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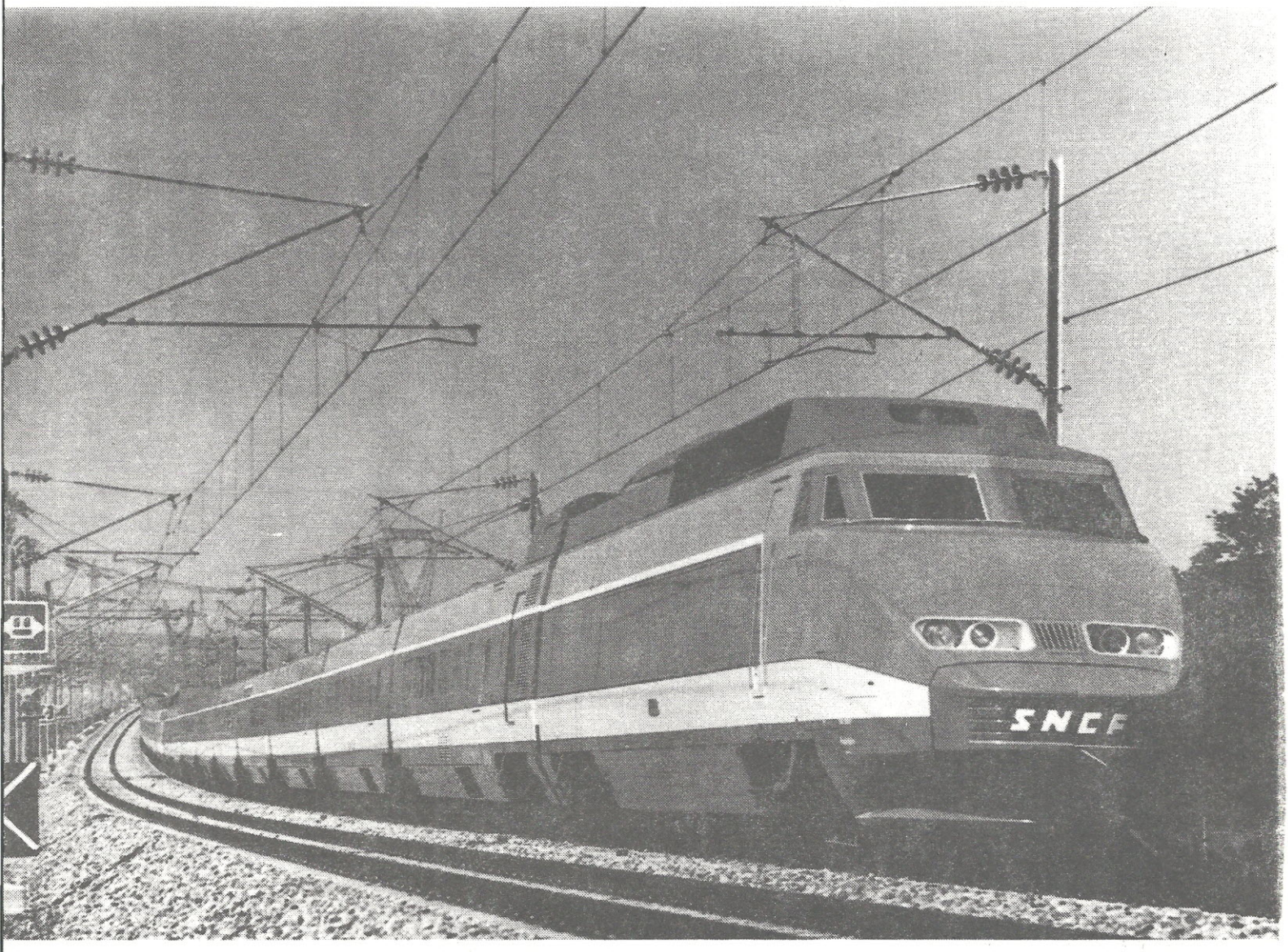

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BULLET TRAIN

Do you suppose any American citizen would spend five million dollars to bring a dream to far away Japan . . .?

Probably not.

But a Japanese industrialist is donating five million dollars to possibly bring a dream *here.*

The five million dollars is for a feasibility study that could lead to famous Japanese "Bullet Trains" speeding along at 150 miles an hour over selected American routes.

Engineers arrive in California in a few weeks to study a 130-mile corridor between Los Angeles and San Diego.

The president of Amtrak, Alan Boyd, tells me that 30 thousand passengers, traveling the route in 75 minutes could make it a profitable venture.

U.S. Congressman Henry Reuss of Milwaukee has an even more ambitious proposal. He would give Amtrak the right to acquire the right-of-way in 20 corridors to operate high-speed trains.

A bill Reuss has introduced specifically carves out a big role for Chicago . . . with routes running from our city to Cleveland . . . Detroit . . . St. Louis . . . Milwaukee and Minneapolis-St. Paul.

Boyd, Reuss and our visionary Japanese gentleman obviously take issue with the Administration's budget director, who four months ago said we don't need a nationwide rail system, pointing to interstate highways and the widespread availability of air travel.

Well, as you know, air travel is not at its best at the moment, with problems that may drag on for years . . . and ultimately bring on watershed changes.

And many highways are crumbling for lack of funds to keep them up.

Congressman Reuss argues that a new approach is needed to the transportation system . . .

Passenger trains in the Amtrak system operate at 44 miles an hour . . . not one hundred miles an hour or more as they do in Japan and shortly in France.

Our trains are slowed by traveling over tracks that also accommodate heavy, long freight trains, rendering the tracks unsuitable for high-speed passenger operations.

Then too, there are 26,000 grade crossings on routes used by Amtrak.

Congressman Reuss says automobiles made the 20's . . . television the 50's. Why not the railroads for the 80's to re-industrialize America?

Power the system with electricity and take care of the 30 per cent excess capacity of the utility industry.

They can produce the electricity from coal and save oil as they serve their new customer–the revitalized high-speed railroads of the country.

Visionary . . . romantic . . . perhaps.

But I keep thinking of that eminently hard-headed Japanese businessman I told you about.

He's willing to spend five million dollars–not of the Japanese government, but his very own–to do in America what other countries like his own have already done.

So all you railroad buffs . . . take heart. Let's broaden the perpetual war against potholes and the air traffic controllers.

Let's rebuild America . . . and start with the railroad!

–JOHN ANDERSON

(1980 independent Presidential candidate and former Illinois Congressman John Anderson does regular commentaries for Chicago's WLS-TV, from which the above was transcribed. –Editor)

A NOTE FROM THE STAFF: This edition, nominally dated September 15, is being published concurrently with the combined issue to complete a late summer's look at rail and transit news. It will be followed shortly by the regular 30 September edition, which will round out our schedule for the warm months. *TC* will revert to its normal thrice-monthly issue frequency with the 10 October edition. Once again, our apologies for the long delays–this has indeed been a busy summer!

SPECIAL REPORT

Train a Grande Vitesse

French President Francois Mitterrand drove his country's newest technological achievement–the world's fastest train–at speeds of up to 160 mph on its special inaugural run September 22. Mitterrand briefly took the controls from the assigned SNCF engineer as the special train sped northward from Lyon toward Montchanin.

The bullet-nosed *train a grande vitesse* (super high speed train) began yet another era in modern rail transportation by running the 300-mile trip in 2:32, 1:12 faster than a regular express.

Mitterrand, who had flown to Lyon to meet the train after its first run southbound, summed up the feelings of many when he said, "too long considered a means of transport of the past, the train now can take sweet revenge."

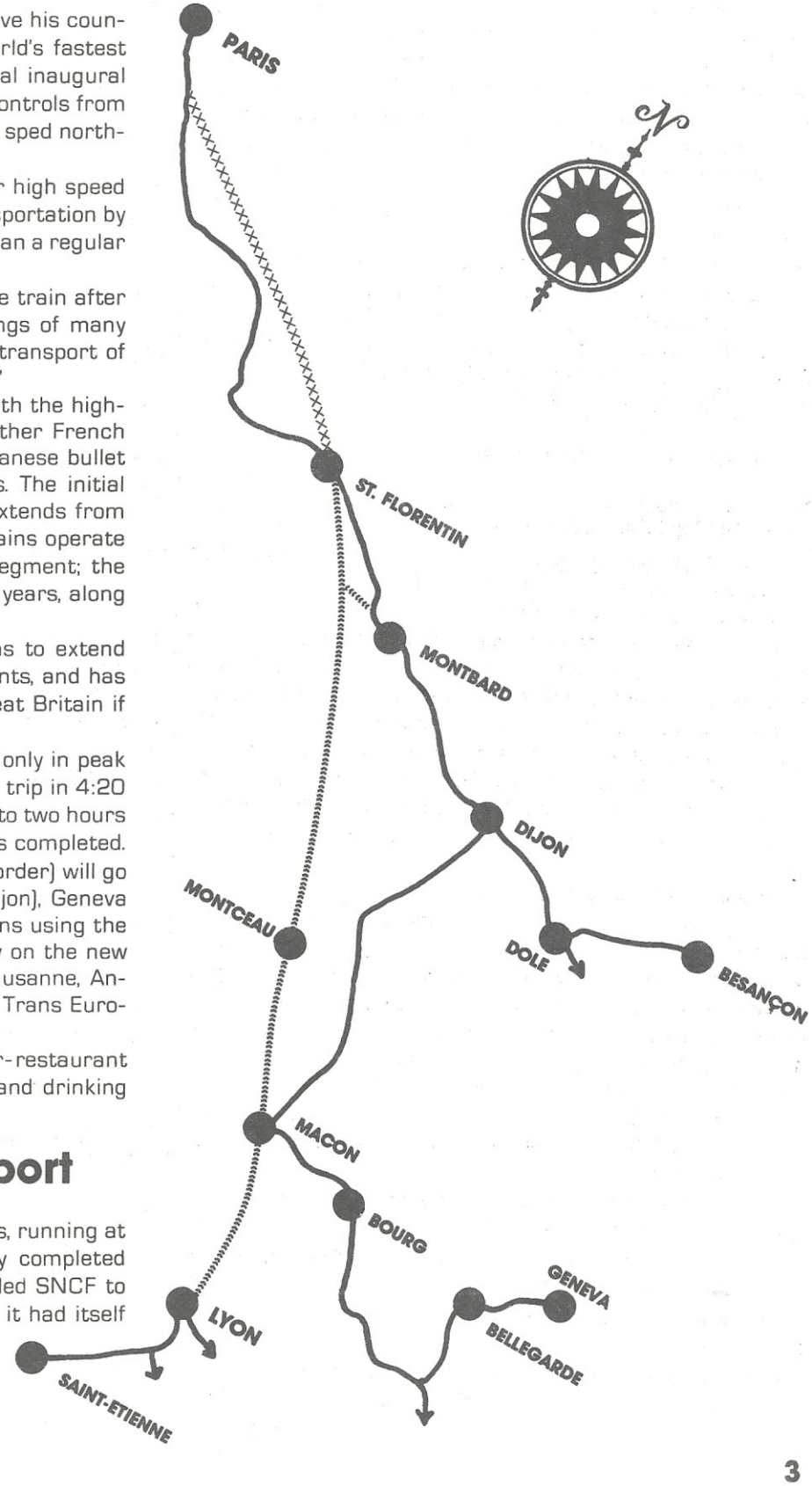
Regular TGV service begins September 27, with the high-speed trains running from Paris to Lyon and other French and Swiss points. The TGV differs from the Japanese bullet trains by its adaptability to existing rail routes. The initial stretch of dedicated high-speed right-of-way extends from St. Florentin southeast of Paris to Lyon; TGV trains operate over regular routes on either end of the first segment; the link to Paris is expected to be completed in two years, along an entirely new alignment.

Mitterrand has directed SNCF to begin plans to extend TGV service to Bordeaux and other western points, and has proposed similar service to Belgium–and to Great Britain if the English Channel tunnel project is revived.

For a surcharge of only 20 percent (and that only in peak hours) Geneva-bound passengers can make the trip in 4:20 (3:40 in two years); the Paris-Lyon run will drop to two hours even in 1983 when the Paris-St. Florentin link is completed.

Some 20-odd train sets (a total of 87 are on order) will go into service September 27, to Besancon (via Dijon), Geneva (via Macon) and St. Etienne (via Lyon). Other runs using the new equipment (and operating at least partially on the new right-of-way) will eventually serve Marseille, Lausanne, Annecy and Grenoble, as a sort of new-generation Trans European Express.

Meals will be served at the seats or in a bar-restaurant car; inaugural riders had no trouble standing and drinking while the train was going more than 150 mph.



A New Era in Rail Transport

On February 26, 1981, one of the TGV sets, running at 380 km/h (237.5 mph) on one of the already completed sections of the new Paris-Southeast line, enabled SNCF to break the unchallenged world rail speed record it had itself

established 26 years ago. In March 1955 locomotives BB 9004 and CC 7107, hauling a three-car test train, had reached 331 km/h (205 mph).

This technical achievement–remarkable at the time–opened the way to new research, which was to give SNCF the potential to strengthen its competitive position in the passenger transport market. No immediate commercial applications were possible, however, until 1967, when a high-speed train, the *Capitole,* began providing daily service on conventional tracks at 200 km/h (125 mph) between Paris and Toulouse. Four years later, the *Aquitaine* and the *Etendard* and, more recently, a Corail train (1st and 2nd class), the *Montaigne,* also went into service at this speed.

The record set on February 26 represents the success of a complete system with a harmonious combination of rolling stock, track and electric traction installations, foreshadowing an era of high-speed railway travel whose beginnings are now imminent. Running at 380 km/h, TGV train set 16 (identical in every respect to the standard construction unit) demonstrated SNCF's capability of handling future passenger traffic with absolute safety and comfort.

➡ The Paris-Lyon-Mediterranean line is one of the main areteries of the French national railway network on which the traffic (almost 40% of the country's population) has increased much faster than other SNCF lines.

However, on long sections of the present Paris-Dijon line there are only two tracks, where four are needed. These sections constitute virtual bottlenecks which, when traffic exceeds 260 trains per day, bring about the kind of saturation unsuitable to railway operation. In addition, the simultaneous movement of passenger and freight trains on the same tracks slows down the traffic and reduces its regularity.

A solution thus had to be found, bringing out the need

- to set up a new line dedicated exclusively to passenger service;
- and to design very modern rolling stock.

To ensure optimum project profitability and to provide the community with the best service, it was also found necessary

- to integrate the new line entirely within the existing network so as to enable high-speed trains to continue their route over present rights-of-way toward the principal cities of southeastern France, thereby offering restructured services without requiring costly additional capital investment;
- and to make the TGV accessible to all railway customers–second as well as first-class–in order to guarantee truly "equal rights" to speed.

With its conventional standard-gauge track, the new line will leave the present Paris-Lyon line at Combs-la-Ville (in the Paris suburban area) and rejoin the existing line at Sathonay in the northern Lyon suburbs. Its alignment, 390 km (244 miles) long, will shorten the Paris-Lyon distance by 90 km (56 miles).

Directly connected to the existing network, it will enable TGV trains to serve the heart of the cities and to continue their run beyond Dijon, Macon and Lyon, without losing any of the benefits of the time saved on the high-speed line. Thus Burgundy, Franche-Comte, Savoy, upper Savoy, Lausanne and Geneva will benefit equally with Lyon. Further south Saint-Etienne, Grenoble, the Rhone Valley, Marseille and Montpellier will also reap the benefits of a restructured service.

Specially designed for high speeds the new line, electrified with 25KV single-phase, 50-cycle current, is provided with a reinforced but nevertheless conventional infrastructure: all welded rail (60 kg/m), concrete ties, very thick ballast, high-speed special work, and curves of 4,000-meter radius. For obvious safety reasons, there are no grade crossings.

Thanks to their power–6,300 KW–and to a large proportion of driving axles, the TGV trains will be capable of negotiating at full speed very steep gradients (3.5%), similar to those encountered on mountainous lines. Accordingly, expensive tunnel construction has been avoided, reducing the cost of the right-of-way by almost 30%.

Train safety is assured by an entirely new system which makes no more use of conventional wayside signals. All information relative to train operation, transmitted through track circuits and picked up by sensors on the power cars, will be displayed in the driver's cab. Consequently, he will be informed at all times of the speed he will have to maintain, and his reactions will be checked by an automatic driver's alertness control devices. In addition, radio-telephone equipment will enable him to stay in constant communication with central traffic control.

➡ Construction work on the new line began in 1976 and is progressing on schedule. All work on the Saint-Florentin-Sathonay line was completed in time for the September service inaugural, and work on the northern section, scheduled to go into service in October 1983, has progressed substantially.

➡ On March 24, 1972, the prototype (TGV 001) left the factory; in a few months testing had progressed to the point of attaining the speed of 318 km/h (198.7 mph).

Orders for standard production trainsets were placed four years later, in 1976. The 87 units ordered constitute the most complete synthesis of the state of the art of modern electric railway technology.

In order to serve all the major links of of the existing network, the TGV trainsets are provided with electrical equipment enabling them to use 25 KV, single-phase, 50 Hz current, as well as 1500 VDC. Six trainsets will have additional equipment for 15 KV, single-phase, 16⅔ Hz current, enabling them to serve Lausanne.

In spite of their speed, they will exert only limited stress upon the track: the load borne by each axle does not exceed 17 tons and thus remains well below the values usually encountered on conventional electric locomotives (21 to 23 tons) or modern freight cars (20 tons).

Made up of two power cars and eight intermediate trailer cars, each train will have a seating capacity of 386 (275 in second-class, 111 in first). Two train sets can be coupled to offer a capacity of over 750.

Maximum speed in commercial service has been set at 260 km/h (162.5 mph), a limit which can be presently regarded as an economic optimum.

➡ As they are put into service, the TGV trainsets will provide direct service on four major lines:

- Paris-Burgundy, Franche-Comte, Switzerland;
- Paris-Rhone-Alpes;
- Paris-Savoy and Switzerland;
- and Paris-Rhone Valley, Provence and Languedoc.

The 38 trains in operation by the end of the year will serve not only Lyon, but also Dijon, Besancon, Macon, the urban community of le Creusot-Montceau-Montchanin, Saint-Etienne and Geneva, as well as Montpellier and Marseille.

By 1983, TGV service will be supplemented by trains going to the Savoy region (Chambery and Annecy) via Macon and Bourg, while Lausanne will be served by the beginning of 1982. On the other hand, it will be necessary to await the completion of electrification before service can be extended to Grenoble, the capital of Dauphine.

The TGV will not only update service to large cities; from its stations additional transfer connections will be possible, particularly by means of new Z2 electric transit railcars designed to run at 160 km/h (100 mph). During rush hours and weekends TGV service will be supplemented by conventional trains using the existing line.

➡ The use of the new line by many passengers who formerly used other means of transportation consuming more energy will produce significant savings in that area. The energy consumption of the TGV per seat-mile is in fact hardly more than that of conventional trains. On the Paris-Lyon run, each passenger will consume only the equivalent of 9 liters (2.4 gallons) of premium gasoline. Moreover, thanks to electric traction, the TGV will make extensive use of domestic energy sources, whether of fossil or nuclear origin.

The low interior noise level is an important comfort factor on the TGV. The trucks are located between the cars. Articulation bellows formerly used which generated noise and air currents have been replaced by annular connections which eliminate these disturbances entirely.

Summing up, considerable time savings, improved train frequency, fares similar to those charged on present lines, traveling comfort and safety, energy savings–these are just a few of the factors which bid fair to make the TGV a major transportation innovation as the 20th century draws to a close. Its technical and commercial innovation will certainly serve to enhance the reputation of the French railway industry in international markets.

[Our thanks to SNCF/Chicago for providing the material on which this article was based–along with the excellent cover photo. –Editor]

SNCF

RAIL

And in the U.S. . .

➡ After much hyperbole in the halls of Congress, Amtrak's budget survived at 85% of its former level, leaving most services intact. These are the discontinuances and adjustment effective in October (on the 1st or 25th, according to various criteria):

DISCONTINUANCES:

- SHENANDOAH (Washington-Cincinnati)
- CARDINAL (Washington-Cincinnati discontinued; Cincinnati-Chicago service maintained triweekly via new MIDWESTERNER train *(Deferred as of press time)*
- NORTH STAR (Chicago-St. Paul)
- PACIFIC INTERNATIONAL (Seattle-Vancouver)
- BEACON HILL (New Haven-Boston)
- WEEKEND BLUE RIDGE (Washington-Martinsburg)
- BLACKHAWK (Chicago-Dubuque)
- 2 of 4 Chicago-Milwaukee frequencies
- 5 of 12 New Haven-Springfield frequencies

1 of 10 New York-Boston frequencies
3 of 27 New York-Washington frequencies

ADJUSTMENTS

- INTERAMERICAN (Chicago-Texas)

Will operate triweekly south of St. Louis to Laredo.
San Antonio-Laredo and Temple-Houston legs dropped.
Will interchange through cars Chicago-California with the Sunset Limited.

- BROADWAY LIMITED (New York/Washington-Chicago)

Washington section will operate via Cumberland joining New York section at Pittsburgh.

- EMPIRE BUILDER (Chicago-Seattle-Portland)

Will operate daily Chicago-St. Paul.
Seattle section will operate via Wenatchee between Spokane and Seattle. Portland leg will be added and will operate from Spokane and Portland via Pasco.

- MIDWESTERNER (Chicago-Cincinnati)

Triweekly service initiated via Muncie *(Deferred)*

- CALIFORNIAN (Sacramento-Los Angeles)

Overnight state-supported service to be added.

All meal service is to be prepared at commissaries elsewhere, and microwaved on board; full-service kitchens will be eliminated on all trains where they are still in operation. In addition, there will be a 25 percent reduction of headquarters staff.

Also to be dropped is the Chicago-Peoria *Prairie Marksman* because of continuing losses. It began service in August 1980, and has cost the state of Illinois $230,000 in subsidies. The last train will leave Peoria October 4; Dubuque's last Amtrak run will depart October 1. Both are state-supported trains under the 403(b) program.

Front Range rail remains a compelling dream

By CINDY KAHN

INTERURBAN passenger railroad service along the Front Range in the next 20 years faces almost insurmountable odds.

Unless the railroads suddenly find it to their advantage to cooperate in the creation of a publicly subsidized system, unless the cost of fuel continues to skyrocket and does not result in additional automobile efficiencies, unless population growth along the Front Range increases for a sustained period of time at a rate above that which is currently projected, the use of railroads for mass transportation does not appear achievable in the foreseeable future.

Nevertheless, there are a number of things that can be done within 20 years that at least will not preclude the creation of passenger rail service after the year 2000 and might in fact push the concept farther along the track from dream to reality.

Federally subsidized Amtrak provides the major passenger service to a few cities along the Front Range, but that service is essentially incidental to its east-west interstate service from Chicago to California. The Southwest Limited provides daily service in both directions between Lamar, La Junta and Trinidad. The San Francisco Zephyr serves Akron, Fort Morgan and Denver on a Burlington Northern track, and from Denver to Greeley on Union Pacific trackage, once a day in each direction.

Although not strictly in the Front Range corridor, Denver & Rio Grande Western also provides service three times a week, in each direction between Denver and Salt Lake City via Granby, Glenwood Springs and Grand Junction. It also runs a ski train on weekends to Winter Park during the winter months. Both trains operate at a substantial deficit.

Both Amtrak trains operate at relatively convenient times in Colorado, but intrastate passenger service along these routes is almost nonexistent. In 1976, URS Co., a Denver transportation consulting firm, estimated the average number of passengers traveling between Denver and Akron was only 48 persons per month. Trinidad to Lamar was less than half that number.

While these numbers are appallingly low, an average of more than 600 persons a day embarked or disembarked in Denver in 1980 using the San Francisco Zephyr for long distance, out-of-state travel.

As part of the first statewide rail plan, prepared for the state Department of Highways and submitted to the Colorado General Assembly in January 1979, URS analyzed 27 potential rail passenger routes in Colorado.

Based on six criteria, which included population estimates, traffic loads and potential highway capacity, URS found that the top four corridors were north-south routes along the Front Range. In descending order, they were: Cheyenne to Denver via Boulder, Denver to La Junta, Denver to Trinidad and Cheyenne to Denver via Greeley.

It is clear that if any routes have potential for rail passenger service, the north-south forks from Greeley or Fort Collins, through Denver to Pueblo are the most likely.

The Greeley-Denver trackage is owned by Union Pacific (UP), the Fort Collins-Denver route by Colorado & Southern (C&S), a wholly owned subsidiary of Burlington Northern. The railroad between Denver and Pueblo is double-tracked, except for a 38-mile stretch from Palmer Lake to Crews, just south of Security, Colo. The single-track segment is owned by D&RGW, but the entire system from Denver to Pueblo is operated by both the Rio Grande and the Santa Fe under a joint agreement requiring that both railroads agree to any changes in the system.

THERE ARE a number of barriers to expansion of Front Range passenger service:

● *Opposition from the railroads:*

In their two major research efforts on passenger service, URS concluded that C&S and Santa Fe would actively oppose commuter service on their trackage and that D&RGW didn't think it was feasible. Although D&RGW recently signed an agreement with RTD, the state Department of Highways and Santa Fe railroad to sell its excess right-of-way from Denver to just south of Littleton in return for the state paying its costs to relocate onto the Santa Fe right-of-way, in fact the D&RGW appears to be adamant in its opposition to an extension of passenger service along its line.

I found no railroad executive who was sanguine about the prospect of passenger service at any time in the foreseeable future.

While not conclusive, opposition from the railroads would certainly make the transition to passenger service more difficult and push the time frame farther into the future.

By and large, railroad opposition stems from not wanting to make their freight service secondary to passenger schedules. Furthermore, particularly south of Denver, the lines are already used at 60 percent capacity, and use is expanding significantly each year.

Obviously, the arrangement would have to be made financially attractive to the railroads before they would agree to allow passenger service on their trackage or to operate such a system themselves.

● *High cost of upgrading trackage from Denver to Pueblo and of operating trains:*

In 1979, Amtrak and DOT completed a study which recommended that Southwest Limited and San Francisco Zephyr service from Chicago to California be merged and routed through Kansas City to La Junta and then north to Denver via Pueblo and Colorado Springs. The plan was abandoned at least in part because of the $8 million cost of upgrading the trackage from La Junta to Denver.

There is reason to suspect that the $8 million cost was significantly underestimated, even in 1978 dollars. Just to double track the segment from Palmer Lake to Crews would be incredibly expensive. In 1978, BN built 110 miles of new trackage in Wyoming. It was the most recent railroad construction in the United States and cost BN a total of $150 million, not including right-of-way purchase costs. Bruce Rockwell, a director of BN, estimates that it would cost almost $2 million per mile in 1980 dollars to lay new trackage on the 38-mile stretch between Palmer Lake and Crews.

If one looks only at operating costs, not capital costs, trains fare badly when compared to automobiles or buses, even with a federal subsidy under the DOT 403(b) plan. URS calculated that in 1978, a one-way passenger fare between Denver and Pueblo would be $5 for bus, $32 for air, $8.24 for auto. But for trains, the fare would be $23.80, a figure which represents only 40 percent of the actual cost, according to Amtrak estimates.

● *Trains, at current useage levels with existing technology, are not energy efficient:*

If the major impetus to using trains for public transportation is to find an energy-efficient alternative to the private automobile in times of skyrocketing gasoline prices and dwindling oil supplies, then trains are not the answer: Buses are.

In 1978, D&RGW did an in-house study comparing the average passenger miles per gallon of fuel (pmpg) of their railroad and a 40-passenger Trailways bus between Grand Junction and Salt Lake City. The railroad got 8.86 pmpg; the bus got 176.11 pmpg. The train was at 14 percent capacity and the bus at 53 percent capacity. Assuming maximum capacity of each transportation mode, the Rio Grande train would have attained 73 passenger miles per gallon of fuel, while the bus would have attained 336 passenger miles per gallon. An automobile getting 20 miles to the gallon, with one passenger in addition to the driver, would get 40 passenger miles per gallon.

Alvin Alm, in a 1980 report for the Aspen Institute, "Options for Fueling America's Transportation," painted the same gloomy picture for all forms of mass transit: "If mass transit systems run at less than full capacity during rush hours and practically empty during off-peak periods, for example, the fuel efficiency of mass transit can be worse than that of private automobiles."

The U.S. Department of Transportation's Amtrak study confirms these findings, except along the northeast rail corridor where population densities are so much greater that trains regularly achieve a high passenger mile per gallon ratio.

● *The Front Range doesn't have the population density to justify rail passenger service:*

The area that is most frequently compared with the Colorado Front Range is Seattle-Portland. The rail distances and the regional population are approximately the same. But of the 20 short-distance Amtrak lines in fiscal year 1980, Seattle-Portland-Vancouver ranked 15 — fifth worst in terms of avoidable loss per passenger mile. (Avoidable loss essentially consists of railroad operating costs less operating revenue.)

Although it is impossible to pull just the Seattle-Portland portion of the full Vancouver route out of the Amtrak statistics, the ratios are still relevant. Thus, for Seattle-Portland-Vancouver the avoidable costs per passenger mile were for fiscal year 1980 9 cents, while the number of passenger miles per train miles was only 88. The annual operating loss on the Seattle-Portland-Vancouver system in fiscal year 1980 was $2 million.

"But," people say, when informed about those numbers, "don't look at Seattle-Portland, look at the Los Angeles-San Diego system, which is much more relevant to Colorado's situation." In fiscal year 1980, Los Angeles-San Diego also lost $2 million in operating costs, but it reached the nation's highest average of 177 passenger miles per train mile for an avoidable loss per passenger mile of only 2 cents.

However, the population differences between the California system and the Colorado proposed route are enormous. According to the 1980 preliminary census figures, the Los Angeles-San Diego area had a total population of 9.3 million. If the growth rate along the Front Range continued unabated at the 1970-80 rate of 31 percent for the next 40 years (which in itself would be an extraordinary event), the five Front Range SMSAs (Colorado Springs, Denver-Boulder, Ft. Collins, Greeley and Pueblo) would still only have a population of 6.85 million people in the year 2020 — a long way behind California.

An argument has been made that if the Los Angeles-San Diego 9.3 million population can support seven trains a day in each direction, then surely the Colorado population of 1.3 million could support one train per day. Per train, the route populations in Colorado and California are exactly the same. It's an attractive argument, except that it seems likely that a larger population pool would be required to provide minimum scheduling flexibility. One train per day in each direction would probably not be adequate to entice passengers off buses.

It is also true that three American cities with lower SMSA population densities per square mile than Denver have viable fixed rail transit systems. Two more, Portland and San Diego, are building similar systems. One of those cities, Atlanta, uses a combination of light and heavy rail.

However, all of those cities have far higher population densities in the core areas served by fixed rail. So while there are factors other than population that affect public use of rail transportation, population numbers and density are a significant bottom-line consideration.

● *The Reagan administration seeks to substantially reduce government subsidies for Amtrak and eliminate all federal funding for new rail transit systems:*

While not determinative in a 20-year time frame, it is extremely significant that the current mood of government cost cutting extends to subsidies for mass transit. President Reagan's chief of the Office of Management and Budget, David Stockman, said recently that it was his intention to prevent DOT from undertaking any new mass transit programs. Stockman felt DOT should continue to provide funds to upgrade and repair existing systems, such as the MBTA in Boston, but that that should be the extent of its support.

Interurban passenger service is likely to come only as an extension of RTD's light rail concept

The severity of the Reagan cuts can be understood better by a comparison of the five-year projected federal subsidies for Amtrak proposed by both the Carter and the Reagan administrations. Although Amtrak's revenue has consistently increased since passenger service was inaugurated in 1972, the costs have risen at a substantially higher rate. The total deficit for fiscal year 1977 was $482.6 million. The deficit was predicted to rise to $727.2 million by fiscal year 1981.

A DISTURBING question arises in my mind from this analysis of the future of passenger trains in the Front Range.

Doesn't the argument against railroad passenger service apply almost equally to the feasibility of light rail along the Front Range and in metropolitan Denver? One obvious difference is that light rail operating on its own tracks presumably would not be saddled with outmoded labor contracts that have inflated the operating costs of passenger rail service for the nation's railroads, both public and private.

But, low population density, existing excess highway capacity outside of urban areas, high energy consumption per passenger mile, high construction costs all point to buses as the preferred mode of mass transit along the Front Range. For a person who has supported the concept of light rail this is an unsettling conclusion and requires further investigation as a public policy issue.

Nevertheless, I continue to believe that fixed rail commuter service at least in the metropolitan Denver area will become a necessity and should eventually tie into an interurban rail passenger service. Both systems will require integrated planning, if they are to become useful community assets.

Thus, the following proposals to encourage railroad passenger service apply equally to light rail.

AFTER READING a rather gloomy litany of barriers to using the railroads along the Front Range for passenger service, people may erroneously be led to believe that nothing can be done. Wrong.

It is more accurate to say that the range of possibilities is severely limited.

There are some things that can be done to encourage passenger service along the Front Range:

● *Oppose the expansion or extension of freeways along the Front Range.*

Many people think that by itself the price of gasoline will force people out of their cars and into public transportation. That is only partly true. Congestion is a more effective catalyst. When it takes longer to get from Denver to Colorado Springs or from Castle Rock to Broomfield by automobile because of traffic tieups, then and only then will reserved-lane bus, light rail or train be more attractive to the motoring public. Some transportation planners believe that day is less than five years off, at least in the metro Denver area.

● *Insist that a new regional airport be built on Rocky Mountain Arsenal land, not 20 or 40 miles east of Denver.*

This argument may appear somewhat contradictory on the surface, but this is the scenario. If a distant site for a new regional airport were to be selected, it will almost certainly include a light rail mass transit component. It would be poor regional planning if it didn't.

A major chunk of available transit funds, if not all, will be required for construction of a Denver-airport link. Using RTD's rule of thumb that an urban light rail system costs $13 million per mile and assuming an airport 30 miles from Denver, the airport transit link would cost approximately $390 million. That's more than double the cost for the entire first segment of light rail that RTD plans to build along its southeast corridor.

Thus, an airport 30 miles east of Denver would be served by a single-purpose rapid transit system that would only get people to and from the airport. The very nature of the potential site selected would mean that no major population centers would be served by the line. Clearly, the magnitude of the costs of constructing that airport link would ensure that the existing populations in the Front Range would be delayed even longer from obtaining mass transit service for themselves.

Finally, the Rocky Mountain Arsenal is already served by two railroads, the Union Pacific along the southern boundary of the arsenal and the Burlington Northern along the northwest. Both lines are directly linked with Union Station in downtown Denver and could with some negotiation between the railroads, RTD and the city become part of an urban rapid transit system.

● *Convert Union Station into an intermodal transfer center for all transportation systems in metro Denver and eliminate RTD's west mall terminal.*

RTD's insistence on creating a mall terminal two blocks east of the railroad station makes no sense at all. Several years ago former RTD executive director John Simpson explained that a separate northwest terminal was needed on the basis of expediency, that it would take too long to obtain the agreement of all six railroads that jointly own Union Station. On the surface, that is not an unreasonable argument and the same concern probably figured in the independent decision a few years earlier by Trailways and Greyhound to build their own bus terminal rather than use Union Station. However, that doesn't mean it was a good decision from a city planner's viewpoint.

Research indicates that RTD never contacted the railroads in the planning phase of the mall project and that the railroads are not the primary barrier to the use of Union Station as a transportation transfer center.

RTD's arguments against the use of Union Station in lieu of its proposed northwest terminal are twofold: First, that it would be uneconomic to rebuild Union Station so that RTD express buses could enter the station at viaduct rather than ground level. Assuming that is true when focusing only on buses and mall shuttles, it may not be the case when one takes into account an expanded transportation role for Union Station to include economic development of the air rights, moving the railroad yards, a transit link to the airport and light rail.

—by Ed Sutton

RTD's second argument against the use of Union Station is that it is on the perimeter of the downtown area. The vast majority of passengers disembarking at Union Station, whether from RTD buses or light rail would have to transfer to mall shuttles to continue to their ultimate destination downtown. According to one RTD calculation, by the year 2000 a RTD bus would have to arrive every seven seconds to accommodate the rush-hour crush.

The problem with this second argument is that it works equally well against the proposed northwest mall terminal. Located between Blake and Market Streets at the foot of 16th Street, it is for all practical purposes just as remote from downtown Denver as Union Station and will require just as many transfers.

It may mean that light rail when it becomes a reality should have stops in a number of key points throughout the downtown area, not just at Union Station. It would in effect bypass or duplicate the mall shuttle system. That doesn't make Union Station obsolete as a multimodal transfer center; it does eliminate the need for a northwest mall terminal.

It seems that sufficient questions have been raised to warrant another look at this whole issue. Washington, D.C., has been able to accommodate transit buses, Amtrak and a subway system, all within its own Union Station, to form a coherent transportation network.

Failure to explore these alternatives has a number of negative repercussions. One is proliferation of transportation transfer terminals in downtown Denver: two mall terminals, Union Station and a light rail terminal and a commercial bus terminal. This duplication would result in excess costs and additional disruption due to construction.

Finally, since research indicates that potential mass-transit passengers will travel by auto rather than endure multiple transfers, the failure to use Union Station as a multiple transfer point could result in fewer people being enticed out of their automobiles.

● *Encourage public-private partnership between the state and the railroads.*

This may be an obvious point, but it bears emphasizing particularly as it relates to financing rail passenger service. If coal continues to be a major component of the American energy mix, then the railroads along the Front Range face signficant costs within 10 years for upgrading and expanded track capacity to accommodate that growth.

In return for public participation in helping to pay for those costs, the railroads might become a little more flexible on the use of their right-of-way for passenger service, whether operated by the railroads or by RTD as a light rail commuter service.

An excellent example of mutually beneficial cooperation between the public and private sectors is the agreement recently signed by Denver Rio Grande, the Santa Fe Railroad, the state Department of Highways and the Regional Transportation District. D&RGW agreed to abandon its right-of-way along Santa Fe Drive. The state agreed to pay the costs of moving D&RGW to Santa Fe's right-of-way. The arrangement will allow the widening of Santa Fe Drive and provide a 50-foot-wide strip for RTD to utilize sometime in the future for an extension of its light rail system.

The two railroads benefit by having their tracks closer together. It significantly reduces their operating and future construction costs. State-local governments benefit by reducing their future costs for grade separations.

Turned the other way, however, it seems to me that the state should put no money into moving railroad yards, for example, until the railroads agree to concessions on passenger service. Even though 10 or 20 years could elapse between the completion of track upgrading and the commencement of passenger service, the commitment should be there from the beginning. Cooperation on the development of Union Station might be a good place to begin.

● *Abandoned railroad rights-of-way should revert to public domain rather than disappearing into private development.*

Although rail passenger service is still many years in the future, it would be impossible if the means for implementing service disappeared as trackage was abandoned. Of course, some formula for compensating the railroads would have to be worked out. But Denver is fortunate that the trackage along Buchtel Boulevard remained under Colorado and Southern ownership for all the years it was unused. Otherwise, it would not be available today for current RTD light rail plans.

If I were to predict a reasonable scenario for future passenger rail service along the Front Range — a foolhardy undertaking — I would probably suggest something similar to an idea of Dick Thomas, deputy executive director in charge of program management for RTD. Interurban passenger service along the Front Range is likely to come in the form of an extension of RTD's light rail concept. At least in the metropolitan Denver area, it will have to operate on its own exclusive right of way.

But perhaps south of Littleton to Pueblo, it could share Rio Grande and Santa Fe trackage. That's where the horse trading will have to begin. Electrification of the tracks would be enormously expensive but could be a mutually beneficial undertaking and might be a joint undertaking.

Perhaps railroad passenger service could be implemented incrementally, first as a commuter service, later as a truly high speed intercity mass transportation system.

With all these considerations, another alternative might be to run traditionally powered passenger trains on their own right-of-way in the metropolitan areas and share D&RGW and Santa Fe trackage south of Littleton. Electric light rail could then be allowed to operate in high population areas along Colfax Avenue or Broadway.

We ought not to give up on passenger rail service along the Front Range. For no matter how difficult to achieve, it remains a compelling dream.

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