

THRALL CAR MANUFACTURING COMPANY  
CHICAGO HEIGHTS, ILLINOIS 60411

SPECIFICATION NUMBER LO-5260-93-0771  
5260 CUBIC FOOT, COVERED HOPPER CARS  
CHICAGO & NORTH WESTERN RAILROAD  
JULY 26, 1993

GENERAL DIMENSIONS:

INSIDE LENGTH	52' - 10-5/8"
INSIDE WIDTH	10' - 7-3/8"
TRUCK CENTERS	44' - 4-1/2"
LENGTH OVER STRIKERS	55' - 5"
LENGTH OVER PULLING FACES OF COUPLERS	58' - 0-1/2"
EXTREME HEIGHT	15' - 5-1/2"
WIDTH OVER SIDE SHEETS	10' - 7-3/4"
CLEARANCE	AAR PLATE "C"
CUBIC CAPACITY - NOMINAL	5260 CUBIC FOOT
ESTIMATED LIGHTWEIGHT	65,500 LBS.
CAPACITY	220,500 LBS.
<u>CURVE DATA - CAR WITH E60 COUPLER</u>	
UNCOUPLED CAR	180' RADIUS
COUPLED TO LIKE CAR	214' RADIUS
COUPLED TO AAR BASE CAR	212' RADIUS
<u>DRAWING</u>	
GENERAL ARRANGEMENT	4M-001-538

STEEL:

Steel shall be identified in this specification by its nominal dimensions and its specified minimum yield strength as provided in the following ASTM or AISI specifications:

<u>DESIGNATION</u>	<u>MINIMUM YIELD STRENGTH</u>	<u>SPECIFICATION</u>
Mild Steel	Not Applicable	AISI C or M-1012 thru 1031  ASTM A-575 A-576
Structural Steel	36,000 psi	ASTM A-36 A-53 A-120 A-500 A-501 A-570 A-575 A-576
High Strength Low Alloy (HSLA) Steel	42,000 thru 60,000 psi	ASTM A-570 A-572 A-576 A-607
Corrosion Resistance (CRES) Steel	50,000 psi	ASTM A-242 A-606
Wear Resistant (WR) Steel	Not Applicable	AISI C-1070 thru 1095

GENERAL DESCRIPTION:

This specification describes a (286,000 lbs. G.R.L.) 5260 cubic foot, all-welded oval and center sill-less design covered hopper car, with quadruple hopper construction. The hoppers are each equipped with bolted, 13" x 47" gravity/pneumatic discharge gates designed for efficient unloading. Complete loading is assured with a 20" wide x 48' - 1-1/4" long trough hatch located on center line of roof. The design and construction shall be in accordance with current AAR/FRA specifications.

CAR STRUCTURE:

CENTER SILL

The all-welded fabricated stub center sills, with forged front and rear draft lugs, extend from the striker to 26" beyond the upper bolster web and shall consist of the following major structural components:

Center Sill Webs	1/2"	HSLA-50 Steel
Center Sill Flanges	3/4" x 4"	HSLA-50 Steel
Center Filler Base Plate	5/8"	HSLA-50 Steel
Center Filler End Plate	5/8"	HSLA-50 Steel

BODY BOLSTER:

The all-welded body bolster design shall consist of the following major components:

Bottom Cover Plate	1/2" x 21"	HSLA-50 Steel
Lower Bolster Webs	3/8"	HSLA-50 Steel
Side Bearing Brace	1/4" Web and 1/2" Flange	HSLA-50 Steel
Shear Plate	1/2"	HSLA-50 Steel
Upper Bolster Web	3/8"	HSLA-50 Steel
Upper Web Stiffener	3/8"	HSLA-50 Steel

The lower body bolster shall consist of single web, bottom cover plate and side bearing brace. The web and bottom cover plate shall extend from the center sill to the side bearing brace. The lower body bolster assembly shall be welded to the shear plate which extends from side sill to side sill. The upper bolster web shall extend from side sheet to side sheet and from the shear plate up to the end slope sheet. Each upper bolster web shall be stiffened above the side bearing braces. Lifting and jacking provisions are provided.

#### END SLOPE SHEETS

The two-piece vertically spliced end slope sheets shall be made from 3/16" HSLA-50 Steel, and inclined at a 45° angle at the gate and 37° angle at the top.

#### END SLOPE SHEET REINFORCEMENTS

Each end slope sheet shall be reinforced with two (2) 1/4" HSLA-50 steel vertical webs (gull wings) welded to the shear plate, upper bolster web and the end slope sheets. The slope sheets are also reinforced horizontally with a 1/4" structural steel formed angle and a 3/8" HSLA-50 steel formed angle that extends from side sheet to side sheet.

#### INTERMEDIATE SLOPE SHEETS

The intermediate slope sheets shall be made from 3/16" HSLA-50 Steel, and inclined at a 45° angle.

#### INTERMEDIATE SLOPE SHEET REINFORCEMENTS

The intermediate slope sheets shall be reinforced horizontally with a 1/4" HSLA-50 Steel formed angle that extend from side sheet to side sheet.

CROSSRIDGE (PARTITIONS)

The two-piece vertically spliced formed crossridges (partitions) shall be made of 3/16" HSLA-50 Steel which shall extend from side sheet to side sheet and from roof to the intermediate slope sheet and inclined at a 45° angle down to the gate adapter. The crossridges shall have grab irons applied for access to all four compartments.

WING SHEETS

The hopper wing sheets shall be made from 1/4" HSLA-50 Steel, and inclined at 45° angle. Vibrator brackets shall be applied.

SIDE CONSTRUCTION

The all-welded side design shall consist of the following major components:

Side Plate	1/8" Special Formed Section	Structural Steel
Side Sheet	3/16"	HSLA-50 Steel
Side Sill	1 1/32" Special Formed Section	HSLA-50 Steel

The side sheets shall lap inside the side plate and the side sill and shall be welded continuously to both the side plate and side sill. Side sheets shall be seam welded with 100% weld penetration.

ROOF CONSTRUCTION

The all-welded roof design shall be made with 3/16" HSLA-50 steel sheets. The roof sheets shall be of curved self-supporting design. The roof shall incorporate a loading trough 20" wide x 48" - 1-1/4" inside length with half round ends.

## END CONSTRUCTION

The welded and bolted end construction shall consist of the following major components:

End Sill	1/2" x 6"	HSLA-50 Steel
Corner Posts and Ladder Stiles	3/16" x 3" x 3" Angle	Structural Steel
Cross Brace at Top	1/4" x 3" x 3" Angle	Structural Steel
Hand Brake Support	3/8" Formed Channel	Structural Steel
Hand Brake Ladder Stile	1/2" x 3-1/2" x 3" Angle	Structural Steel

The end sill which is welded to the shear plate and side sills will support the corner posts, end ladder stiles, and hand brake support, all of which, except hand brake support, extend up to the cross brace which is connected to the end slope sheet. The side ladder stiles are made from 3/8" x 2" structural steel bar.

## BODY SPECIALTIES

### COUPLERS

AAR No. SBE60DE Grade "E".

### YOKES

AAR No. SY40AE, Grade "E".

### DRAFT GEARS

AAR M-901-E.

### COUPLER RELEASE

AAR Standard rotary operating design.

### CENTER PLATES/CENTER FILLERS

Low profile design 16" diameter, Grade "B" cast steel flame hardened to 375 min. B.H.N.

#### SIDE BEARINGS

Flat design 5/8" x 5" wide applied with 3/4" diameter Grade 8 bolts, ASTM-325 hex nuts and hardened steel washers. Nuts shall be tack welded after application. Shimming shall be applied to the body bolster as required to adjust side bearing clearance.

#### DRAFT KEYS/RETAINERS

AAR Standard S-121 single hole design, with AAR approved "T" type AAR standard S-122 retainers.

#### TROUGH COVERS/LOCKS

Four (4) aluminum section covers with gaskets and "AZEE" over center cam-type locks, allowing covers to open from one side only.

#### DISCHARGE GATES

Four (4) 13" x 47" gasketed gravity pneumatic discharge gates will be applied by bolting by the lining contractor.

#### SAFETY APPLIANCES

Grab irons and ladder rungs shall be 3/4" diameter material and shall be applied with two-piece galvanized fasteners in accordance with current AAR/FRA requirements. Crossover grab iron shall be 1" diameter without center support. Pre-galvanized end crossover platforms and double full-length twenty-four (24) inch wide lateral and longitudinal running boards shall be applied to brackets welded to the roof.

#### CROSSOVER STEP

An AAR approved galvanized perforated type crossover step shall be applied at both ends of the car.

DEFECT CARD HOLDER

One (1) per car.

ROUTING CAR BOARDS

Two (2) per car.

TRUCKS:

GENERAL

Trucks shall be 100-ton capacity (286,000 lbs. G.R.L.) with 6-1/2" x 12" roller bearing journals and 3-11/16" spring travel.

SIDE FRAMES

AAR approved 6-1/2" x 12" Ridemaster, Grade "B", cast steel with column guide wear plates shall be applied with 3/4" diameter #8 hi-tensile bolts and two-point welding and arranged for snap-on pedestal roof liners.

BOLSTERS

AAR approved 6-1/2" x 12" Ridemaster, Grade "B", cast steel with 16" diameter center bowl for 1-3/4" center plate engagement with 1/4" manganese vertical liner, welded continuous and 1/4" drop-in manganese horizontal wear liner applied loose. Bolster shall be designed for rod thru brakes.

CENTER PIN

1-3/4" diameter.

SNOBBING

Ridemaster



SPRINGS

AAR 3-11/16" travel alloy steel; twenty-eight (28) D-5 outers and twenty-four (24) D-6 inners.

SIDE BEARINGS

Double Roller, 688-B.

WHEELS

AAR H-36 or CH-36 one-wear, Class "C".

AXLES

Raised wheel seat, Class "F", 6-1/2" x 12" roller bearing type.

ROLLER BEARINGS

6-1/2" x 12" Class 'F' N.F.L. with backing rings.

ROLLER BEARING ADAPTERS

6-1/2" x 12" narrow pedestal, with hardened crowns and thrust shoulders.

BRAKE BEAMS

AAR No. 18.

BRAKE SHOES

AAR H-4 2" Composition.

BRAKE BEAM WEAR PLATES

Steel, AAR S-367-78.

TRUCK LEVERS, BOTTOM RODS, BODY LEVERS, JAWS AND CLEVIS

Forged or flame cut steel.

#### AIR BRAKES

A body-mounted 8-1/2" x 12" brake system with empty/load valve shall be designed and applied in accordance with current AAR specification No. 2518. Air brakes shall be tested according to current AAR requirements, including actual brake shoe force readings.

#### HAND BRAKE

AAR 1993, Group 'N' hand brake with 1966 ball crank and 9/16" BBB straight link quality chain.

#### SLACK ADJUSTER

An AAR approved automatic double acting.

#### BRAKE PIPE/FITTINGS

Schedule 80 with single gasket flange type socket welded fittings.

#### PIPE CLAMPS

Split type wedge/base design pipe clamps.

#### BRAKE PINS

Case hardened steel.

#### PAINTING AND STENCILING

#### CLEANING

The underframe and car body shall be cleaned by sandblasting prior to painting. Any component which might be damaged by this operation shall be suitably protected.

#### PAINTING

Inaccessible or hidden surfaces shall be given one (1) coat of primer.

The complete exterior of the car and discharge gates shall be painted with one (1) coat of direct-to-metal "CNW Yellow" paint, Williams-Hayward No. 58-7970HKTH.

The complete interior of the car shall be painted with a two coat application of the Carboline 892 epoxy coating suitably cured prior to shipment. Thrall shall contract with the lining contractor to apply the Carboline system to an 8-12 dry film thickness in accordance with the manufacturer's instructions.

Truck bolsters and side frames shall be given one (1) coat of light-bodied black paint.

#### STENCILING

All stenciling required per current AAR/FRA Rules and customer requirements in accordance with CNW drawing D-61777 shall be applied with black decals. Customer furnished CNW logos (two each) and CNW letter decals (two sets of 36" high letters) shall be applied. The car number shall be stenciled on the center sill and bolster.

#### A. E. I. TAGS

Two automatic equipment identification tags shall be applied using weld on mounting brackets.

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<u>Item</u>	<u>Description</u>	<u>Supplier</u>
Coupler	AAR SBE60DE Grade "E" Steel	McConway-Torley
Yoke	AAR SY40AB Grade "E" Steel	McConway-Torley
Draft Key	AAR Single Hole Design w/AAR Approved "T" Type S-122 Retainer Heat Treated	ACF
Front and Rear Draft Lugs	Forged C-1030 Steel	Berwick
Center Plate	16" Diameter Low-Profile Design Grade "B" Cast Steel, Patt. No. BS-347	A. S. F.
Draft Gear	AAR M-901-E, Miner TF880 and Cardwell Mark 325	50¢ Miner 50¢ Cardwell
Coupler Release	AAR Standard Bottom Operated Rotary No. SCU-10556-B	Stanrail
Hatch Assemblies	Four (4) 20" Aluminum Single Operating One Side Only with 8 locks, brackets, hardware ATP-Aluminum Quantum	Aero Transportation (CNW Purchase)
Running Boards	Open Grip Design, 24" Wide w/End Crossover Platforms	Morton
Discharge Gates	Miner, MKE-8809, 13" x 47" Bolt-on, sealed, w/locking & unlocking feature	Miner (CNW Purchase)
Side Frame	AAR 6-1/2" x 12" Ridemaster Grade "B" Cast Steel w/Column Guide Wear Plates Applied by Welding and Bolting and Arranged for Snap-on Pedestal Wear Plates	A.S.F.
Snubbing	Ridemaster	A.S.F.

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<u>Item</u>	<u>Description</u>	<u>Supplier</u>
Bolster	AAR 6-1/2" x 12" Ridemaster Grade "B" Cast Steel w/16" Diameter Machined Center Bowl, with 1/4" Manganese Vertical Liner, Welded Cont., 1/4" Manganese Horiz. Liner Applied loose and Rod Thru Brakes.	A.S.F.
Wheels, Axles,	Mounted Sets Consisting of: CH-36 Class "C" One-Wear Wheels 6-1/2" x 12" Grade "F" Axles 6-1/2" x 12" NFL Bearings	Griffin (CNW to purchase wheels) Standard Steel Timken
Adapters	AAR 6-1/2" x 12" Narrow Pedestal w/Hardened Crown and Thrust Shoulders	Advanced Cast
Springs	AAR Alloy Steel, 3-11/16" Travel 28 - D-5 - Outers 24 - D-6 - Inners	Union
Brake Beam Wear Plate	Steel, AAR S-267-78	Buffalo
Side Bearing	Double Roller #688-B	Miner
Brake Shoes	2" Composition	50% Griffin 50% Wabco
Brake Shoe Keys	AAR Standard Single Leaf Design	Transdyne
Brake Beams	AAR #18	Traintek
Air Brakes	8-1/2" x 12" ABDX System	Wabco
Empty/Load Valve	ELX-S50 Slope Sheet Mount w/ FDA approved fabric	Wabco
Slack Adjuster	AAR Approved S-419-78 Double Acting	Cardwell

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<u>Item</u>	<u>Description</u>	<u>Supplier</u>
Hand Brake	AAR 1993, Group "N" Vertical Wheel Type and 66 Ball Crank	Cardwell
Paint	Traditional C&NW Yellow DTM Top Coat No. 58-7970HKTN Interior Lining Carboline 892 Epoxy Coat Applied by Lining Contractor	Williams-Hayward Carboline
Stencils	AAR/FRA Requirements-Black Decals Customer Furnished CNW Logo Decals (2 ea.) and CNW Letter Decals (2 sets ea.) Reporting Marks and Car Numbers are to be Reflective Decals	Thrall CNW Furnished
A. E. I. Tags	#AT 5110	Amtech