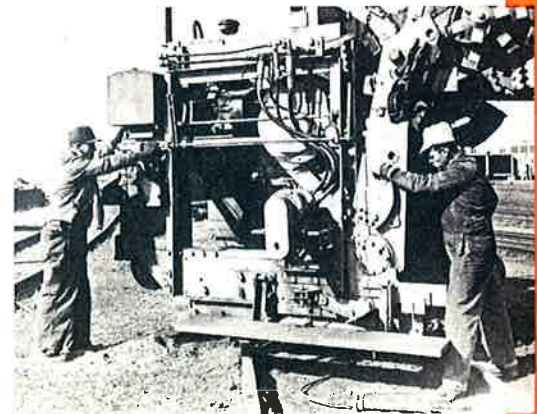
Cribex has been moved from platform to turntable and is being turned 90°.



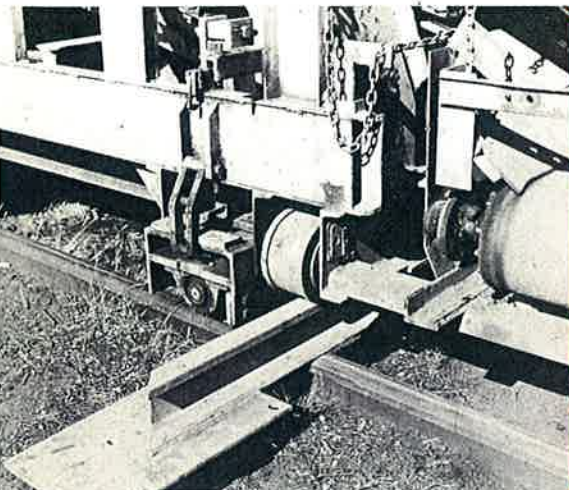
Cribex off track clear of passing train.

## Removing **BALLASTEX**

A hydraulic Turntable, furnished with each BALLASTEX and actuated by a hand pump, is used to raise the BALLASTEX so that its wheel flanges clear the track rails. Four men then turn the machine 90° and place run-off rails under the machine's running wheels. The BALLASTEX is then lowered and pushed across the run-off rails and onto a previously prepared platform.



Turning Ballastex to work on opposite side or to remove from track.



Run off rails under SCREENEX.

## Removing **SCREENEX**

Adjacent to each of the four running wheels of the SCREENEX is a hydraulic ram. These rams are actuated by a centrally located hand pump. The entire machine is raised by these rams to clear the running wheel flanges. Run-off rails are then placed in position under transverse set-off wheels, the machine lowered and pushed off the track to a previously prepared platform.

Look to  
**NORDBERG**