

EL PASO RETURNS TO
ITS PCC ROOTS.
2018 ERA TOUR OF
SOUTHERN GERMANY.

HEADLIGHTS 2018



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Cover: El Paso Streetcar 1506, formerly El
Paso City Lines 1506 and originally San
Diego Electric Railway 512, operates a test
trip on the "upper loop," coming down
the hill from the university area on North
Oregon Street at Nevada where traditional
streetcars, but not PCCs, once operated.
JOHN PAPPAS, SEPTEMBER 27, 2018

Right: Cars sporting two of the three El
Paso streetcar paint schemes in the new
maintenance facility on South Santa Fe.
JOHN PAPPAS, SEPTEMBER 26, 2018

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EL PASO RETURNS TO ITS PCC ROOTS JOHN PAPPAS

4

2018 ERA TOUR OF SOUTHERN GERMANY JOHN PAPPAS

32





EL PASO RETURNS TO ITS PCC ROOTS

By John
Pappas

ALL PHOTOGRAPHY
BY JOHN PAPPAS,
SEPTEMBER 2018,
EXCEPT AS NOTED

Left, the El Paso
Streetcar has at its
disposal a new, state-
of-the-art, two-track
shop with pits and
overhead walkways
for access to the vital
roof components.

The original El Paso
Streetcar logo, inset,
featured a stylized
front facing PCC. Later
versions feature a side
view of a PCC, and a
front facing PCC with
sparks, both in color.

You have to keep your calendar up-to-date these days or you'll likely miss the opening of a new light rail or streetcar line. Such is especially the case in the fall of 2018 where, as of this writing, Milwaukee opened their new system on November 2, with El Paso following a week later and Oklahoma City coming on-line in mid-December.

Of all the new lines, El Paso has the most potential to evoke the greatest emotional response due to its return to its former past in much of the route structure and even its traditional streetcars. How this familiar ghost of the past got put back together makes a fascinating story and speaks of the community nostalgia for its former system and the dedication of those who are diligently working to get the service back on the street.



Car 1506 is southbound on Kansas Street between 3rd and 4th Avenues one block east of Stanton, which streetcars traditionally used on their trip to the border. SUN CITY AERIAL VIDEO

by the original international streetcar line, but on different streets. Southbound toward the border, the line will use Kansas Street, which is one block east of the former Stanton alignment. Northbound, cars will serve South Santa Fe, one block west of the El Paso Street traditional route. This will allow the cars to serve the new Downtown Transit Center of Sun Metro, which is next to the MSF. The idea is to maximize coverage of this part of the city. The loops can be operated separately or combined, since the track arrangement allows for either.

In November and December 2015, six PCC

cars were sent to Brookville Equipment Company in Pennsylvania for a complete rebuilding. Because of the dry desert conditions, the car bodies contained a minimum of rust and were deemed decent candidates for rebuilding (see photos on pages 22–23). The remaining three of the nine city-owned cars were moved to the back lot of the Sun Metro bus garage on the east side of the city, ironically not very far from the edge of the airport where they spent almost 30 years.

A number of decisions were made as to how the cars would be upgraded. The existing Westinghouse 1432A motors were retained and completely rebuilt. The traditional PCC controller was replaced by a new IGBT propulsion package developed by Brookville and used in their Liberty LRV cars (the same package will be supplied to MBTA for upgrading Boston’s PCCs).

The updated El Paso PCC cars are no longer air-electrics. An electric braking system regenerates power back into the wires. PCCs have traditionally had dynamic braking as part of their propulsion design, and this has been retained. Air conditioning, now considered a must, was added with the condenser mounted on the roof toward the front of the car. Additional electrical gear was moved to the roof and added to the new skyline housing. Some of the equipment had to be moved to allow room for the wheelchair lift, which takes up the width of the car under the center door.

One controversial decision — for PCC purists, at least — was made to go with pantographs rather than retaining trolley poles. Other than changing the look of the roofline, which can take some getting used to, they have become a standard of efficiency for current collection and overhead

El Paso Number	San Diego Number	Color Scheme	Arrived from Brookville
1504	509	Two-Tone Green	July 15, 2018
1506	512	Green with Red Stripe	March 19, 2018
1511	518	Yellow-Green with Juarez tribute accents	(Due by end of 2018)
1512	519	Green with Red Stripe	April 29, 2018
1514	523	Two-Tone Green	September 25, 2018
1515	524	Yellow-Green	October 14, 2018



The back ladder track accesses the shop and the departure drive of the MSF. Trackage forms a loop, entering the building from Fourth Avenue.

simplification in the modern traction world.

Some traditional touches remain. Cars sport front and side destination signs featuring mylar curtains rather than LED displays. There has been a return to the more traditional seating arrangement of a mix of forward facing and side seats. Classic bullseye interior lights were used in place of the transit industry standard florescent or LED bulbs. The operator's dash and its array of gang switches will be familiar, although augmented with quite a few additional controls and electronic displays. The traditional gong is present, but an automotive horn is as well.

Testing of the cars and training of operators began in June 2018, late at night at first and then extending into the daytime. This time was also used as burn-in for the cars and adjustments as needed under warranty. On October 9, pre-revenue operation began, with cars running their revenue schedules without passengers.

Implementation

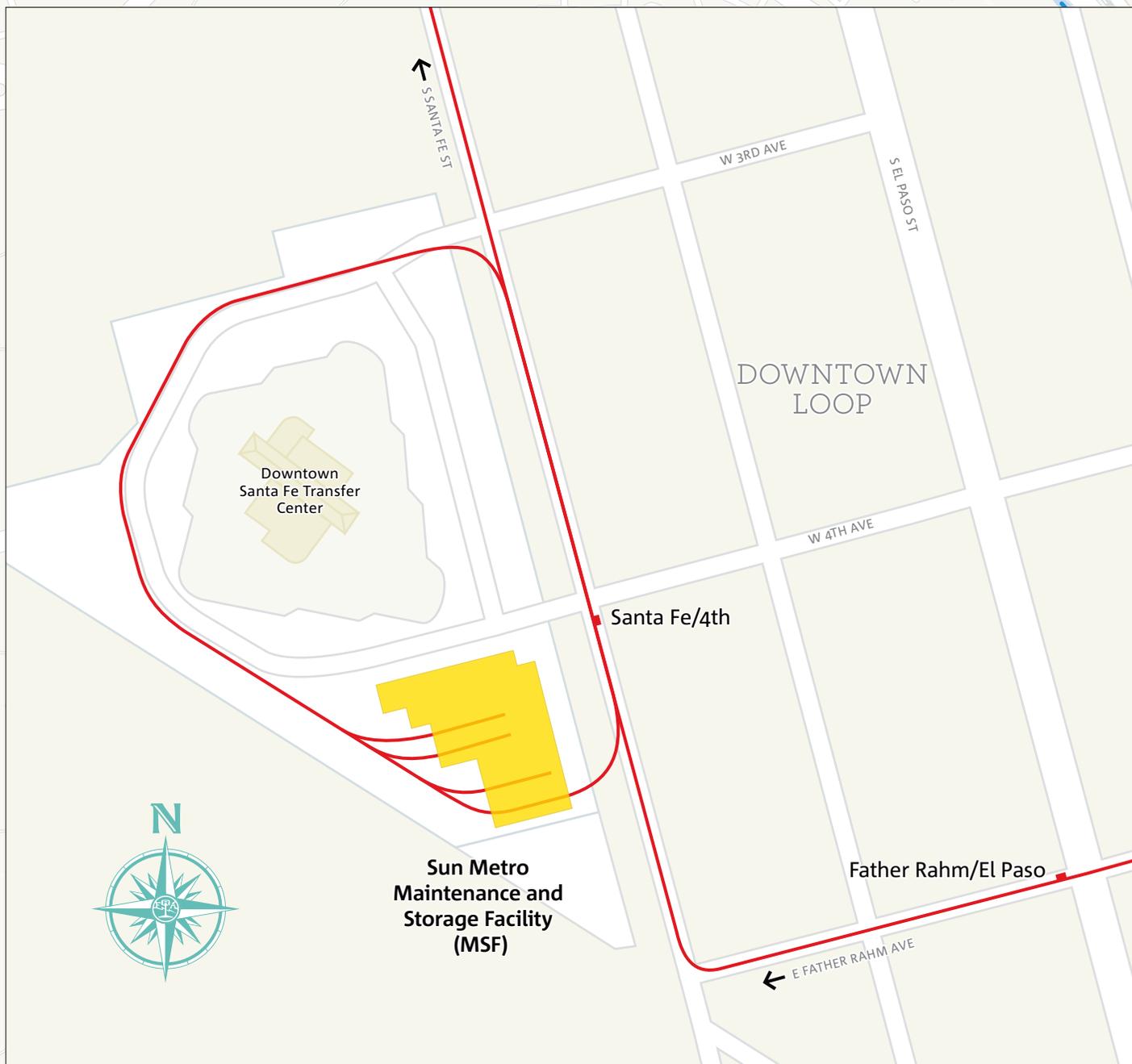
As if this writing, the system has been turned over to El Paso for operation. Sun Metro, the city's transit operator, will also operate and maintain the streetcars. Passenger service officially begins following ceremonies on Friday, November 9. Service will be free Fridays through Sundays through the end of 2018. At other times, a regular fare of \$1.50 (\$0.30 for seniors) will be charged. Hours of operation have been announced as Monday through Thursday 7 AM to 7 PM, Friday 7 AM to 1 AM, Saturday 9 AM to 1 AM, and Sundays and holidays 9 AM to 5 PM. To start with, headways will range between 15 and 25 minutes.

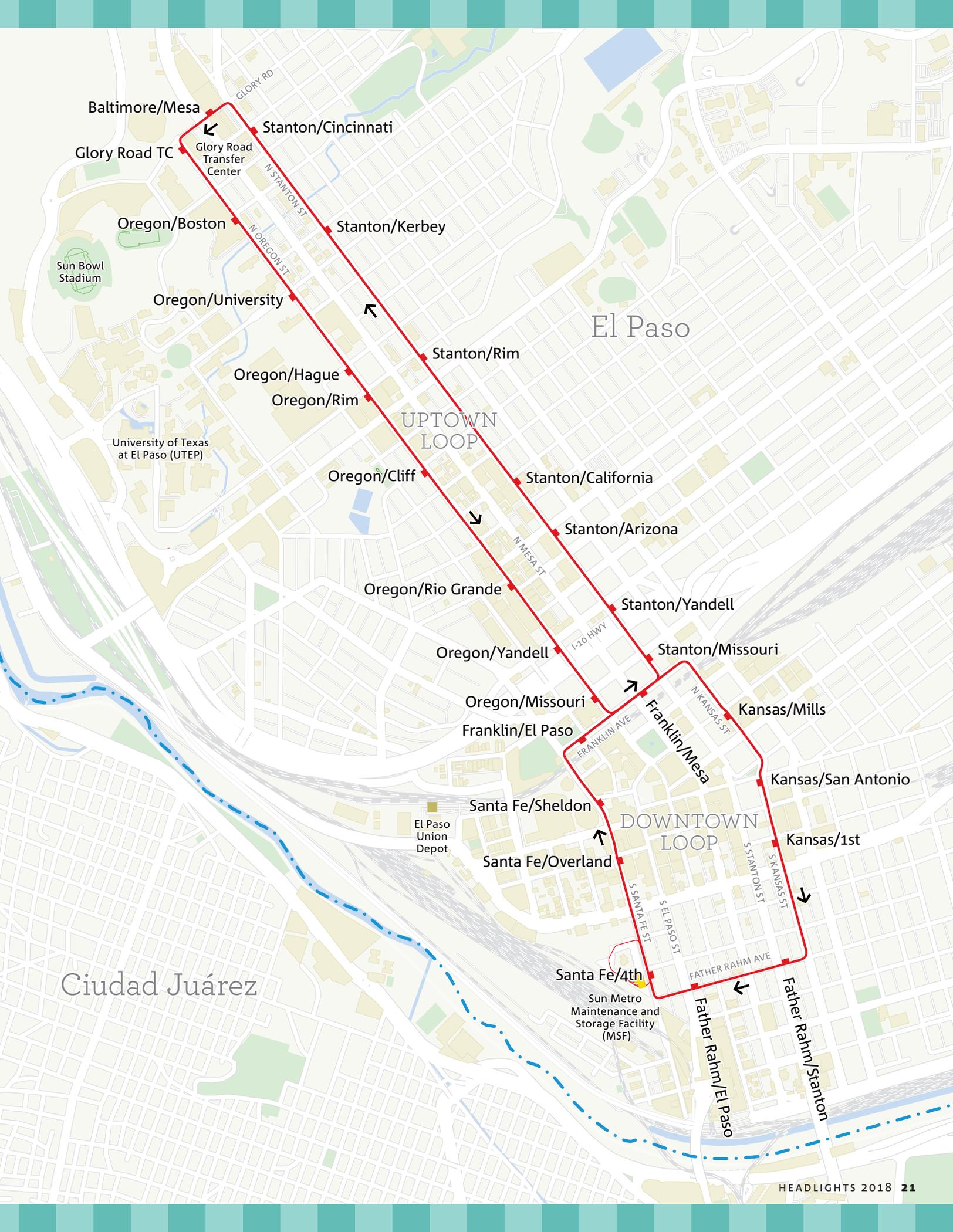
Acknowledgement

A special thank you to Carl C. Jackson, assistant director of streetcar operations for the City of El Paso, for his assistance in preparing this article.

EL PASO STREETCAR

MAP DESIGNED AND ILLUSTRATED BY SANDY CAMPBELL





Baltimore/Mesa

Stanton/Cincinnati

Glory Road TC

Glory Road Transfer Center

Oregon/Boston

Stanton/Kerbey

Sun Bowl Stadium

Oregon/University

Stanton/Rim

El Paso

Oregon/Hague

Oregon/Rim

UPTOWN LOOP

University of Texas at El Paso (UTEP)

Oregon/Cliff

Stanton/California

Stanton/Arizona

Oregon/Rio Grande

Stanton/Yandell

Oregon/Yandell

Stanton/Missouri

Oregon/Missouri

Franklin/El Paso

Franklin/Mesa

Kansas/Mills

Santa Fe/Sheldon

El Paso Union Depot

Santa Fe/Overland

DOWNTOWN LOOP

Kansas/San Antonio

Kansas/1st

Ciudad Juárez

Santa Fe/4th

Sun Metro Maintenance and Storage Facility (MSF)

Father Rahm/El Paso

Father Rahm/Stanton



The Ones that Got Left Behind

From the mid-1980s, nine PCC cars sat at the end of a runway at El Paso International Airport awaiting the time when the call would come to finally use them again. The new El Paso Streetcar project called for the use of six cars to fill schedules at peak times, plus spares. Therefore, six candidates were sent to Brookville Equipment Corporation for rebuilding. The three remaining cars were sent to a new Sun Metro bus garage just east of runway 27L for storage.



Interior shots of 1513, top right and above, show how those areas have weathered. The canvas roof finally disintegrated,

At left, crews begin the process of shipping six streetcars to Brookville

Cars 1508, 1513 and 1517 (the one on in red primer paint), bottom right and center, present an image of what the PCCs looked like for almost three decades of outside storage.

but the integrity of the remaining roof and side panels held up amazingly well. EL PASO STREETCAR, AUGUST 8, 2016

Equipment Corporation for rebuilding. RUBEN R. RAMIREZ, EL PASO TIMES

The El Paso climate is hot but dry, much like the area of Arizona which is favored for storage of commercial jet airliners. EL PASO STREETCAR, AUGUST 8, 2016





Kais Pizza Brücken-Restaurant

Heute 50% Rabatt auf Desserts

S7 Achern

AVG

924

HIGHLIGHTS FROM ERA'S 2018 TOUR OF SOUTHERN GERMANY

By John
Pappas

ALL PHOTOGRAPHY
BY JOHN PAPPAS
AND RON YEE

A three-story
pizza restaurant
offering half price
desserts and a busy
tram-train line
share space at
Kronenplatz on the
east side of central
Karlsruhe. RON YEE,
MAY 5, 2018

Our longtime members know that we have been planning and hosting an international tour every other year for some time. During the first 21 days in May, ERA members and guests found themselves on a tour of 16 places and attractions in parts of the southern German states of Baden-Württemberg and Bayern (Bavaria). Included were close-by cities of Strasbourg and Sarreguemines in France and Basel in Switzerland.

Following are the highlights in pictures of the scheduled events, which include both the transit and rail we rode and a bit of the sightseeing we did.

Karlsruhe

The original purpose of the tour was to introduce members to the European concept of tram-train operation, in which regular street-running trams travel to and from the city center and then transition onto the regular Deutsch-Bahn (DB) railway lines, including changing power supply on the fly from the nominal 750 v DC streetcar standard to DB's 15,000 v AC current. Karlsruhe was the original system that developed this operating practice and is by far the largest practitioner in a growing field of systems.



The city itself is largely unremarkable. It is not a tourist destination, although certainly not lacking architectural beauty and a pleasant surrounding area. Karlsruhe has a population of just over 300,000 (580,000 in the region). But it has a comprehensive 44-mile streetcar system, which blankets the city as well as the suburbs. Its tram-train operation runs far afield, covering such distant points as Heilbronn (55 miles) and Freudenstadt (45 miles). These were all originally DB regional lines which offered far less

comprehensive service and usually only the main Karlsruhe railway station as their city center stop. That was a true limitation, as Karlsruhe's main station (Hauptbahnhof in German...or simply HBF as it will be called henceforth) is not located close to the city center.

Michael Glikin, ERA's well-versed treasurer and trip planner, chose to minimize the traveling disruption caused by frequent hotel changes by choosing only three locations and planning day trips out from there. The effort was made easier because of the relatively short distances between venues in that part of Europe. Our first hotel was the Novotel in Karlsruhe, conveniently located on two streetcar lines.

Rail transit in Karlsruhe is divided between two operating entities. The Verkehrsbetrieb Karlsruhe (VBK) operates both the city network, which consists of eight local lines and one interurban (stadtbahn), the S2 and the Abtal-Verkehrs-Gesellschaft (AVG), which operates the remainder of the stadtbahn lines. They include everything that runs partially or completely on the DB, which are most of the S numbered lines, except S1, S2 and S11. VBK lines total 44 miles while AVG operates 75. The split in responsibility allows the AVG to focus on training crews in the intricacies of both tram and railway operation and handling the transition between railway and tramway. According to fan rosters, VBK stables 133 cars at two carhouses, while AVG has 199 cars operating out of three locations, two of them used by both operators.

As with all systems we visited, VBK has a comprehensive historic collection consisting of cars from most eras. Europeans particularly place an emphasis on their history and the tramway companies figure in that as well. It is much easier to charter a historic tram than it is in the U.S.

A sweeping view of Karlsruhe, left, looking west from the top of the Turmbergbahn in the eastern neighborhood of Durlach. It is not a city of high-rise development, but the substantial business community has many other resources, including a major exhibition center (Messe) near our hotel. JOHN PAPPAS, MAY 1, 2018

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An example of tram-train operation is this scene at Freudenstadt, right, the southern terminus of lines S8 and S81. AVG 912 is a Siemens GT8-100D/M-2S from 2005 (the D/M indicating dual mode), part of a large order of high floor interurban cars with higher-back seats. Next to it is a DB 3442 Class electric MU operating in Regional Express (RE) service, which can take riders further on to Offenburg. RON YEE, MAY 5, 2018







Karlsruhe's museum cars are housed in an older building adjacent to the Tullastrasse depot, far left, one of two facilities located on the east side. There are more than a dozen vehicles stored there including this Grossraumwagen (large capacity car, or what we know in North America as

a standard double-truck car). Type T4 number 139 was built by local builder Rastatt in 1958 and was designed to pull a double truck trailer (such as 439 behind it), giving it a decided passenger carrying advantage over the single truck motors and trailers prevalent at the time.

Two views of the interior of 139. This interior design was carried over to later articulated cars. Note the operator's controls. The "stick" on the left was the controller; push forward

to notch up the power and pull back to increasingly engage the brakes. It was an alternative to a wheel control arrangement on other systems' Duewags. JOHN PAPPAS PHOTOS, MAY 5, 2018



Stuttgart

Stuttgart is the capital of Baden-Württemberg state and the home of Mercedes Benz. The city sits in a bowl, ringed by hills on three sides giving it a picturesque look when seen from the nearby heights Stuttgart's population is listed as 615,000.

Stuttgarter Straßenbahn GmbH (SSB) is the operator of the trams, buses, a funicular and a cog railway line. They successfully completed one of the most wide-ranging public works schemes over a 30-year time span. They built an 81.3-mile light rail system while converting the former tramway from meter to standard gauge line-by-line.

They roster 204 cars housed in four depots. These consist of two-section, high-floor, light rail vehicles. They also host in a fifth depot one of the largest and most comprehensive tram museums in Germany. The cars in this museum are meter gauge, causing SSB to retain a considerable amount of dual-gauge trackage to allow room for a varied excursion route. ERA was fortunate to tour the museum during a time when it was closed to the public due to large crowds at the nearby fairgrounds. We then were treated to a ride over most of the remaining meter gauge using car 276 and trailer 1369, built in 1952 and 1950 respectively to a much older design.



Left, the newest cars were built by Stadler beginning in 2012 and feature a rounded front end. They are also true articulateds. Here 3513 and train exit the tunnel under the southeast hills at Bopser Station inbound

for the center city subway and eventual continuation north to Remseck am Neckar. Note the remaining pieces of meter gauge rail.

Dual-gauge track is in evidence in this photo,

above, of typical Stuttgart LRV 4102 at HBF station. The first several orders were built by Duewag beginning in 1985 and are, in most cases, single cars linked back to back. The cars came numbered from 3000 up, so 4102

signifies a mid-life rebuild. Some rebuilds included conversion into genuine articulateds with turntables and pass-through gangways, but that conversion has stalled due to funding shortages. RON YEE PHOTOS, MAY 9, 2018



The third mode of rail transportation in Stuttgart is represented by the Seilbahn (funicular) shown here in three scenes.

As with most European funiculars, each car has an operator and auxiliary power is drawn from overhead wires.

From an alley behind the lower station building, above, a broadside view is offered. JOHN PAPPAS, SEPTEMBER 14, 1994

Car 1 (top right) on its way up the hill from Südheimer Platz to the Waldfriedhof (cemetery). RON YEE, MAY 6, 2018

Car 2 (bottom right) is shown in the top, Waldfriedhof Station. JOHN PAPPAS, MAY 6, 2018





(Top) A view of the lower level of the extensive tram museum at Bad Cannstatt. It is one of the most comprehensive museums we visited during our tour. In the foreground from right, is 912 a DoT4 single

trucker from 1965 and GT4 artic 519 from 1959, an example of Stuttgart's most famous model. Behind the pillar is trailer 1511 of 1954 and single truck motor 15 from 1929. RON YEE, MAY 6, 2018



(Right) The upper level of the museum is more of a working storage area, with cars which

get out regularly on charters and historical runs. JOHN PAPPAS, MAY 6, 2018

(Middle) Museum car 276 and trailer 1369 were our chartered cars for our tour of the remaining meter gauge system. They are posed in this

attractive block in the Nordbahnhof neighborhood north of the center city near the Mittnachtstrasse stop. JOHN PAPPAS, MAY 6, 2018

(Bottom) Germany is down to only three trolleybus systems from a high of several dozen after World War II. Esslingen, a suburb of Stuttgart on the eastside of the urbanized area, runs three line examples of the mode. This new Solaris artic, featuring a popular Bus Rapid Transit (imitation tram-style)

front end design, is about to leave the central Esslingen stop to climb the south hill along the route formerly operated by the Esslingen-Nellingen-Denkendorf interurban discontinued in 1978. The trolleybuses were a promise to keep the route electrically operated. JOHN PAPPAS, MAY 9, 2018







Freiburg's newest cars are these CAF Urbos 100s, first delivered in 2015. Car 312, right, is seen passing the Freiburg Stadttheater on the way to a scheduled evening line-up at Bartoldsbrunnen. RON YEE, MAY 10, 2018

Close headways ensure lots of tram activity. Top left is the Johanneskirch stop on Lines 3 and 5 with three different fleet types visible. RON YEE, MAY 11, 2018



Freiburg has its rendition of a mountain cable car. The Schauinsland Bergbahn ropeway, bottom left, climbs from the valley floor at Horben to the 4,002-foot level of Schauinsland Mountain. This view looks down toward the valley and shows car 18 dating from the line's rebuild in 1987. Line 2 trams operate to the southern end of the urban area at Günterstal and connect with a bus that makes the 16-minute journey to the base station. RON YEE, MAY 11, 2018







On a sunny afternoon, Line 1 briefly divides after it leaves the eastern gate and rounds Schwabentorplatz on the way to the eastern terminus at Littenweiler. The scene affords a comparison of the Siemens car end treatments between “Combinio Basic” 271 of 1999 and “Combinio Advanced” 283 of 2004, which is reminiscent of the large display practices of Amsterdam.
JOHN PAPPAS, MAY 11, 2018





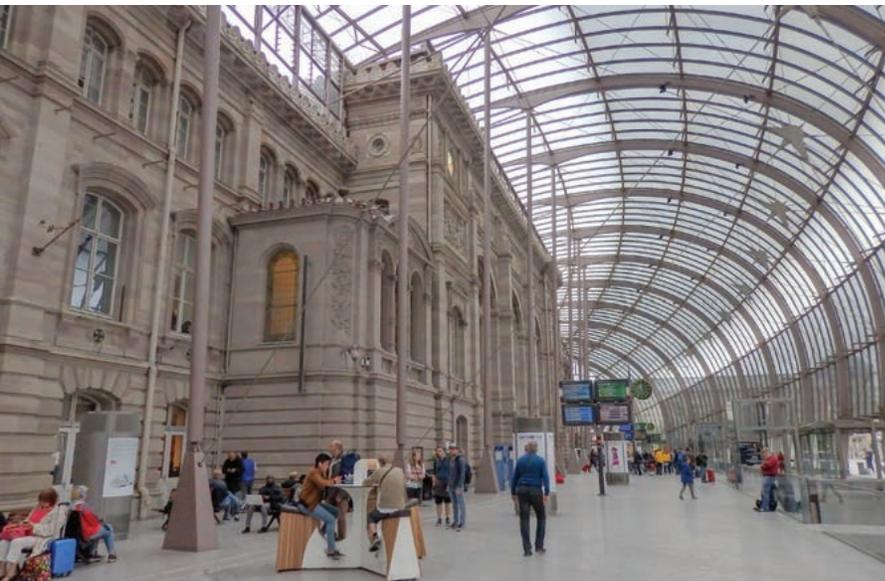


Strasbourg is mostly a surface, at-grade system. The exception is this 0.87-mile subway portion, far left, under the main railway station. The station is relatively deep, 56 feet below the surface,

requiring two banks of escalators. Car 2036 in Gare Centrale and dating from 2006 is of the Alstom Citadis 403 design that superseded the Eurotram. Strasbourg now has 53 of these. JOHN PAPPAS

Strasbourg helped originate the Eurotram design, top, which numbers among its features, nearly floor-to-ceiling side windows and a bubble-like, futuristic front end. The design was developed by Italian builder Socimi. Strasbourg received two orders of these totaling 53 cars. Socimi's concept eventually wound up with Bombardier, who

discontinued building the design. Knowing that, we gave particular attention to these cars, which Catherine Trautmann, the former mayor of Strasbourg and promoter of the tram system, believed would best show off the beauty of her city to its riders. Car 1037 is on Route F eastbound on Ave. de la Marseillaise. JOHN PAPPAS



Designers chose to encase the traditional architecture of Gare Centrale within a large glass roof, bottom. Elevators and escalators to

the light rail platforms are in the right background, while the entrance to the station and SNCF trains are at the left. RON YEE



Heading north to the University of Texas at El Paso on a test trip, 1506 tackles the steepest part of Stanton Street from River Avenue up to Schuster Avenue.
JOHN PAPPAS, SEPTEMBER 27, 2018