

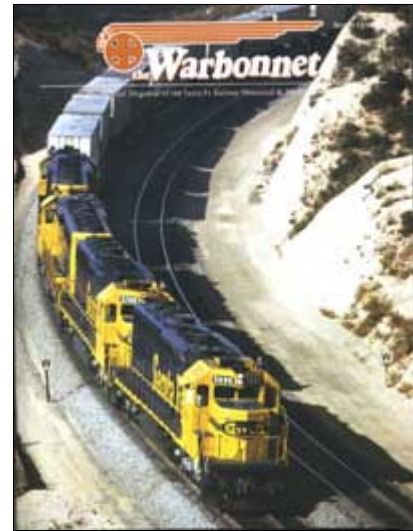
Santa Fe's SD45-2 Fleet

History, Roster, and Detail

by Ralph Back

This document is the source document that was the basis for the Second Quarter 2007 *Warbonnet* article titled **Santa Fe's SD45-2 Fleet**. *theWarbonnet* is the official quarterly magazine of the **SANTA FE RAILWAY HISTORICAL & MODELING SOCIETY**. Additional photos and updated text are included in this document that were not in the *Warbonnet* article.

WHATS NEW: Updated the **BNSF SD40-2R 1565-1575 Repowering and Renumbering** section with more information on this program.



theWarbonnet Second Quarter 2007 Cover

Left - Santa Fe's SD45-2 fleet was in its prime when four high-speed SD45-2s were assigned to its high-priority premium service trains in the mid-1970s. ATSF SD45-2 5696, approaching Summit, CA December 12, 1975 on the South Track of Santa Fe's LOS ANGELES DIVISION FIRST DISTRICT, leads the 5708 and two other SD45-2s on the eastbound 891 Train *Super C*. ATSF 5696 is one of the high-speed units from the second order, and on the LOS ANGELES DIVISION, trains 198 and 891 were authorized to operate at passenger train speed, but not exceed 79 MPH. The 891 Train departed LA Hobart Yard at 9:30A, San Bernardino at 11:30A, and is due in Barstow at 1:15P (Departure/arrival times from Freight Train Schedule in **AT&SF COAST LINES LOS ANGELES DIVISION TIME TABLE No. 2 IN EFFECT Sunday, April 27, 1975**). - Kodachrome by Ralph Back.

Santa Fe's SD45-2 Fleet.

The Santa Fe was the first and largest purchaser of EMD's SD45-2 acquiring ninety 20-cylinder turbo-charged 645-E3 3600-hp engined SD45-2s in three orders between May 1972 and May 1974. Introduced with the other EMD 'Dash 2' models in 1972, the SD45-2 had improved electrical systems, higher capacity D77 traction motors, 4000 gallon fuel tank, and a redesigned HT-C truck. The SD45-2 addressed the radiator problem of the SD45 by replacing the three section angular mounting with a longer radiator area, almost four feet longer than the SD45, divided into two sections with three widely-spaced fans. The SD45-2 was mounted on the same frame (68' 10") as the SD40-2 with the cab centered over the middle axle but lacked the long end

platform. The SD45-2 did not sell well for EMD as problems developed with the 20-cylinder engines and the large radiators resulted in increased maintenance costs. One hundred thirty-six units were produced between May 1972 and September 1974; only Santa Fe(90), Clinchfield(18), Erie-Lackawanna(13), and Seaboard Coast Line(15) ordered SD45-2s while the Southern Pacific/Cotton Belt purchased 247 "Tunnel Motor" versions, the SD45T-2.

Santa Fe's SD45-2s were assigned to the 5625 Class, and the first Santa Fe order arrived in the then standard blue/yellow stripe scheme - all repainted later in the blue/yellow Warbonnet scheme. The second and third orders arrived in the blue/yellow Warbonnet scheme, and ATSF 5687 was the very first EMD-painted yellowbonnet delivered to the Santa Fe. All of Santa Fe's SD45-2s were delivered with EMD-style "**Santa Fe**" billboard lettering, front snowplow, a Prime Strato-Lite rotary beacon mounted on cab roof slope on Conductor/Fireman's side, a Leslie three-chime airhorn centered on cab roof above headlight and nose classification lights. All SD45-2s in the second and third orders were delivered with cab roof mounted A/C but only six units in the first order were so equipped. The SD45-2s were initially assigned to the Chicago/Kansas City/West Coast freight pool running on some of Santa Fe's hottest trains on the mainline. SD45-2s 5687-5704 from the second order were high-speed locomotives (59:18 gearing - 90 mph maximum speed) purchased for use on the high-priority premium service COFC/TOFC trains 198/891 *Super C*.

The most notable SD45-2s were the "Bicentennial" units 5700-5704 painted red/white/blue between 1975 and 1978, with five-foot U.S. Presidential seals bolted-on, to honor the Nation's 200th Birthday. The Santa Fe went all out for the "Bicentennial" doing the most repainting of any Class I road with these five consecutively numbered SD45-2s, and assigned them to the *Super C* where one could usually be found on the point position leading this premium service freight during this time until *Super C* service was discontinued in May 1976. After that date they could be found in mainline service systemwide.

The SD45-2 fleet underwent a general class remanufacturing at San Bernardino, CA starting in February 1986 and continuing until March 1988 for a total of 69 units. The first 30 remanufactured units were released in the proposed SPSF merger 7200 number series painted in the red/yellow/black "Kodachrome" scheme but renumbered into the 5800 Class after the merger was denied in July 1986. All remanufactured SD45-2s were renumbered into the 5800 Class as SD45-2us, the "u" designating an upgrade to the locomotive. The 5625 was remanufactured to 5855 (SD CAT) with a Caterpillar 4250-hp engine in July 1987; and beginning in September 1987, eight units were diverted from the regular remanufacturing program to become cab-less booster SD45-2Bs renumbered into the 5510 Class.

ATSF 5705-5714 were acquired on lease, and retired in August 1992 and returned to lessor (9 units minus 5706). Five units left the roster from wreck damage - 5644,5658,5679/5861,5687,5706; and the SD CAT 5855 was sold to Morrison-Knudsen in 1993. Sixty-seven ATSF 5800 Class SD45-2us and all eight ATSF 5510 Class SD45-2Bs went to the BNSF with some continuing in service today.

Four paint schemes represented Santa Fe's SD45-2 fleet: blue/yellow stripe scheme, blue/yellow Warbonnet scheme, red/white/blue "Bicentennial" scheme, and the SPSF red/yellow/black "Kodachrome" scheme.

Roster Source 7. "The Santa Fe Diesel Volume Two: 1960-1995" is an excellent resource for many more color photos of the Santa Fe SD45-2/SD45-2u/SD45-2B fleet.

EMD SD45-2 Specifications

Prime Mover	20-645-E3	Truck Type	HT-C	Weight	395,500 lbs.
Length	68' 10"	Drivers	40"	Dynamic Brakes	Ext. Range
Width	10' 3"	Gear Ratio	60:17*	Main Generator	AR-10-B4
Height	16' 3"	Top Speed	73 mph	Alternator	D14
Fuel Capacity	4,000 U.S. gallons	Traction Motors	D77B/DC	Horsepower	3,600

* After Class III 62:15

All ATSF SD45-2s delivered with the following details:

- bell mounted under frame in front of fuel tank on Conductor/Fireman's side
- Leslie three-chime airhorn location centered on cab roof above headlight (horn later relocated to top of hood between dynamic brake fans and radiator fans)
- vertical front headlight located between number boards (starting in 1988 the headlights on many 5800 Class SD45-2us were relocated to the top of the short hood)
- snowplow front-only
- cab sunshades
- rear-hood and nose classification-lights (front class lights removed when remanufactured to 5800 Class SD45-2u)
- Prime Strato-Lite rotary beacon mounted on cab roof slope on Conductor/Fireman's side
- single rear-view mirror mounted in front of cab side windows
- no rear-hood number boards

- wire-screen radiator grilles (ATSF 5706, 5707, 5712-5714 were delivered with experimental built-out EMD inertial radiator fan air intake grilles)
- horizontal headlight on long hood end
- single MU receptacle on rear walkway on Engineer's side
- ratchet-style hand brake recessed into short hood on Conductor/Fireman's side
- drop-step on rear walkway
- step tread edges painted blue
- EMD-style "**Santa Fe**" billboard lettering¹

¹ The as-delivered EMD-style "**Santa Fe**" billboard lettering on the long hood differed from the "Santa Fe"-style. The difference is most noticeable in the letters "a" in "**Santa**" and the "e" in "**Fe**". EMD-style lettering "a"s had a "puzzle piece" while "Santa Fe"-style "a"s had a "boot" in the upper left portion of the letter. EMD-style "e"s appeared "squashed" while "Santa Fe"-style "e"s were circular in shape.

ATSF SD45-2/SD45-2u/SD45-2B Roster Details

ATSF As Delivered SD45-2s - 90 Units

Class	Road#	Build#	Built	Detail Notes
5625	5625-5661	7391-1 to 37	5/72	A,B,C,F,K,Q
5625	5687-5704, 5662-5686	72642-1 to 18, 72642-19 to 43	5/73-6/73	B,D,G,H,N,O
5625	5705-5714	74603-1 to 10	5/74	B,E,G,J,L,P

ATSF "Bicentennial" SD45-2s - 5 Units

Class	Road#	Build#	Painted	Detail Notes
5625	5700-5704	72642-14 to 18	2/75-1/76	H,I

ATSF Remanufactured SD45-2Bs - 8 Units

Class	Road#	Build#	Remanufactured	Detail Notes
5510	5510-5517 ¹	**	9/87-1/88	I,M

ATSF Remanufactured SD45-2us - 69 Units

Class	Road#	Build#	Remanufactured	Detail Notes
5800	7200-7229 ¹ (SPSF) Renumbered 5800-5829	**	2/86-8/86	S
5800	5830-5868 ¹	**	8/86-3/88	R,T

BNSF SD45-2 - 67 Units and BNSF SD45-2B - 8 Units

Class	Road#	Build#	Renum BNSF	Detail Notes
n/a	6450-6516 ²	**	1/98-7/01	U
n/a	7504-7511 ²	**	1/98-1/00	V

Roster Notes:

¹ See **Roster Sources 4.** and **5.** for unit-by-unit renumbering.

² See **Roster Sources 8., 9., 10., 12., 13.,** and **14.** for unit-by-unit renumbering and dispositions.

**Same as original unit Build#.

Units off the roster (6 units): 5625/5855,5644,5658,5679/5861,5687,5706

Detail Notes:

A - Units delivered w/o A/C also featured the following details:

Can-type radio antenna mounted on "table" ground plane right of inertial air filter behind cab roof on Engineer's side.

B - Units delivered with A/C (5647, 5657-5714) also featured the following details:

Externally visible power conduit to A/C running from numberboard area to atop the electrical cabinet (near rear wall of cab).

Can-type (5625-5704) or Sinclair (5705-5714) radio antenna mounted on "table" ground plane left of inertial air filter behind cab roof on Engineer's side.

Radio conduit mounted on Engineer's side parallel with handrails running from numberboard assembly to the radio antenna ground plate.

C - Small tapered front anticlimber with front and rear drop-steps, and a single MU receptacle on top of the walkway on Conductor/Fireman's side.

D - Full-width front anticlimber, rear drop-step, and front MU receptacle underneath the anticlimber on the Conductor/Fireman's side.

E - Medium-width front anticlimber, rear drop-step, coupler lift bars with loop, and front MU receptacle underneath the anticlimber on the Conductor/Fireman's side.

F - ATSF 5625-5661 delivered in standard blue paint with yellow trim and black end-sheets and dark blue Santa Fe cross herald centered on end of short hood; all later repainted to yellow Warbonnet with silver painted trucks.

G - ATSF 5662-5714 delivered in yellow Warbonnet scheme, black trucks and fuel tank, and blue end-sheets and snowplow.

H - ATSF 5700-5704 painted in "Bicentennial" red/white/blue with silver painted trucks, under frame details, fuel tank, and end-sheets and snowplow; and five-foot United States Presidential seals bolted on the handrails behind the cab. Xenon strobes mounted on platforms on both angled surfaces of cab roof. Retained this scheme between 1975-1978.

I - ATSF SD45-2 units remanufactured to SD45-2B cableless units by Santa Fe at San Bernardino, CA: 5651,5676,5703,5626,5701,5633,5684,5700.

J - ATSF 5706, 5707, 5712-5714 (5 units) delivered with EMD's experimental inertial radiator fan air intake grilles.

K - Louvers on the cab wall in front of the Engineer and on the side of the nose in front of the cab door on the Conductor/Fireman's side.

L - ATSF 5705-5714 acquired on a lease agreement, not remanufactured, retired 8/92 and returned to HELM Leasing. The 5705,5707-5709 went to Montana Rail Link as MRL 309-312 and 5710-5714 were leased to the Trona Railway as TRONA 3001-3005 (ATSF 5712,5713,5710,5714,5711). Trona returned the SD45-2s to Helm Leasing in April 2004 after which they could be found working on the UP as HLCX 6408-6412 (ATSF 5710,5713,5712,5714,5711).

M - ATSF SD45-2B 5510 had its dynamic brake grids in the standard location over the engineroom, 5511-5517 had the dynamics over what had been the short hood.

N - ATSF 5687-5704 were delivered before 5662-5686 and had gear ratios (59:18) for high-speed service on high priority trains like the *Super C* ("59-18" stenciled on each side of the frame behind the "F").

O - Small air vent mounted vertically on cab side below front of cab window on Engineer's side which caused the unit number to be noticeably off center.

P - Small air vent mounted vertically on cab side below rear of cab window on Engineer's side.

Q - Low mounted rear hood classification lights.

R - ATSF SD45-2 units remanufactured in kind by Santa Fe at San Bernardino, CA; painted in yellow Warbonnet scheme with silver painted trucks, can-type radio antenna replaced with Sinclair type, and nose classification lights removed. Units remanufactured from the 5625-5661 first delivery with small tapered front anticlimber received coupler lift bars with loop.

S - ATSF SD45-2 units remanufactured in kind by Santa Fe at San Bernardino, CA; numbered in the SPSF 7200 number series, and painted in the red/yellow SPSF scheme with silver painted trucks, black end-sheets and fuel tank, and yellow step edges. Units remanufactured from the 5625-5661 first delivery with small tapered front anticlimber received coupler lift bars with loop if not already installed. Can-type radio antenna replaced with Sinclair type and nose classification lights removed.

T - ATSF SD45-2 5855 was an experimental repowering rebuilt with Caterpillar Model 3612 4250-hp engine in July 1987 (SD CAT); sold to Morrison-Knudsen in 1993 then to the Utah Railway as UTAH 9012.

U - Renumbered from ATSF 5800-5854, 5856-5860, 5862-5868. BNSF 6460 and BNSF 6481 painted BNSF "basic Heritage".

V - Renumbered from ATSF 5510-5517. The last four BNSF SD45-2Bs on the roster (7504-7506, 7508) were renumbered BNSF 6520-6523 during November-December 2006.

ATSF SD45-2 5625-5661 First Order - 37 Units

Class	Road#	Build#	Built
5625	5625-5661	7391-1 to 37	5/72



Left - The paint is spotless on new ATSF SD45-2 5640 displaying its as delivered appearance in the then standard blue/yellow stripe scheme with dark blue Santa Fe cross herald as it sits at the Needles fuel rack. The 5640 was one of the units delivered without air-conditioning. ATSF 5640 was remanufactured to SD45-2u 7210 painted in the SPSF red/yellow/black "Kodachrome" scheme during April 1986 and later renumbered 5810 and eventually repainted to the blue/yellow Warbonnet scheme. The former ATSF 5810 is on the BNSF roster as BNSF 6460 painted in the BNSF "basic Heritage" scheme. Including the BNSF "basic Heritage" scheme, the 5640 was the only ATSF SD45-2 to have four different paint schemes. Needles, CA 5-21-72. - *Kodachrome by Joe McMillan*

Right - ATSF SD45-2 5649 is making its first trip west. Note the high-mounted horn on the cab roof. The first order SD45-2s were delivered with this feature which didn't last too long as they were soon lowered to roof top level. The first Santa Fe SD45-2 order was the only group to have the small tapered front anti-climber and front drop-step, and low-mounted class lights on the rear hood. Note the rear hood detail of the unit behind the 5649 - its shows the low-mounted class lights, gaskets for the upper class lights and no rear hood number board gaskets. The 5649 was remanufactured to SD45-2u 5847 in December 1986, and was on the BNSF roster as BNSF 6497 until sold to NRE and leased back as NREX 6497. Needles, CA 6-3-72. - *Kodachrome by Joe McMillan*





Left - ATSF SD45-2 5627 displaying its as delivered appearance in the then standard blue/yellow stripe scheme with dark blue Santa Fe cross herald. The 5627 was one of the units delivered without air-conditioning, and now has its horn mounted low at roof top level. ATSF 5627 was remanufactured to ATSF 5857 in April 1987 and was on the BNSF roster as BNSF 6506 until retired in May 2002 and sold to NRE. Ibis, CA 1-27-74. - *Steve Patterson, Ralph Back collection*

Right - ATSF SD45-2 5660 has been repainted from its as delivered blue/yellow stripe scheme to the blue/yellow Warbonnet scheme with "Santa Fe" lettering style, yellow step tread edges, and now has a Sinclair radio antenna and coupler lift bars with loop. The 5660 was one of the six units from the first order delivered with A/C. Note the louvers on the front cab wall below the window. The 5660 was remanufactured to SPSF SD45-2u 7204 in March 1986 and later renumbered 5804, and was on the BNSF roster as BNSF 6454 until retired in July 2002. Barstow, CA 2-20-78. - *Kodachrome Ralph Back collection*



The first Santa Fe SD45-2 order for 37 units (ATSF 5625-5661 b/n 7391-1 to 37 b/d 5/72) was delivered in the then standard blue paint with yellow trim, black end-sheets and snowplow, yellow hand rails and blue vertical hand rail stanchions, and dark blue Santa Fe cross herald centered on end of short hood; all later repainted to blue/yellow Warbonnet scheme with silver painted trucks.

The first SD45-2 order is characterized by the small tapered front anticlimber with front and rear drop-steps, a single MU receptacle on top of the walkway on Conductor/Fireman's side, and louvers on the cab wall in front of the Engineer and on the side of the nose in front of the cab door on the Conductor/Fireman's side. Straight coupler lift bars were replaced with coupler lift bars with loop beginning mid to late 1970s. The first order had low-mounted class lights on the rear hood. Units in the first order delivered with A/C were 5647, 5657-5661.

ATSF SD45-2 5687-5704, 5662-5686 Second Order - 43 Units

Class	Road#	Build#	Built
5625	5687-5704, 5662-5686	72642-1 to 18, 72642-19 to 43	5,6/73



Left - ATSF SD45-2 5669 is three months old displaying its as delivered appearance in the blue/yellow Warbonnet scheme. The 5669 was the first SD45-2 remanufactured in February 1986 to SPSF SD45-2u 7200 and later renumbered 5800. You can see the small air vent mounted vertically on cab side below the front of cab window on the Engineer's side which caused the unit number to be noticeably off center. ATSF 5800 is on the BNSF roster as BNSF 6450. Corwith - Chicago, IL 9-1-73. - Joe McMillan, Ralph Back collection

Right - ATSF SD45-2 5677, at Kansas City, KS 9-4-78, has been repainted and now has yellow step tread edges and yellow front anti-climber face, "Santa Fe" lettering style, and silver painted trucks. The 5677 was remanufactured to SPSF SD45-2u 7208 in March 1986 and later renumbered 5808, and was on the BNSF roster as BNSF 6458. In February 2008, the 6458 was repowered with a 16-cylinder 645 engine, designated a SD40-2R, renumbered 7953 and painted in the new **BNSF** Heritage scheme. - Kodachrome Ralph Back collection



The second Santa Fe SD45-2 order for 37 units (ATSF 5687-5704 b/n 72642-1 to 18 b/d 5/73 and 5662-5686 b/n 72642-19 to 43 b/d 6/73 - delivered in that order) was delivered in the newly adapted blue/yellow Warbonnet scheme with blue end-sheets and snowplow and dark blue Santa Fe cigar-band herald centered on end of short hood. The most distinguishing feature of the second SD45-2 order of 43 units was the small air vent mounted vertically on cab side below the front of cab window on Engineer's side which caused the unit number to be noticeably off center. The cab vent was moved to the an area near the rear cab side on the third SD45-2 order. The second order also featured an extended full-width front anti-climber, rear drop-step, and front MU receptacle underneath the anti-climber on the Conductor/Fireman's side. The Santa Fe's second SD45-2 order were the only SD45-2s to receive the extended full-width front anti-climber; which did not allow for later installation of the coupler lift bars with loop on the locomotive front (coupler lift bars with loop were installed on the rear on this group). All units in this order delivered with can-type radio antenna mounted on "table" ground plane left of inertial air filter behind cab roof on Engineer's side, and cab roof mounted A/C. In 1984, several units of this order were equipped with snow shields over the engine air-intake area and vertical exhaust lifters on the roof. ATSF 5664, 5667 and 5689 are known to have been equipped this way, and ATSF 5693 had only the vertical exhaust lifters.

ATSF SD45-2 5705-5714 Third Order - 10 Units

Class	Road#	Build#	Built
5625	5705-5714	74603-1 to 10	5/74



Left - ATSF SD45-2s 5708, 5712, and two other SD45-2s lead the eastbound 891 Train *Super C* on the South Track approaching Summit on the Santa Fe's Los Angeles Division First District. After leaving the Santa Fe roster in 1992, the 5708 went to work on the MRL and the 5712 went to work on the Trona Railway. Summit, CA 12-7-75. - *Kodachrome by Ralph Back*



Above - This closer view of ATSF SD45-2s 5708 and 5712 clearly shows the different style radiator air intake grilles on the 5708 and 5712. The 5712 has the experimental inertial type and the 5708 has the standard wire-screen type. ATSF 5706, 5707, 5712-5714 (5 units) were delivered with the EMD experimental inertial radiator fan intake grilles. Also note the Sinclair radio antenna, coupler lift bars with loop, and location of the vertical air vent toward the rear of the cab below the cab window on the engineer's side. Summit, CA 12-7-75. - *Kodachrome by Ralph Back*

Right - ATSF SD45-2 5714 has just been delivered to the Santa Fe at Corwith Yard. The 5714 has the medium-width anticlimber with coupler lift bars with loop and silver painted trucks, and was the last SD45-2 of the third order which were leased and not owned by the Santa Fe. The 5714 has the experimental inertial radiator fan air intake grilles which became standard on the EMD 'Dash 2' models. Note the different contour, from the first two Santa Fe SD45-2 orders, front step handholds. Chicago, IL 6-1-74. - *Joe McMillan, Ralph Back collection*



Close-up of ATSF SD45-2 5714's EMD experimental built-out EMD inertial radiator fan air intake grilles.

The third Santa Fe SD45-2 order for 10 units (ATSF 5705-5714 b/n 74603-1 to 10 b/d 5/74) was delivered in the then standard blue/yellow Warbonnet scheme with blue end-sheets and snowplow, black fuel tank, and blue medium-width front anti-climber. The medium-width front anti-climber allowed all units to be fitted with the coupler lift bar with loop. Some units in this order were delivered with silver-painted trucks - 5714 was but 5705 was not. All 10 units of this order delivered with a new contour vertical front and rear step handholds. ATSF 5706, 5707, 5712-5714 (5 units) were delivered with experimental built-out EMD inertial radiator fan air intake grilles that were similar to the engine air intake grilles. All units in this order delivered with Sinclair radio antenna mounted on "table" ground plane left of inertial air filter behind cab roof on Engineer's side, cab roof mounted A/C and nose classification lights. Beginning in 1986, the nine remaining SD45-2s of this order had their nose classification lights removed. FRA regulations required that all equipment installed on a locomotive be maintained in operating condition, and the Santa Fe didn't need to maintain equipment that was not used. These units became the 5705 Class after completion of the 5800 Class SD45-2u remanufacturing in March 1988. ATSF 5705-5714 were acquired on a 15 year lease agreement and not remanufactured. The lease agreement was extended until they were retired in August 1992 and returned to HELM Leasing. The front face of the anti-climber was painted yellow sometime before being returned to lessor in 1992. The 5705, 5707-5709 went to Montana Rail Link as MRL 309-312 and 5710-5714 were leased to the Trona Railway as TRONA 3001-3005 (ATSF 5712,5713,5710,5714,5711). Trona returned the SD45-2s to Helm Leasing in April 2004 after which time they could be found working on the Union Pacific as HLCX 6408-6412 (ATSF 5710,5713,5712,5714,5711). Two were painted all-blue (HLCX 6409, HLCX 6411) while the others were left in the Trona paint scheme. The 5706 was retired from wreck damage in August 1980.

Santa Fe's third SD45-2 order was the next to last order for the standard SD45-2 as production ended four months later with an order for the Seaboard Coast Line.

ATSF "Bicentennials" 5700-5704 - 5 Units



Left and Below - ATSF 5700 is on the point position of the westbound 198 Train *Super C*. ATSF 5700 was the first SD45-2 to be painted in the "Bicentennial" scheme in February 1975; and was rebuilt to SD45-2B 5517 in January 1988. ATSF 5517 was on the BNSF roster as BNSF 7511 until retired in December 2002 and sold to NRE. Argentine, KS 10-25-75. - *Two Kodachromes Ralph Back collection*



Right - ATSF SD45-2 "Bicentennial" 5701 on the point position of the westbound 198 Train *Super C* waits at the Needles fuel rack as other SD45-2's in the consist get fueled. The 5701 was rebuilt to SD45-2B 5514 in November 1987 and was on the BNSF roster as BNSF 7508 until renumbered BNSF 6523 in December 2006. Needles, CA 3-12-75. - *Steve Patterson, Ralph Back collection*





Left - ATSF 5704 was the last SD45-2 to be painted in the "Bicentennial" scheme in January 1976; and was rebuilt to SD45-2u 5834 in September 1986. ATSF 5834 is on the BNSF roster as BNSF 6484. Chicago, IL 4-10-76. - *Kodachrome Ralph Back collection*

To celebrate the Nation's 200th birthday, the Santa Fe painted five SD45-2s, 5700-5704, with a red/white/blue "Bicentennial" Warbonnet paint scheme between 1975 and 1976. Suggested by a Santa Fe employee in August 1974, the official approval was granted two months later. Paint scheme: dark blue & white long hood with red & dark blue 30 degree stripes, red cab & short hood, dark blue long hood end, dark blue walkways & anticlimber, white handrails & handrail stanchions. Platinum Mist, a reflective silver paint, was used on the fuel tank, under frame details, end sheets & snowplow, and trucks. White Santa Fe cigar band herald on end of short hood and five-foot United States Presidential seals bolted on the handrails behind cab. Cab side numbers were white and white number also painted on rear of unit above the headlight. The road number was white on a black background on the number boards. "Stick-on" stars were applied to the red and blue stripes on the long hood; and the red areas behind the cab, below the cab, and on the sides of the short hood. The ACI label was mounted on a stanchion just above the air-reservoir tank. The rotary beacon on the top of the cab roof on the Conductor/Fireman's side was removed, and Xenon strobe-lights mounted on platforms on the slope of the cab roof were mounted on both sides, near the front, of the cab roof.

The five SD45-2s were painted in this order: 5700 2-21-75, 5701 3-5-75, 5703 4-18-75, 5702 5-12-75, and 5704 1-13-76. All were painted at the Santa Fe's San Bernardino shops. ATSF 5702 and ATSF 5704 accompanied the American Freedom Train at different times on its journey in Texas. The 5702 assisted ex-SP 4-8-4 4449 between Tecific and Milano, TX on February 10, 1976. The 5704 assisted ex-T&P 2-10-4 610 between Houston and Ft. Worth, TX on February 26, 1976. In 1977 the mechanical department was directed to repaint all the "Bicentennials". The 5701, 5703, 5700, and 5702 were all repainted, in that order, into the freight scheme during 1977 and the 5704 followed about a year later in 1978. Three of the five SD45-2s that were painted in the "Bicentennial" scheme (5700, 5701, and 5703) were remanufactured to SD45-2Bs in 1987-88.

Only once did all five "Bicentennial" SD45-2s assemble together, and that was for publicity photos at Barstow, CA on December 21, 1976. A number of these color photos can be seen in **Roster Source 11.**, "Santa Fe Heritage Volume Four" Bicentennial EMD SD45-2s pages 145-160.

SPSF SD45-2u "Kodachrome"s 7200-7229 and SD45-2 "Kodachrome"s Unrebuilt - 35 Units



Left - ATSF 5679 was one of six unrebuilt SD45-2s painted in the SPSF "Kodachrome" scheme (PTD. 3/86) retaining its original number and nose classification lights after repainting, and it now has a Sinclair-type radio antenna which replaced the can-type. The others were 5676, 5682, 5694, 5699 and 5709. The 5679 was remanufactured to SD45-2u 5861 at which time it was repainted in the blue/yellow Warbonnet scheme and lost the nose class lights. ATSF 5861 was wrecked in March 1993 and scrapped in May of that year. Note the black front face of the anti-climber, a characteristic of five of the six SPSF "Kodachrome" painted non-remanufactured SD45-2s. Phoenix, AZ 11-5-86. - *Kodachrome Ralph Back collection*

Right - ATSF 5709 was one of six unrebuilt SD45-2s painted in the SPSF "Kodachrome" scheme retaining its original number but the only one to lose the nose classification lights when repainted. The 5709 was the only SD45-2 from Santa Fe's third SD45-2 order to be painted in the SPSF "Kodachrome" scheme, and also the only one to have the yellow painted front face of the anti-climber as the other five had completely black painted anti-climbers. The 5709 is on the point of train 1-188-12 during a crew change at Wellington, KS on 7-12-86. ATSF 5709 went to Montana Rail Link as MRL 312. - *Kodachrome by Keel Middleton*



Left - Just released from remanufacturing, SPSF SD45-2u 7201 was remanufactured from SD45-2 5681 from the second order, and now has Sinclair radio antenna, and no nose classification lights. The 7201 has the dual Snyder and Buckeye fuel fillers common to all Santa Fe units rebuilt between January 1985 and March 1986. SPSF 7201 was renumbered to ATSF 5801 and was on the BNSF roster as BNSF 6451 until retired in December 2002 and sold to NRE. San Bernardino, CA 2-15-86. - *Kodachrome Ralph Back collection*

Right - Just released from remanufacturing, SPSF SD45-2u 7202 was remanufactured from SD45-2 5630 from the first order, and now has coupler lift bars with loop, Sinclair radio antenna, no nose classification lights. SPSF 7202 was renumbered to ATSF 5802 and was on the BNSF roster as BNSF 6452 until retired in December 2002 and sold to NRE. San Bernardino, CA 2-22-86. - Kodachrome Ralph Back collection



Left - SPSF SD45-2u 7211 was remanufactured in April 1986 from SD45-2 5685 from the second SD45-2 order, and now has Sinclair radio antenna, single fuel filler and no nose classification lights. The "home road" **SF** initials on the Conductor/Fireman's side were positioned toward the rear of the long hood with the **F** under the radiator grille. ATSF 7211 was renumbered ATSF 5811 and was on the BNSF roster as BNSF 6461 until retired in July 2004 and sold to NRE. Phoenix, AZ 6-26-86. - Kodachrome Ralph Back collection



Left - ATSF SD45-2u 5823 was renumbered from SPSF 7223 and was remanufactured from SD45-2 5695 in June 1986. The 5823 is on the BNSF roster as BNSF 6473. San Bernardino, CA 1-25-87. - Kodachrome by Mike Martin

Right - ATSF SD45-2u 5827 was renumbered from SPSF 7227 and was remanufactured from SD45-2 5697 in July 1986. This nice side view shows the "home road" **SF** initials on the engineer's side positioned toward the front of the long hood with the **F** just behind the curve of the yellow hyperbola. ATSF 5827 is on the BNSF roster as BNSF 6477. San Bernardino, CA 1-25-87. - Kodachrome by Mike Martin





Left - ATSF SD45-2u 5829 was renumbered from ATSF 7229 before being released from remanufacturing in August 1986, and was the last SD45-2u painted in the SPSF "Kodachrome" scheme. Behind ATSF 5829 is ATSF SD45-2u 5830 the first non-merger painted SD45-2u painted in the blue/yellow Warbonnet scheme. ATSF 5829 was remanufactured from SD45-2 5675 and was on the BNSF roster as BNSF 6479 until repowered in August 2008 as BNSF SD40-2R 7955. San Bernardino, CA 8-16-86. - *Kodachrome Stephen Devenish collection*

When the program to rebuild the SD45-2 fleet began in early 1986, the proposed merger with the Southern Pacific was being formulated to form the Southern Pacific and Santa Fe Railway, SPSF. The first 30 remanufactured SD45-2us were released in the SPSF 7200 number series instead of the 5800 series that was originally planned. They were painted in the red/yellow/black "Kodachrome" scheme that used Santa Fe's Warbonnet as a pattern with red replacing blue and the top third of the unit and roof painted black. The Santa Fe cigar band nose logo was replaced with a red nose band with three side stripes and the truncated SPSF road name used just the "home road" yellow **SF** initials on the long hood and front red nose band. The road number was painted red on both cab sides while the road number was white on a red background in the number boards. A small road number was painted red on the rear hood and centered just above the rear hood head-light. When the merger was denied in July 1986, units 7200-7229 were renumbered ATSF 5800-5829 beginning the first week of August 1986.

There were 35 SD45-2s painted in the "Kodachrome" **SF** (SPSF) scheme during 1986: un-remanufactured SD45-2s 5676, 5679, 5682, 5694, 5699 and 5709 and remanufactured SD45-2us 7200-7229/5800-5829. Five of six SPSF "Kodachrome" repainted SD45-2s 5676, 5679, 5682, 5694 and 5699 had the front anti-climber face painted black while the 5709 had the front anti-climber face painted yellow. The remanufactured SD45-2us 7200-7229 all had the front anti-climber face painted yellow. ATSF 5709 was the only SD45-2 painted in the SPSF "Kodachrome" scheme from Santa Fe's third SD45-2 order; and it lost its nose classification lights while getting the "Kodachrome" paint scheme. It was one of the lease units and not remanufactured. ATSF 5682 was remanufactured to 7218 and counted in 7200-7229 group. 7219 and 7221 were painted with complete SPSF carbody and nose lettering in anticipation of receiving a favorable ruling from the ICC to merge. The **SP** was removed from the units prior to being released for service after the merger was denied.

ATSF SD45-2u 5800-5868 Remanufactured - 69 Units



Left - ATSF SD45-2 5822 was remanufactured from SD45-2 5678 in June 1986 as SPSF SD45-2u 7222 painted in the SPSF "Kodachrome" scheme and has been repainted to the standard blue/yellow Warbonnet scheme. Since rebuilding the 5822 has had its headlight relocated from the top of the cab between the number boards to the top of the nose of the short hood. The 5822 was on the BNSF roster as BNSF SD45-2 6472 until repowered with a 3000hp engine in April 2009, and renumbered BNSF SD40-2R 1575 painted in the new **BNSF** Heritage scheme. Salina, KS 10-27-90. - Kodachrome Ralph Back collection.

Right - ATSF SD45-2 5825 has the "MKM" sublettering below the cab number which was applied to some SD45-2s beginning in 1994 to denote that the unit was maintained by Morrison-Knudsen under contract. This was not a reporting mark and only served to identify to shop personnel which locomotives were Morrison-Knudsen maintained. The 5825 was remanufactured during July 1986 from SD45-2 5665, and was originally numbered 7225 painted in the SPSF "Kodachrome" scheme. The 5825 was on the BNSF roster as BNSF 6475 but was sold to NRE and leased back to the BNSF as NREX 6475. Phoenix, AZ 9-18-94. - Kodachrome Ralph Back Collection



Left - ATSF SD45-2s 5834 and 5842 lead an eastbound COFC/double-stack near MP 133 on Edelstein Hill on Santa Fe's Illinois Division Galesburg Subdivision. The 5834 was remanufactured during September 1986 from SD45-2 5704 and the 5842 was remanufactured during October 1986 from SD45-2 5702. Both wore the Santa Fe's "Bicentennial" scheme during the mid-1970s. The 5834 is on the BNSF roster as BNSF 6484 while the 5842 was BNSF 6492 until repowered as an SD40-2R in September 2008 and renumbered BNSF 1571. Edelstein, IL 10-5-88. - Photo by Ralph Back

Right - ATSF SD45-2 5828, with "MKM" sublettering, and ATSF GP60M 101 lead an eastbound manifest train on Santa Fe's New Mexico Division Clovis Subdivision at Kayser, NM on 10-3-95. The 5828 has ditch lights, and is on the BNSF roster as BNSF 6478. - *Photo by Ralph Back*



Sixty-nine ATSF SD45-2 units were remanufactured in kind to SD45-2us by the Santa Fe at the San Bernardino, CA shops from February 1986 to March 1988. The "u" upgrade locomotive designation was dropped in the late 1980s. During the remanufacturing process the can-type radio antenna was replaced with Sinclair type with the radio antenna "table" ground plane moved and centered over the inertial air filter. A second small antenna platform was added behind the cab roof on Engineer's side fitted with a Sinclair "Excalibur" antenna for the End of Train Device (ETD). All units were equipped with cab air-conditioners, rotary beacons, reflective tape on the grab irons and steps, and "break-away" handrail stanchions on both ends of the locomotive. The first nine, 7200-7208 renumbered 5800-5808, had dual Snyder/Buckeye fuel fillers.

In 1986, the FRA issued a regulation that required all intact equipment on railroad locomotives be maintained in operating condition. By this time many railroads had discontinued use of classification lights and many were inoperable. The FRA regulation required that if classification lights were installed on locomotives they had to be maintained in operating condition. Santa Fe's response was to remove the classification lights, and all remanufactured SD45-2us had them removed from the short hood and the openings plated before painting. Units remanufactured from the 5625-5661 first delivery with small tapered front anticlimber received coupler lift bars with loop, if the unit did not already have these by this time. The first thirty remanufactured units were numbered ATSF 7200-7229 and painted in the red/yellow/black "Kodachrome" scheme for the proposed SPSF merger 7200 number series. These 30 units were renumbered to ATSF 5800-5829 between August and December 1986 after merger denied with all repainted back to the blue/yellow Warbonnet scheme by January 1991. Beginning with number 5830 the remaining SD45-2 remanufactured units were numbered 5830-5868 and painted in the blue/yellow Warbonnet scheme with silver painted trucks. Starting in 1988 the headlights on many 5800 Class SD45-2s were relocated from the cab top between the number boards to the top of the nose of the short hood.

The final appearance of Santa Fe's SD45-2 fleet shows the headlight relocated from the location between the numbers boards to the nose of the short hood, the horn relocated from the top of the cab to the long hood between the dynamic brake fans and radiator fans, ditch lights added on the front of the walkway, and removal of all rotary beacons.

Right - ATSF SD45-2 5855 was an experimental repowering rebuilt with Caterpillar Model 3612 4250-hp engine in July 1987 (SD CAT). This experiment was not repeated. The 5855 was sold to Morrison-Knudsen in 1993 then shipped to the Utah Railway as UTAH 9012 in August 1993. In July 1995, UTAH 9012 was returned to Morrison-Knudsen for engine work. The Caterpillar engine was removed and a standard 20 cylinder EMD engine rated at 3200 horsepower was installed in February 1996. The 9012 returned to service on Utah Railway until the lease expired in September 2001. See **Roster Source 14**. UtahRails.net for additional information.



UTAH SD45-2 9012 Provo, UT - Kodachrome Ralph Back Collection

ATSF SD45-2B 5510-5517 Remanufactured - 8 Units



Left - ATSF 5510 was the first SD45-2B remanufactured in September 1987, and was originally ATSF SD45-2 5651. The 5510 differs from the seven other SD45-2Bs as its dynamic brake grid remained in the standard location over the engine room - the only SD45-2B remanufactured this way. The 5510 also was the only SD45-2B to have the external battery box and air brake equipment in its original location as the 5511-5517 had these components relocated to inside the short hood. ATSF 5510 was renumbered BNSF 7504 and is still on the BNSF roster but was renumbered BNSF 6520 in December 2006. Phoenix, AZ 3-22-88. - *Kodachrome Ralph Back collection*

Right - ATSF SD45-2B 5511, originally SD45-2 5676, was the first SD45-2B remanufactured with the dynamic brakes on the front of the unit where the cab used to be, and has the yellow Santa Fe cross herald on the designated front. Notice the flat walkways on the entire length of the hood; a result of relocating the battery box and air brake equipment to inside the short hood. The 5511 was on the BNSF roster as BNSF 7505 until renumbered 6521 in November 2006. Phoenix, AZ 5-12-88. - *Kodachrome Ralph Back collection*



Left - Fresh from remanufacturing, ATSF SD45-2B 5512 was remanufactured from ATSF SD45-2 5703 one of the Santa Fe SD45-2s that wore the "Bicentennial" paint scheme. The 5512 has the yellow Santa Fe cross herald on the designated front, and was on the BNSF roster as BNSF 7506 until renumbered 6522 in November 2006. San Bernardino Shops, CA 10-87. - *Kodachrome by Mike Martin*

Right - ATSF SD45-2B 5515, originally SD45-2 5633 from Santa Fe's first SD45-2 order, was one of two SD45-2Bs remanufactured with a medium width front anti-climber that replaced the original small tapered anti-climber. The 5515 has the blue Santa Fe cross herald on the designated front, was released from remanufacturing in December 1987 and was on the BNSF roster as BNSF 7509 until retired in December 2002. Clovis, NM 3-88. - *Kodachrome Ralph Back collection*





Left - ATSF 5517 was the last SD45-2B remanufactured in January 1988, and was originally ATSF SD45-2 5700 - the first Santa Fe SD45-2 to wear the "Bicentennial" paint scheme. The 5517 has the dark blue Santa Fe cross herald on the designated front. ATSF 5517 was renumbered BNSF 7511, sold to NRE, and leased back to the BNSF as NREX 7511. Phoenix, AZ 3-20-88. - *Kodachrome Ralph Back collection*

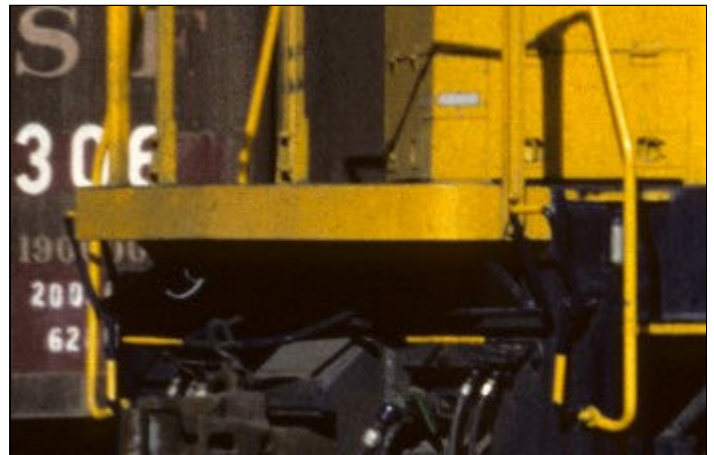
Right - ATSF SD45-2B 5512 has just been released from remanufacturing and two Santa Fe employees are touching-up its new paint job outside Santa Fe's San Bernardino Shops in October 1987. Note the full-width front anti-climber and the straight coupler lift bars. - *Kodachrome by Mike Martin*



ATSF SD45-2s 5651, 5676, 5703, 5626, 5701, 5633, 5684 and 5700 were remanufactured to eight SD45-2B cabled B units and renumbered 5510-5517 in the 5510 Class by the Santa Fe at the San Bernardino, CA shops between September 1987 and January 1988. The original cab and short low hood was replaced with a short high hood that was fabricated in the San Bernardino shops. All the SD45-2Bs were painted with blue hoods, yellow hood ends and yellow "Santa Fe" billboard lettering. The step tread edges and handhold railings were yellow, fuel tank black, end sheets below the anti-climber blue and trucks painted silver. Number boards were only present on the designated front nose of the locomotive, and the unit number was painted in yellow on the hood at about the same location as if the cab was still present. SD45-2Bs 5510-5513 had the yellow Santa Fe circle cross emblem on the designated front of the unit and SD45-2Bs 5514-5517 had the blue Santa Fe circle cross emblem on the designated front of the unit. ATSF SD45-2B 5512 later received the blue Santa Fe circle cross emblem.

Except for ATSF 5510 the remanufacturing resulted in relocation of the dynamic brakes, battery box and air brake equipment. ATSF SD45-2B 5510 had its dynamic brake grids and fans in the standard location over the engine room; and battery box and air brake equipment in the original location. ATSF SD45-2Bs 5511-5517 had the dynamics relocated over what had been the short hood and cab which allowed for cooler operation away from the prime mover reducing heat build-up and resultant failure of the dynamic brakes. EMD's newer 50-series had answered this problem in a similar way by moving the dynamic brake forward to a location just behind the cab. With the relocated dynamic brake housing, access doors were added to the top of the locomotive allowing the entire power assembly to be changed-out without having to remove the hood and the dynamic brake component. SD45-2Bs 5511-5517 had the battery box and air brake equipment relocated to inside the short hood which allowed for flat walkways on the sides of the locomotive. The ratchet-style handbrake remained in the original location, front hood fireman's side, on all the SD45-2Bs. All the Santa Fe SD45-2Bs were assigned to Barstow.

It's interesting to note that these eight SD45-2Bs had three different front anti-climber styles in the group. ATSF 5510 retained its as-built small tapered front anti-climber and drop-step. ATSF 5513 and 5515 which were remanufactured from SD45-2s 5626 and 5633 respectively from Santa Fe's first SD45-2 order had medium-width front anti-climbers, that were similar to the front anti-climbers on Santa Fe's third SD45-2 order, applied during remanufacturing that replaced the small tapered front anti-climber and drop-step. ATSF 5511, 5512, 5514, 5516 and 5517 all remanufactured from SD45-2s in the second Santa Fe SD45-2 order retained their as built full-width front anti-climbers. The front face of the anti-climbers on ATSF 5511-5517 were painted yellow. None of the 5800 Class SD45-2us remanufactured from SD45-2s in the first Santa Fe SD45-2 order received this anti-climber modification as they retained the small front anti-climber with drop-step. All the SD45-2Bs retained the rear hood walkway drop-step. SD45-2Bs 5510, 5513, and 5515 had coupler lift bars with loop on both ends of the locomotive while the other five had coupler lift bars with loop on the rear and the straight coupler lift bars on the front of the locomotive.



ATSF SD45-2B 5515 front medium-width anti-climber applied when remanufactured.

on the rear and the straight coupler lift bars on the front of the locomotive.

BNSF SD45-2/SD45-2B 6450-6516/7504-7511 Renumbering - 67/8 Units



Left - BNSF SD45-2 6450, originally ATSF SD45-2 5669/SPSF SD45-2u 7200/ATSF 5800, is typical of the BNSF renumbering patch; and has white step tread edges and white front and rear step handholds, a BNSF modification. The 6450 still has the Snyder and Buckeye dual fuel fillers - applied to the first nine Santa Fe SD45-2s remanufactured to SD45-2us. Riverbank, CA 2-8-03. - *Kodachrome Ralph Back collection*

Right - BNSF SD45-2 6460, originally ATSF SD45-2 5640/SPSF SD45-2u 7210/ATSF 5810, was one of two SD45-2s painted in the BNSF "basic Heritage" color scheme. The 6460 is still on the BNSF roster. Kansas City, KS. - Kodachrome Ralph Back collection



Left - BNSF SD45-2B 7506, originally ATSF SD45-2 5703/SD45-2B 5512, is typical of the BNSF SD45-2B renumbering patch. BNSF 7506 is shown in the surge fleet storage line, and is one of the last four SD45-2Bs still on the BNSF roster but now numbered 6522. Northtown, MN 8-22-02. - Photo by Eric Goodman

On December 31, 1996, the Atchison, Topeka and Santa Fe Railway Company and the Burlington Northern Railroad Company were merged into the Burlington Northern and Santa Fe Railway Company (BNSF). Today it's the BNSF Railway Company. The ATSF SD45-2 5800 Class (67 units - ATSF 5800-5854, 5856-5860, 5862-5868) was renumbered to the BNSF 6450-6516 number series. All renumbered BNSF with large blue numbers on cab sides and patched with **BNSF** logo below the cab number like BNSF 6450 pictured above. A small blue **BNSF** logo and unit number were applied to each side of the angled sides of the carbody rear-end just below the headlight with the old ATSF number above the headlight painted over. BNSF 6460/ATSF 5640/SPSF 7210/ATSF 5810 and BNSF 6481/ATSF 5662/5831 were painted in the BNSF "basic Heritage" scheme. BNSF 6481 was retired in December 2002, sold to NRE and leased back to the BNSF as NREX 6481. ATSF SD45-2B 5510 Class renumbered to BNSF 7504-7511 number series (8 units - none repainted). Most units were renumbered with large yellow unit number and **BNSF** logo patched over the old ATSF number on the hood sides near the front of the unit, while the 7505 and 7511 were renumbered with a large yellow patch panel with blue **BNSF** logo and unit number. Rear hood ends patched the same as the 6450-6516 SD45-2s.

These units have experienced a significant reduction as BNSF has sold some of them as they were sidelined with major component failures. National Railway Equipment (NRE) purchased and repaired some of them and leased them back to BNSF on a short term basis retaining the BNSF number with NREX reporting mark. Four (BNSF 6456/ATSF 5672/SPSF 7206/ATSF 5806, BNSF 6459/ATSF 5641/SPSF 7209/ATSF 5809, BNSF 6467/ATSF 5691/SPSF 7217/ATSF 5817, BNSF 6494/ATSF 5648/5844) sold to the Vitoria de Minas Railroad in Brazil. Most remaining BNSF SD45-2s and SD45-2Bs are maintained at Temple, Texas. The last four BNSF SD45-2Bs on the roster (7504-7506, 7508) were renumbered BNSF 6520-6523 during November-December 2006. Beginning in October 2007, BNSF began repowered some if the SD45-2s. See the following **BNSF SD40-2R 1565-1575 Repowering and Renumbering** section for details. See **Roster Sources 8., 9., 10., 12., 13., and 14.** for unit-by-unit renumbering and dispositions.

BNSF SD40-2R 1565-1575 Repowering and Renumbering - 11 Units



Above - Its Not an SD45-2 Anymore! Former BNSF SD45-2 6458 (nee-ATSF SD45-2 5677) repowered, renumbered, and repainted in BNSF's latest paint scheme. BNSF SD40-2R 7953 has a 16-645E3 prime mover and "40-series" radiator fans which replaced the SD45-2 20-645E3 and SD45-2 widely spaced radiator fans. BNSF 7953 was assigned BNSF 1568 in November 2008. Kansas City, MO 6-14-08. - *Photo by Dan Schueth.*

In 2007 BNSF began a program that replaces the 20-645E3 prime movers in BNSF SD45-2s with 16-645E3B prime movers dropping the horsepower rating from 3600 to 3000 giving the converted units SD40-2 specifications. The repowered units were given model designation SD40-2R (R=repowered with a 16-cyl engine). For administrative purposes, the SD40-2Rs are rated at 2999hp (it is still the same engine with no changes, except its computer data indicates a 1 HP change) and classed as SD39-2Rs to denote they are to be used in local and yard service. The 2999hp rating takes the locomotive out of the locomotive utilization calculation for road power. In October 2008 the SD40-2Rs were assigned a new number series beginning with BNSF 1565-onward. BNSF 7950-7956 are assigned BNSF 1565-1571 while BNSF 1572-1575 were given there 1565-series number from their inception. At this time eleven BNSF SD45-2s have been repowered, and the program is still moving forward.

BNSF 6485 was the first unit released in October 2007 as an SD45-2M but was designated an SD40-2R and renumbered to 7950 in November 2007. The first SD45-2 conversions, BNSF 7950 and 7953, had the radiator fans relocated to the rear and a portion of the radiators towards the front blanked off that were not needed. This gave the rear of the unit a "40-series" radiator fan configuration. A number of internal changes were made after repowering the first two that were applied to later conversions. Current conversions feature radiator fans in their original SD45-2 locations. Internally, a portion of the radiators are blanked off that aren't required for cooling the 3000hp engine with various internal changes made to facilitate proper air flow across the remaining active radiator cores. The radiator air intake grilles remain unchanged. All the SD40-2Rs are painted in the new **BNSF** Heritage scheme. Three separate companies did the repowerings.



Left - BNSF SD45-2 6458 was repowered as BNSF SD40-2R 6458 and was at Mid America Car in Kansas City, MO on March 6, 2008 waiting to be repainted and renumbered 7953. The 6458 was repowered with a 16-645E3B prime mover and received "40-series" radiator fan spacing at Metro East Industries in East St. Louis, IL in February 2008 then sent to MAC for painting and renumbering. - *Photo by Dan Schueth.*

Right - BNSF 7956 was originally ATSF SD45-2 5702 one of the five SD45-2s painted in the "Bicentennial" red/white/blue scheme in the mid-1970s. From that "Bicentennial" paint scheme leading Santa Fe's hot *Super C* freight trains in the 1970s, the former ATSF 5702 is now classified as a SD40-2R and assigned to local and yard service. The 7956 shown here at Galesburg, IL on September 21, 2008 was BNSF 7956 from 09/18/08 to 11/06/08 and then renumbered BNSF 1571. - *Photo by Thomas H. Parker*

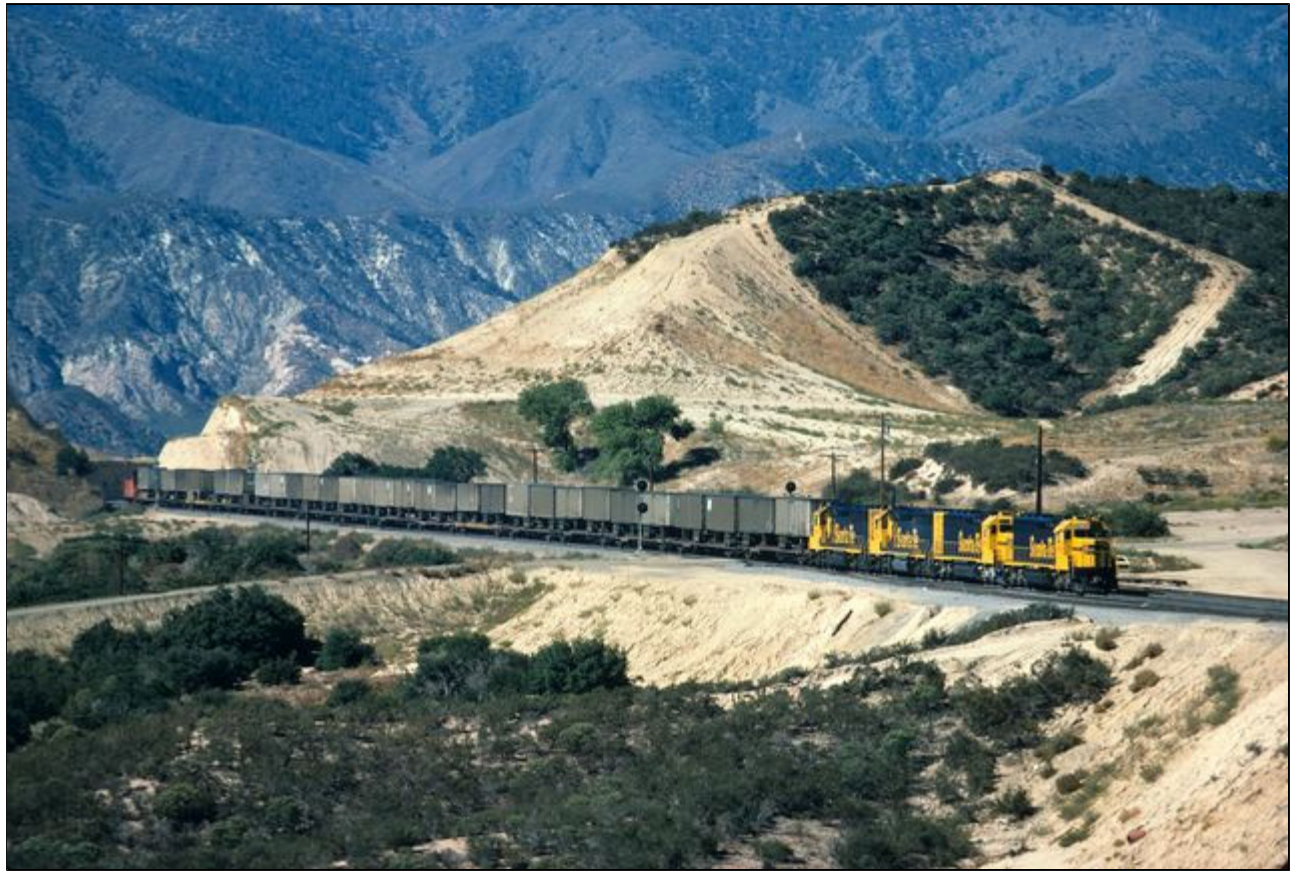


Along the Santa Fe Way... **Santa Fe SD45-2 Photo Gallery**



Above - ATSF "Bicentennial" SD45-2 5702, ATSF 5693, and two other SD45-2s lead the eastbound 891 Train *Super C* on the North Track approaching Summit on the Santa Fe's Los Angeles Division First District on December 13, 1975. Note that "Flash" of the 5702's cab roof Xenon strobe light. The 5702 was remanufactured to ATSF SD45-2u 5842 in October 1986 while the 5693 was remanufactured to ATSF SD45-2u 5868 in March 1988, the last SD45-2u. ATSF 5842 was renumbered BNSF 6492 in January 2000. In September 2008, BNSF SD45-2 6492 was repowered with a 3000hp 16-645E3B engine and renumbered BNSF 7956 with a model designation of SD40-2R and painted in the current *BNSF* heritage paint scheme. The former ATSF 5702 is now classified as a SD40-2R and assigned to local and yard service. The 7956 was renumbered BNSF 1571 in November 2008. - *Kodachrome by Ralph Back.*

I had an interesting experience getting this shot of ATSF "Bicentennial" 5702 leading the *Super C* and wrote about that experience with a photo article titled **In Search of the *Super C* and a "Bicentennial"** on Railpictures.net. To read about how I got this shot, click the link below or copy this link into your browser's address bar and go to the address: <http://www.railpictures.net/articles/article.php?id=11>



Above - Two years after the 1972 Summit line change ATSF SD45-2s 5709, 5710 and two unidentified SD45-2s lead the eastbound 891 Train *Super C* at Summit, CA on October 16, 1974 - LA Division First District. ATSF 5709 and 5710 were two of the leased units from the third Santa Fe SD45-2 order and were returned to HELM leasing in 1992. The 5709 would become the only SD45-2 from Santa Fe's third SD45-2 order to be painted in the SPSF "Kodachrome" scheme. The 5709 now works on the MRL as MRL 312, and the 5710 worked on the Trona Railway as TRONA 3003. - *Kodachrome by Ralph Back.*



Above - ATSF SD45-2us 7223, 7204, a SD45 and an unidentified SD45-2 lead the eastbound high-priority COFC/TOFC 991 Train at Edelstein, IL on 9-12-86; Illinois Division Chillicothe Subdivision. With the SPSF merger denied in July 1986, ATSF 7223 and 7204 have yet to be renumbered 5823 and 5804 respectively. SPSF 7223 was remanufactured from SD45-2 5695 in June 1986 and is on the BNSF roster as BNSF 6473. SPSF 7204 was remanufactured from SD45-2 5660 in March 1986 and was on the BNSF roster as BNSF 6454 until retired in July 2002. - Photo by Ralph Back.



Left - ATSF SD45-2 5818 leads an eastbound TOFC train at Edelman, IL on 4-30-92; Illinois Division Chillicothe Subdivision. The 5818 was remanufactured during May 1986 from SD45-2 5682, and was painted in the SPSF "Kodachrome" scheme as the 5682 before being remanufactured as SD45-2u 7218. The 5818 was on the BNSF roster as BNSF 6468 until retired in February 2005. BNSF 6468 was repowered in October 2008 and numbered BNSF SD40-2R 1572. - Photo by Ralph Back.

Roster Sources:

1. *"Santa Fe Motive Power", Joe McMillan, ©1985 McMillan Publications, Inc.*
2. *"SPSF Motive Power - 1986", Joseph W. Shine, ©1986 Four-Ways West Publications*
3. *"EMD SD45-2", Warren Calloway, Diesel Era Magazine, November/December 1990*
4. *"Santa Fe 1992 Annual", Kevin EuDaly, ©1992 Hyrail Productions*
5. *"Santa Fe 1993-1994 Annual", Kevin EuDaly, ©1994 Hyrail Productions*
6. *"The Other 'Kodachrome' Part 1 - Santa Fe", Diesel Era Staff, Diesel Era Magazine, November/December 2001*
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