

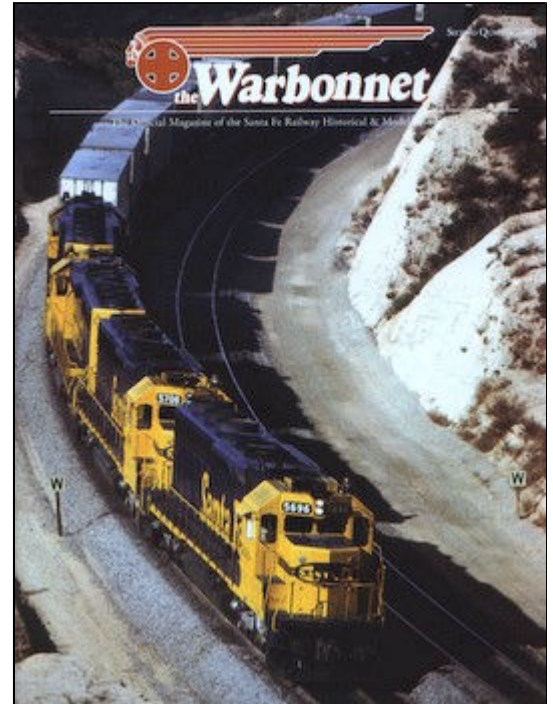
Santa Fe's SD45-2 Fleet

History, Roster, Detail, and Modeling Guide

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**.

WHATS NEW: Additional photos are included in this document that were not in the *Warbonnet* article.



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 main 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 high-priority premium service COFC/TOFC trains most notably the 198/891 *Super C* and 199/991 trains.

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
- 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

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	5,6/73	B,D,G,H,N,O
5625	5705-5714	74603-1 to 10	5/74	B,E,G,J,L,P
ATSF Bicentennials - 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	**	2-8/86	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#	Renumbered 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.** and **12.** 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; 5705-5714 delivered with silver painted trucks.

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 cabless 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 new-style fabricated radiator 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 (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 with HLCX reporting mark.

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 Heritage I.

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 Heritage I scheme. Including the BNSF Heritage I 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 - it shows the low-mounted class lights, outlines for the upper class lights and no rear hood number boards. 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 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 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 has been repainted and now has yellow step edges and yellow front anti-climber, "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 is on the BNSF roster as BNSF 6458. Kansas City, KS 9-4-78. - 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 main 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*

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 new-style fabricated radiator intake grilles which became standard on the EMD 'Dash 2' models. Chicago, IL 6-1-74. - *Joe McMillan, Ralph Back collection*



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, silver painted trucks, 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. All 10 units of this order delivered with a new style vertical front and rear step hand railings; and ATSF 5706, 5707, 5712-5714 (5 units) were delivered with EMD's new-style fabricated radiator 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, and cab roof mounted A/C. 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 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 (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 with HLCX reporting mark.

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. "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.

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 San Bernardino, 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 "Kodachromes" 7200-7229 and SD45-2s 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 a Sinclair-type radio antenna 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. Phoenix, AZ 11-5-86. - *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 - 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. 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 - SPSF SD45-2u 7211 was remanufactured from SD45-2 5685 from the second SD45-2 order, and now has Sinclair radio antenna 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 in October 2005. 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 is on the BNSF roster as BNSF 6479. 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. 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: 5676,5679,5682,5694,5699,5709,7200-7229/5800-5829. ATSF 5709 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 is on the BNSF roster as BNSF 6472. Salina, KS 10-27-90. - *Kodachrome Ralph Back collection.*

Right - ATSF SD45-2 5825 has the "MKM" sublettering below the cab number, ditch lights and has its horn above the cab. The "MKM" initials were applied to some SD45-2s, below the cab number, 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 and the 5842 is BNSF 6492. 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. ATSF 5828 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, and a second small antenna platform

was added fitted with a Sinclair "Excalibur" antenna the for the End of Train Device (ETD). All units were equipped with cab air-conditioners, rotary beacons, blanked over class lights, dual Snyder/Buckeye fuel fillers, reflective tape on the grab irons and steps, and "break-away" handrail stanchions on both ends of the locomotive. 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.

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 13. 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 5517 was the last SD45-2B remanufactured, and was originally ATSF 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 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. 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*



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. - *Kodachrome by Mike Martin*





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*

ATSF SD45-2s 5651,5676,5703,5626,5701,5633,5684,5700 were remanufactured to eight SD45-2B cabless 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 short high hoods were fabricated in the San Bernardino shops. 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 which would allow for cooler operation.

BNSF SD45-2/SD45-2B 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 edges and white front and rear step hand rails, a BNSF modification. Riverbank, CA 2-8-03. - *Kodachrome Ralph Back collection*

Right - BNSF SD45-2 6460, originally ATSF SD45-2 5640/SPSF SD45-2u 7210/ATSF5810, was one of two SD45-2s painted in the BNSF Heritage I 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/ATSF5669/SPSF7200/ATSF5800; and a small blue **BNSF** logo and unit number were applied to each side of the long hood end with the old ATSF number above the headlight painted over. BNSF6460/ATSF5640/7210/5810 and BNSF6481/ATSF5662/5831 were painted in the BNSF Heritage I 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 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 is phasing them out and selling them as they are sidelined with major component failures. National Railway Equipment (NRE) has been purchasing and repairing them and leasing most back to BNSF on a short term basis retaining the BNSF number with NREX reporting mark. Four (BNSF 6456/ATSF5672/SPSF7206/ATSF5806, BNSF 6459/ATSF5641/SPSF7209/ATSF5809, BNSF 6467/ATSF5691/SPSF7217/ATSF5817, BNSF 6494/ATSF5648/5844) 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. See **Roster Sources 8., 9., 10.** and **12.** for unit-by-unit renumbering and dispositions.

Modeling the Santa Fe SD45-2 - Athearn GENESIS Santa Fe SD45-2 in HO Scale

- Model Photos by Ralph Back.



Above and Below - Athearn has released the ATSF SD45-2 in the GENESIS Series. Pictured here are the ATSF 5692 in the blue/yellow Warbonnet scheme and ATSF 5701 in the red/white/blue "Bicentennial" scheme.





Above - Pictured here are front views of ATSF 5692 in the blue/yellow Warbonnet scheme and ATSF 5701 in the red/white/blue "Bicentennial" scheme. You can see the front anti-climbers and coupler lift bars with loop on both units which are incorrect for Santa Fe's second SD45-2 order.

Modeling the Santa Fe's SD45-2 in HO scale is made easy with the recent releases of the Athearn GENESIS SD45-2. Athearn has released the Santa Fe SD45-2 with road numbers in the first two Santa Fe SD45-2 orders. From the first order are ATSF 5631, 5648, and 5650 all w/o A/C painted in the standard Santa Fe blue/yellow pin-stripe freight scheme with yellow ends and small square Santa Fe blue/yellow circle-cross emblem centered on the end of short hood, small tapered front anti-climber with drop-step, black trucks, fuel tank, end sheets and snowplow. From the second order are ATSF 5692, 5698, and 5699 painted in the blue/yellow Warbonnet scheme with dark blue Santa Fe cigar-band herald centered on the end of short hood, silver painted trucks, all yellow hand railings and stanchions, blue anti-climber end-sheets and snowplow, and black fuel tank; and ATSF 5700 and 5701 painted in the red/white/blue "Bicentennial" scheme with the United States Presidential seals mounted on the hand rails behind the cab on both sides of the model, and equipped with Xenon strobe-lights on both sides of the cab roof.

Athearn has released these models both with and without DCC & sound - only models without DCC & sound are described here. The models are equipped with cab roof details cab sunshades, Leslie three-chime horn (low mounted), rotary beacon mounted on platform on the cab roof on Conductors side (only the beacon platform on the "Bicentennial" painted models), can-type radio antenna mounted on radio platform, and air conditioners if so equipped. Front details included vertical mounted headlight between the number boards, nose classification lights, snowplow, and single MU receptacle. Front and rear detail includes yellow painted grab irons, MU hoses, and coupler lift bars. Rear detail includes a horizontal mounted headlight, number board outlines (which Santa Fe's SD45-2s did not have), low-mounted classification lights (only the first SD45-2 order had these), outlines for upper classification lights, single walkway mounted MU receptacle, and drop-step.

The Athearn SD45-2 rear radiator area and widely spaced radiator fans nicely reproduce this SD45-2 distinguishing feature. The painting and lettering is very good. EMD-style "Santa Fe" billboard lettering is on the long hood except for the "Bicentennial" painted units which did not have the billboard lettering. The Athearn model of Santa Fe's 2nd SD45-2 order has 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 just like the prototype. The blue/yellow Warbonnet model also comes with silver-painted trucks - Santa Fe started to repaint the original black trucks on its first and second order SD45-2s in 1974.

The painting and lettering are excellent on the "Bicentennial" model. The red/white/blue colors look exactly right with white stars placed in the proper locations, and correct number. Silver painted trucks, fuel tank, under frame details, front and rear end-sheets, MU-cables and snowplow. White handrails and stanchions, and grab irons. Dark blue walkways, steps and anti-climber. White Santa Fe cigar band herald on end of short hood. The "Bicentennial" models have the Xenon strobe

lights on both sides of the cab roof and the rotary beacon has been removed but the platform is still present just like on the prototype. Gear ratio 59:18 (these were high-speed units) stenciled on the side frame behind the 'F' front designation letter. The five-foot Presidential seals are present on both sides on the hand rails behind the cab. The only discrepancy with the paint scheme is that the white cigar-band stripe does not wrap into the hand-brake recessed area and cover the top of the hand-brake housing on the conductor/fireman's side of the low nose. The Athearn Santa Fe SD45-2 blue/yellow Warbonnet painting is correct as the blue cigar band stripe stopped at the recessed hand-brake area and did not cover the top of the hand-brake housing.

The Athearn Santa Fe SD45-2 models are not perfect as a few details are incorrect for the as delivered Santa Fe SD45-2 prototype. Both Athearn Santa Fe SD45-2 releases have number boards on the rear hood. None of Santa Fe's SD45-2 releases had these. The Athearn models of Santa Fe's first SD45-2 order come with all blue hand railings and stanchions along the sides of the long hood, along the sides on the short hood, and on the front and rear walkways. The hand railings were yellow and stanchions blue as delivered on this group. The full-width hand railing on the front and rear end-sheets are painted black when they should be yellow. The model also does not have the louvers on the cab wall in front of the engineer. Photos of these units are on the Athearn Web site.

The Athearn blue/yellow Warbonnet and "Bicentennial" models of Santa Fe's second order SD45-2s have a number of details that are not correct. The model has the medium-width front anti-climber - it should have the full-width front anti-climber that extends the full width of the front end-sheet; the coupler lift bars have the loop (front and rear) rather than the straight bar - Santa Fe's 2nd SD45-2 order never had coupler lift bars with the loop on the front of the unit as the full-width anti-climber would not allow for this modification. Louvers are present on the side of the nose in front of the cab door on the conductor/fireman's side - only Santa Fe's first order had these louvers. The Athearn blue/yellow Warbonnet model also comes with yellow-painted step edges on the front and rear steps - as delivered, the step edges were blue. The rear of the unit has the low mounted classification lights which were only present on the Santa Fe's first SD45-2 order.

Athearn has announced the Santa Fe SD45-2 in the GENESIS series painted in the SPSF "Kodachrome" scheme for un-rebuilt SD45-2s road numbers 5679, 5682 and 5709 for September 2007 release.



Athearn GENESIS ATSF SD45-2 5679 - Athearn Photo

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 main track approaching Summit on the Santa Fe's Los Angeles Division First District. 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. Both are on the BNSF roster as BNSF 6492 and BNSF 6516 respectively. Summit, CA 12-13-75. - *Kodachrome by Ralph Back.*

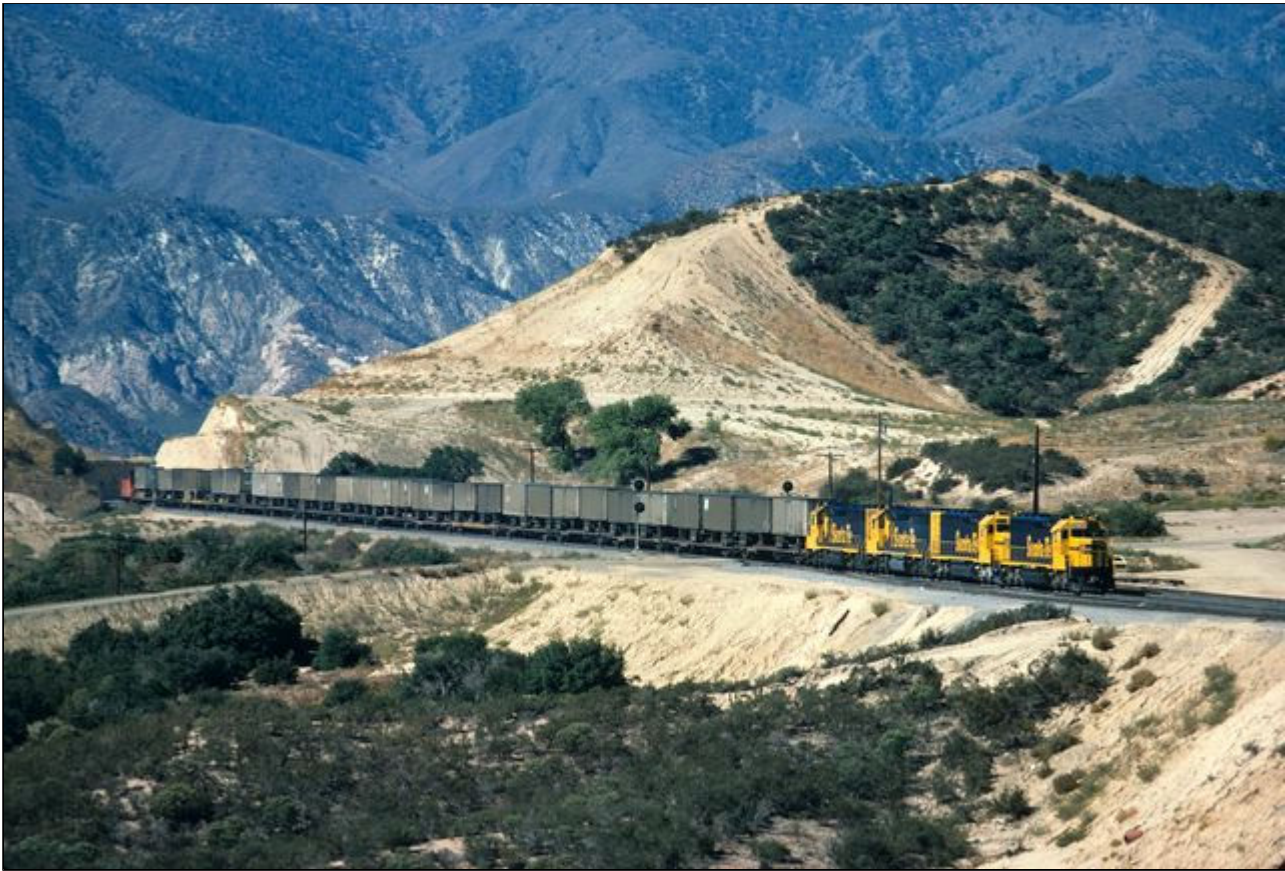
I had an interesting experience getting this shot of ATSF "Bicentennial" 5702 leading the *Super C* and wrote about that experience with a photo article titled **In Search of the *Super C* and a "Bicentennial"** on Railpictures.net. To read about how I got this shot, copy this link into your browser's address bar and go to the address:

<http://www.railpictures.net/articles/article.php?id=11>

You can also go to the Railpictures.net home page

<http://www.railpictures.net>

and click on Photo Articles in the '- Photo Database -' section on the left side of the page and find my article in the list.



Above - ATSF SD45-2 5709 leads the eastbound 891 Train *Super C* at Summit, CA 10-16-74; LA Division First District. ATSF 5709 was one of the leased units from the third Santa Fe SD45-2 order and was returned to HELM leasing in 1992. The 5709 now works on the MRL as MRL 312. - Kodachrome by Ralph Back.



Above - ATSF SD45-2 5818 leads an eastbound TOFC train at Edelstein, IL 4-30-92; Illinois Division Chillicothe Subdivision. The 5818 was remanufactured during May 1986 from SD45-2 5682, and was originally numbered 7218 painted in the SPSF "Kodachrome" scheme. The 5818 was on the BNSF roster as BNSF 6468 until retired in February 2005. - Photo by Ralph Back.

Roster Sources:

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2. *"SPSF Motive Power - 1986", Joseph W. Shine, ©1986 Four-Ways West Publications*
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5. *"Santa Fe 1993-1994 Annual", Kevin EuDaly, ©1994 Hyrail Productions*
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7. *"The Santa Fe Diesel Volume Two: 1960-1995", Dr. Cinthia Priest, ©1998 Paired Rail Railroad Publications, Ltd.*
8. *"Burlington Northern Santa Fe Railway 1998-1999 Motive Power Review", Robert C. Del Grosso, ©1999 Great Northern Pacific Publications*
9. *"Burlington Northern Santa Fe Railway 2004-2005 Locomotive Review", Robert C. Del Grosso, ©2005 Great Northern Pacific Publications*
10. *"BNSF Railway Company 2006 Locomotive Review and Locomotive Diagrams", Robert C. Del Grosso, ©2006 Great Northern Pacific Publications*
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12. *"BNSF Railway Company 2007 Locomotive Review and Diagrams II", Robert C. Del Grosso, ©2007 Great Northern Pacific Publications*
13. *UtahRails.net Web site for information on Utah Railway SD45-2 9012, ©2001-2007 Don Strack*

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