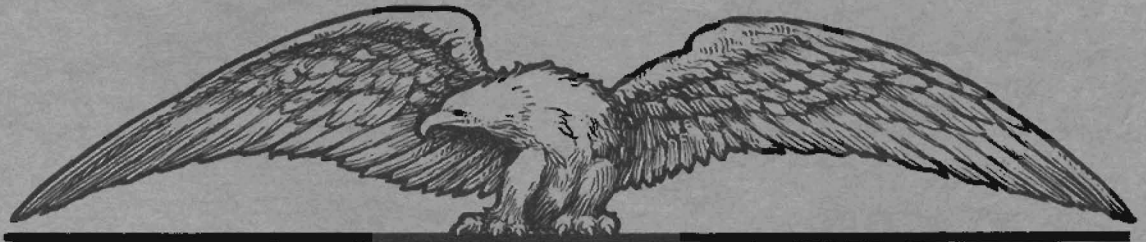


Specifications
of



JORDAN
SPREADER-DITCHER

TYPE A

With

HIGH SNOW PLOW

O. F. JORDAN COMPANY
EAST CHICAGO, INDIANA

GENERAL SPECIFICATIONS

of

JORDAN SPREADER - DITCHER

TYPE A

* * * * *

O. F. JORDAN COMPANY
East Chicago, Indiana

April 1, 1929
Sept. 15, 1937

S P E C I F I C A T I O N

GENERAL

Car to be built in a substantial manner, consistent with good car practice and in accordance with the following specifications.

TYPE OF CAR

The car body is essentially of a flat car type. It is arrow-shaped to accommodate the front plow and other working attachments.

GENERAL DIMENSIONS

Length over striking castings	50' 0"
Width over all	10' 0"
Length, truck centers	37' 0"
Width over sub side sills	8' 10"
Width over side sills	3' 6"
(Top of center sills	3' 8 $\frac{1}{2}$ "
Height (Center line of coupler	2' 10 $\frac{1}{2}$ "
(Bearing surface of center plate	2' 2- $\frac{3}{4}$ "
(Over all	14' 8 $\frac{1}{2}$ "
Truck wheel base - front	5' 0"
Truck wheel base - rear	5' 6"
Truck Capacity - front	140,000 lbs.
Truck Capacity - rear	100,000 lbs.

STANDARD GAUGE

All heights measured from top of rail.

OPERATION

Car to have operating stand arranged so that all valves controlling the various cylinders on the car will be in convenient reach of the operator when working the car. Valve stand to have brake valve within reach of the operator for applying brakes in an emergency. Car to be equipped with air gauge indicating the pressure in the air reservoir, and a signalling whistle. Air line

connection to the reservoir will be made through a special line provided for that purpose.

The front plow, ditching wings, diagonal braces supporting outer end of ditching wings, bank sloper wings, main wing opening and closing mechanism, diagonal brace for operating wings in carrying form and main wing horizontal telescopic braces with gear rack locking device, all pneumatically operated. All working attachments to properly operate between 60 to 100 pounds of compressed air depending upon the size and construction of the main wings.

CAR BODY

UNDERFRAME

To be arrow-shaped, front plow have 90° angle. Body recessed to accommodate main wings.

CENTER SILLS

Center sills to consist of two 30" x 3/8" web plates, six 3-1/2" x 3-1/2" x 1/2" angles and one 22" x 1/2" cover plate, spaced 12-7/8", having a sectional area of 53 square inches at the center of the car and 41 square inches at the ends of the car. The ratio of unit stress to end load (maximum) not to exceed .05.

SIDE SILLS

Side sills to consist of 2 - 15" @ 45# channels.

END SILLS

Front end sill to be 2 - 6" x 4" x 1/2" angles and 3/8" plates. Rear end sill to be 15" @ 35# channel.

BODY BOLSTERS AND CROSS BEARERS

Body bolsters of built up construction to be composed of steel castings and 18" x 1/2" top and bottom cover plates securely riveted to side and center sills. The cross bearers to consist of cast steel spacers and 9" x 3/8" tie plates.

STATIONARY POSTS

Each stationary post to be composed of 1 - 10" pipe 7/8" thick, 2 - 8" x 6" x 3/4" angles and two brace members 4" @ 18.4 lbs. Z-bars, the braces to be riveted to vertical members and to the side sills of the car. The vertical members riveted to side sills of car extending 3' 3" below the top of side sills and riveted to 3' x 4' x 5/8" plate braced under the car and securely riveted to post connecting members.

The stationary posts to be tied together across the top of and bottom of car by 2 - 15" @ 45 lbs. channels. Posts to be braced transversely with portal type bracing.

MAIN WING
AND BANK
SLOPER

To be composed of two units: viz., a ditcher or template wing and a bank sloper or carry wing. Both units to be connected by means of a universal type hinge to permit the bank sloper to swing horizontally, forward, and with proper connections for connecting to the front diagonal brace, as well as upward to take care of various slopes of banks. The ditcher wing to be made of 1/2" plate riveted over a cast steel frame. All rivets on outside of wing to have countersunk heads. The bottom edge of ditcher wing is equipped with a removable steel cutting shoe and a movable ditch section. The latter to fit into and slide in guides of cast steel frame by means of an air motor, silent chain transmission and a screw drive. The ditch section to move, up or down quickly, or raised entirely, thus transforming a ditcher wing into a straight spreader wing.

An adjustable ballast section to be located at the front end of the ditcher wing. Same to be pivotally connected to main wing at a point to take care of various ballast slopes, as well as lowering it to level with the berm section for straight spreader work.

Each ditcher wing to be equipped with a 15" diameter air cylinder for raising and lowering the outer end of the bank sloper.

The bank sloper to be made of 1/2" plate securely riveted over a cast steel frame. Rivets on outside of wing to have countersunk heads.

Bottom edge of bank sloper to be fitted with removable cutting shoes made of manganese steel.

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(Ditcher)
April 1, 1929

MAIN WING DIAGONAL BRACE

To be used in raising and lowering the outer end of the wing. The brace to consist of 1 1/2" diameter air cylinder and two members, one telescoping inside the other and arranged to be locked to each other by means of pneumatic lock.

MAIN WING HORIZONTAL BRACING

Wing to be braced horizontally with three telescopic braces. Each composed of 5" extra heavy pipe with gear rack attached, telescoping in 8" standard pipe, having a lock housing and a 6" cylinder to operate the lock. Pipes are connected to car and wing by universal joints and wing can be set at any desired angle of spread and locked in that position.

MAIN WING SUPPORT

The main wing to be supported by means of one cast steel hinge bolted to a sliding post.

MAIN WING HINGE

Hinge member on sliding post and hinge member on main wing are connected by a steel fulcrum pin.

MAIN WING OPERATING CYLINDERS

The main wings to be raised and lowered by means of 2 1/2" dia. air cylinders set on the deck of the car between the stationary posts and bolted to them. 2" pins will be used as a stop to hold the wing at any desired height.

For opening and closing these wings, two 1 1/2" dia. air cylinders are universally connected to pedestals mounted behind the stationary posts and directly connected to the main wings by universal joints.

SLIDING POSTS

Sliding posts to be all steel construction made of 1 1/2" extra heavy pipe sliding over 10" round stationary column. Each sliding post to be guided in its movement on the stationary post by friction reducing bronze bushings.

Sept. 15, 1937

FRONT PLOW

Car to be equipped with front plow on an angle of 90° and extending 4' 8" from center line of track, same to be so arranged as to permit vertical operation by means of an air cylinder. The plow is to consist of a plow frame and two hinged wings. Each wing to be arranged to swing forward and in direct line with the opposite one (closed) to permit the spreading of material in inter-rail space out to either side of the track. Plow plates to be 1/2" reinforced with substantial steel members. The outer end of plow to be built to height level with deck of car and the apex to reach about 1" above deck of car.

FRONT PLOW OPERATING CYLINDER

A 17 $\frac{1}{2}$ " diameter air cylinder securely supported on structural steel pedestal to be the means of raising and lowering the front plow and plow side wings that are attached to end of plow. The cylinder to have piston travel sufficient to raise plow 8" above top of rail and lower to 6" below top of rail, the plow cylinder mechanism to be equipped with a small cylinder for operating lock pin device.

SIDE WINGS

Car to be equipped with side wings, extending from the outer end of front plow back to main wings. The front end of each side wing to be connected to front plow by means of a hinge to permit them to swing outwardly to give access to the trucks. The rear end of the side wings to be provided with a small auxiliary wing, one on each side of the car, hinged to side wings to permit them to swing open in harmony with main spreader wings. The side extension wings to extend backward lapping the main wings sufficiently to keep the ties clear of material spread by its continuous flow from plow to main wings.

CAB

Car to have operator's cab located immediately behind the stationary posts. Steel frame construction having steel plate exterior, lined with rigid insulation and steel sheeting interior. Double wood floor, front and rear doors, two sliding windows on each side and their frames are of wood construction. Glazing to be clear wire glass. Smoke jacket applied in roof.

Sept. 15, 1937

BRAKE MATERIALS

All levers and connections to meet A.R.A. requirements.

TOOL BOX

Car to be equipped with a tool box with a hinged cover to be mounted on deck of car and built of 2" yellow pine securely spiked together.

CAR FLOORING

Car floor to be 2" rough side, yellow pine shiplap securely nailed to 4" x 4" stringers, and with 7/8" x 4" trim along sides of floor. Stringers to be bolted to car structure.

RESERVOIR

Car to be equipped with one 40" diameter by 9' 2" horizontal air reservoir mounted on the underframe below the car deck. Capacity approximately 72 cubic feet, constructed for 125 pounds working pressure. Heads 7/16" thick, shell 11/32" thick; designed in accordance with A.S.M.E. code, Paragraph U-70 with 1/32" additional thickness for corrosion; all welded construction, heads butt welded to shell, longitudinal seam butt welded; equipped with one 11" x 15" manhead in shell, two 1-1/4" and one 3/4" pipe flanges, two 3/4" x 9" plate supports and one exterior coat of paint by manufacturer.

Air reservoir inspected and tested to 250 pounds hydrostatic pressure, certificate of inspection and approval furnished.

Air reservoir connections to be equipped with safety valve, horizontal cutout and check valve at inlet, blow off pipe and valve at bottom and an extra service connection at outlet, plugged off.

TRUCKS

GAUGE

4 feet, 8-1/2 inches.

WHEEL BASE

5 feet, 6 inches for rear truck.

5 feet for front truck.

125# Tank
February 1, 1940

BRAKE BEAMS

A.R.A. No. 15 Brake Beam with rear truck and A.R.A. No. 3 with front truck, inside hung to truck and provided with safety supports and bottom rod guard.

SIDE FRAMES

Cast steel, integral journal boxes, 100,000 lbs. capacity - rear truck, and 140,000 lbs. capacity - front truck.

TRUCK BOLSTERS

Cast steel, equipped with friction type side bearings.

SPRING PLANKS

13" by 32# channel.

WHEELS

A.R.A. standard cast iron, 33" wheels with chilled tread.

AXLES

A.R.A. standard 5-1/2" x 10" journals on rear truck and 6" x 11" journals on front truck, forged smooth between dust guards, meeting specifications of American Society for testing materials or equivalent.

MISCELLANEOUS

DRAFT GEAR

Car to be equipped with Miner A-2-XB draft gear.

COUPLERS

A.A.R. type "E" 6-1/4" x 8" shank, top operating couplers connected to cast steel draft yoke by 1-1/2" x 6" key.

BUFFER

All cast steel integral with front draft gear lugs and securely riveted to center sills.

AIR BRAKES

Westinghouse "AB" 10" freight car brake equipment complete. 1-1/4" extra heavy train line pipe, all other pipe standard weight.

HAND BRAKE

Hand brake rigging at one end of car to operate with air brake in accordance with A.R.A. requirements and to have the braking power equivalent to that of the air brake.

BRAKE SHOES

A.A.R. design.

SAFETY APPLIANCES

To conform with A.R.A. standards or as close as the special construction of the car permits.

PIPING

All pipe to be a good grade of black pipe tested to 100# air pressure.

HAND RAIL

Both sides of car back of the cab, rear end and stairways leading into cab to be provided with a hand railing of sufficient height to insure proper safety for the workmen.

PAINTING

Car to be painted with two coats of standard mixed paint. First coat to be lead and second or finish coat to be good grade of battle-ship grey paint.

NUMBERING AND LETTERING

To be in white lead according to A.R.A. standards and with the instructions of the purchaser.

MATERIALS

The physical and chemical properties of all material used in the car construction to be in accordance with the latest standard specifications of the American Society of Testing Materials.

INSPECTION

Final inspection and acceptance to be at the works of
the O. F. Jordan Company at East Chicago, Indiana.

O. F. JORDAN COMPANY
East Chicago, Indiana

April 1, 1929

DESCRIPTION
and
SPECIFICATIONS

of

HIGH SNOW PLOW

for

JORDAN TYPE A SPREADER

O. F. Jordan Company
East Chicago, Indiana

October 1, 1929

THE JORDAN
HIGH SNOW PLOW

To meet the requirements of northern railroads for spreading snow in drifts, the O. F. Jordan Company has added to its Type A Spreader-Ditcher an extension front plow, making total height of this additional equipment about 9 feet above the rail at the center of the car, and about 10 feet on the sides. This extension consists of two front plates bent outwards at the top and two long side-plates, all substantially reinforced on the back and braced to the car proper. To handle the increased weight of the snow plow, a larger air cylinder is being used for raising and lowering it.

Not only does this construction permit spreading of snow in heavy drifts but provides ample protection to the machine from being loaded up with snow when spreading is being done at a high speed.

Sept. 1, 1939

FRONT FLOW

Car to be equipped with front plow on an angle of 90° and extending to 4' 8" from center line of track, same to be so arranged as to permit vertical operation by means of an air cylinder. The plow is to consist of a plow frame and two hinged wings. Each wing to be arranged to swing forward and in direct line with the opposite one (closed) to permit the spreading of material in inter-rail space out to either side of the track. Plow plates to be 1/2" reinforced with substantial steel members. The outer end of plow to be built to height level with deck of car and the apex to reach about 1' above deck of car. Plow to be equipped with following attachments for spreading snow:

- (a) Flow front extension plates.
- (b) Flow side extension plates.
- (c) Braces for plow extension.

The plow front extension to consist of 3/8" plates bent outward at the top and reinforced on back with 2-1/2" x 2-1/2" x 1/4" angles running full height of plates, substantially welded to plow plates and the plates to be bolted to the plow frame. The plow side extension to consist of 3/8" plates reinforced on back with 2-1/2" x 2-1/2" x 1/4" angles substantially welded to plow plates and the plates to be bolted to the plow side wings. This plow extension to have 4 pipe braces extending back and connected to 5" @ 18.7# H-beams placed vertically on the car. The H-beams to be riveted, at the bottom, to the car side sills and at the top, braced with 5" @ 18.7# H-beams, placed diagonally. Each pipe brace to consist of 2-1/2" extra strong pipe fitted at the ends with cast steel brace connection castings.

By using the above extension plow, the total height of the plow is increased to about 9' 0" above the rail. These extensions are to be properly braced to the main body of the car and to be so constructed that it can be removed when not required for plowing snow.

Sept. 1, 1939
High Front Flow

FRONT PLOW OPERATING CYLINDER

A 23" diameter air cylinder securely supported on structural steel pedestal to be the means of raising and lowering the front plow and plow side wings that are attached to end of plow. The cylinder to have piston travel sufficient to raise plow 8" above top of rail and lower to 6" below top of rail. The plow cylinder mechanism to be equipped with a small cylinder for operating lock pin device.

SIDE WINGS

Car to be equipped with side wings, extending from the outer end of front plow back to main wings. The front end of each side wing to be connected to front plow by means of a hinge to permit them to swing outwardly to give access to the trucks. The rear end of the side wings to be provided with a small auxiliary wing, one on each side of the car, hinged to side wings to permit them to swing open in harmony with the main spreader wings. The side extension wings to swing backward lapping the main wings sufficiently to keep the ties clear of material spread by its continuous flow from plow to main wings.

CAB

Car to have operator's cab. Same to be made of wood construction with sufficient steel framing and located immediately behind the stationary posts.

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October 1, 1929
High Front Plow



Side view of a Type A JORDAN Spreader-Ditcher machine converted in spreading form showing left wing leveling material adjacent to the track preparatory to laying the second main line.



Another view of the same operation as above showing the operation taking form. The Type A Spreader-Ditcher is also used in this particular job for spreading fills thereby shaping the ballast and leveling the sub-grade.



A view of the finished operation. Later ballast was dumped from side dump cars, leveled again with a JORDAN Spreader making the roadbed ready for the application of ties and rails.



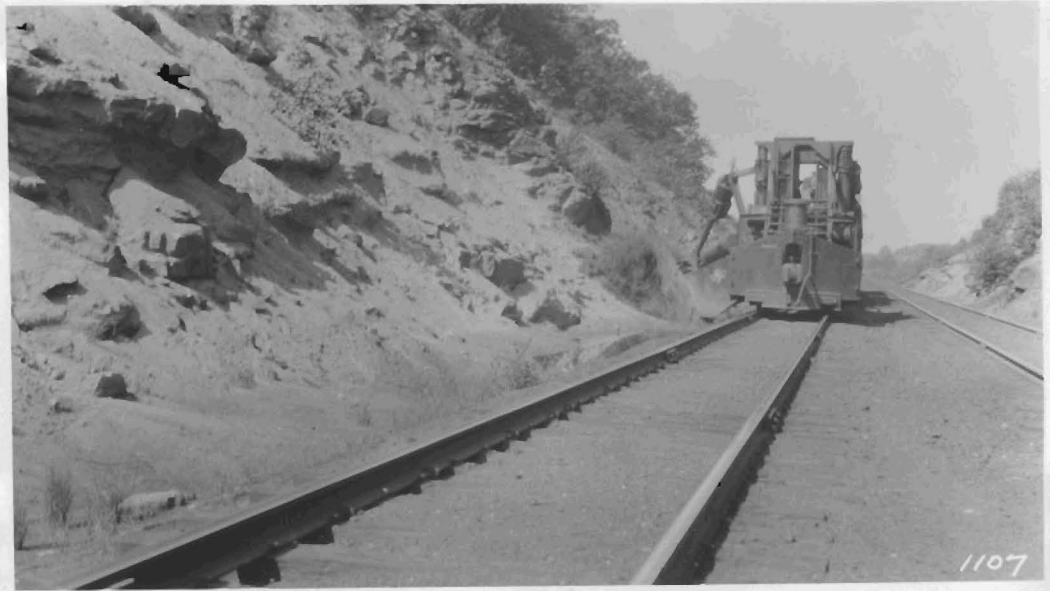
A view of the Type A Spreader-Ditcher before starting the ditching operation.



This picture taken after the JORDAN has passed through the cut a couple of times. This cut necessitates another trip through in order to complete the work.



This view illustrates the neat work which can be accomplished with a Type A JORDAN Spreader. Your attention is called that all cuts ditched out in this way give you perfect drainage also during the winter months aids materially in handling snow.



A view of a Type A Spreader-Ditcher working in a rock cut. Note the water standing in pools just ahead of the machine.



This view taken after one trip through with the JORDAN. Note the water preceding the machine down the track.



The finished job, showing the water draining out of the cut.



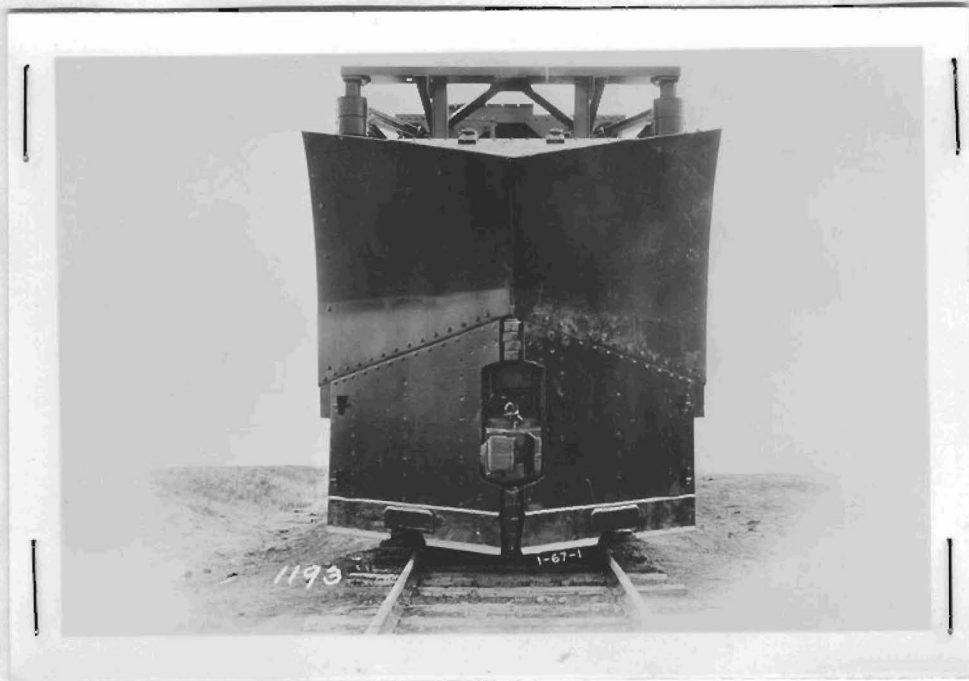
This view shows a Type A JORDAN converted in carry wing form. The machine is used in this form in dragging dirt out of a cut. Both wings can be used on single track operation.



A Close-up view of a Type A JORDAN showing the right wing converted into carry wing form. Note the dirt carrying capacity and also the small ballast carry wing which prevents the dirt from coming up on the ballast.



Another view of the same operation showing the dirt being carried out on the fill. In operating a Type A JORDAN in carry wing form, we widen the cut and widen the fill in the same operation. The cost of handling dirt in this form is at a minimum.



Front view showing a Type A JORDAN equipped with our detachable high front Snow Plow. The upper section is removable for summer operation. The entire plow actuates up and down by means of a 23" air cylinder.



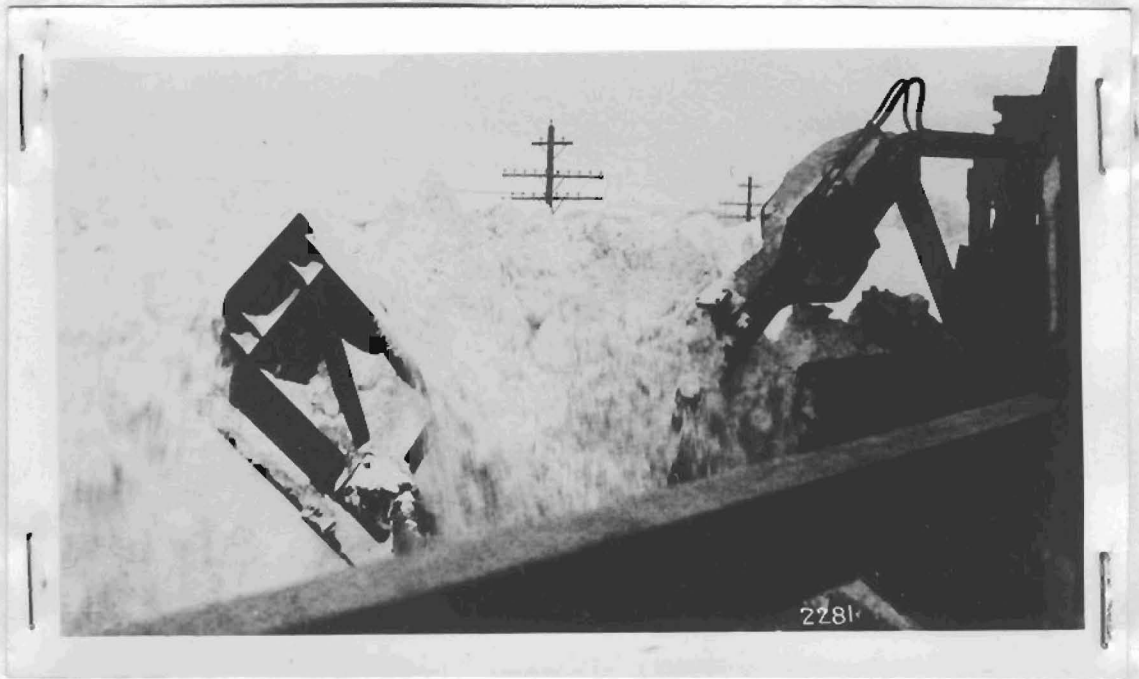
Three-quarter front view of a Type A JORDAN with high detachable Snow Plow. The plow in this picture is set to cut 3" below top of rail. The left wing is open in spreading form.



View showing a Type A equipped with high front Snow Plow flanging out one track, the left wing open and spreading the snow across the adjacent track while the right wing is plowing the snow out of the cut.



This is a companion picture of the preceding photograph showing the machine flanging the snow out of the adjacent track and also the left wing open, plowing the snow farther away from the main line. Note the adjacent track ready for travel.



This view is taken from the deck of the Spreader showing the left main wing open plowing snow out of a cut.



A view of a snow blocked line with the JORDAN Spreader equipped with the high detachable Snow Flow in the background.



This view shows the finished job.



This view shows a railroad line which is covered with snow from 1" to 23" of ice above the rails. This condition was caused by an ice jam forming in an adjacent river, water backing up over the main line accompanied by a severe drop in temperature.



This view shows the track opened with the Type A Spreader-Ditcher and high front Snow Plow in the background.



This view shows another section of the track which was opened by the Type A. The main wings were not opened to spread the ice further away from the track due to the fact that the ice being plowed in this manner would break telegraph poles and fence poles.



This pictures some of the operating officials that accompanied the heavy Duty Type A JORDAN with the high Plow on this job. Note the thickness of the ice which averaged from 1" to 23".