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417 New Jersey Avenue, S.E., Washington, D.C. 20003
202-546-1550

OFFICERS: Orren Beaty, President; George Tyson, Secretary
Joseph F. Horning, Jr., Treasurer

STAFF: Ross Capon, Executive Director; Barry Williams
Assistant Director; Kim Tieger, Circulation Manager

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AMTRAK AND ENERGY

Amtrak has a vital role to play in helping the U.S. respond to our two energy crises—short-term and long-term. In the next several months, Amtrak could handle over 15% of the demand for intercity travel which the auto may be unable to meet due to shortages and high prices of gasoline. Over the next 15 to 20 years, adequate development of a national intercity rail

"Information which speaks to the energy potential of trains may confuse the issue. Our analysis deals with recent experience in the real world."

—Secretary of Transportation Brock Adams,
in a letter to the Congress, April 13

In other words, let's base policies for the future on a comparison of modern planes, trains, and buses, with obsolete trains.

passenger service could lead to direct savings alone of about 300,000 barrels of oil per day (3.7% of total U.S. consumption).

The Immediate Crisis. Due to a series of events triggered by the Iranian crisis, the international oil trade has been undergoing major changes. Because the U.S. imports such a high percentage of its oil (46% or 8.9 million barrels/day of total U.S. consumption of 19.3 million barrels/day in December), price and availability of gasoline has been seriously affected. Since January 1, the average price of a gallon of gasoline has jumped about 12%, from 67.99¢ to 76.22¢ (**The Washington Post**, Apr. 17), and many gas stations have reduced the number of hours they are open.

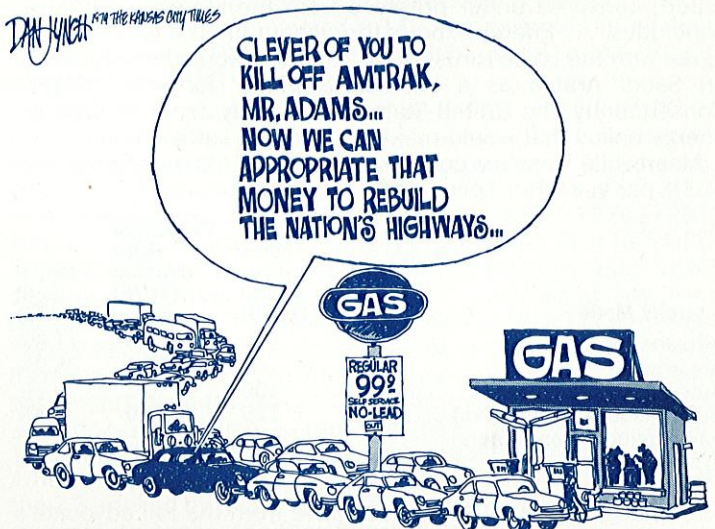
Amtrak ridership is at record levels, and the gasoline situation is probably a major reason. During the last energy crisis, from November 1973 to April 1974, Amtrak passenger-miles increased 46% compared with the same months one year earlier (DOT Environmental Impact Assessment of final plan, p. 2-13) and passenger trips rose by over 2 million (from Amtrak news releases).

Amtrak has been handling about 1% of intercity travel. According to the Commerce Department's 1977 National Transportation Survey, trips of 100 miles or more one-way accounted for 382.46 billion person-miles of travel, of which 3.87 billion were by rail.

It seems reasonable to suggest that Amtrak could absorb in the short term a 50% increase in travel, or 1.94 billion passenger-miles over the 1977 figures.

At the same time, auto (and non-commercial truck) travel may be forced down by 5%—to pick the percentage by which President Carter promised foreign leaders the U.S. would reduce its oil consumption. 1978 intercity auto travel (100 miles or more one-way) was about 247.5 billion person-miles. 5% of that is 12.4 billion. We suggested above Amtrak could absorb an increase of 1.94 billion passenger-miles, which is 15.6% of our

DAK HUNTER FROM THE KANSAS CITY TIMES



prospective automobile decline. Buses today carry 2.3% of intercity passenger miles, so a similar increase in bus ridership would absorb 35.9% of the automobile decline and the combined increased loadings on Amtrak and buses would absorb about half of the "exiled" auto traffic, a very substantial contribution.

(continued on p. 2)

RIDERSHIP UP SHARPLY

Amtrak ridership for the October, 1978-January, 1979 period is 6.6% above the same months one year earlier, and 2.9% above the same months two years earlier. The latter figure is significant because FY 1977 was Amtrak's best year ever—ridership then even surpassed levels set during the 1973-74 energy crisis.

If present trends continue, FY 1979 could be Amtrak's best year ever. Unfortunately, this goal may be blocked by severe car shortages expected this summer on long-distance routes. Amtrak lacks funds to overhaul any more cars at the Beech Grove shops yet expects about one car per day to take itself out of service. Delivery of the new superliners is delayed so badly that the first long-distance train is now set to be converted to new cars on October 1. Pullman-Standard, which is building the cars, recently announced its intention to go out of the passenger car-building business, leaving the Budd Company as the only U.S. company still in the business.

Amtrak and Energy (continued from p. 1)

The Administration is doing its best to obscure the importance of public transportation to the current energy crisis. Secretary Adams' strategy has been to emphasize how small Amtrak and bus ridership is when compared with **total** intercity travel. Those figures (1% and 2%, respectively) are interesting—and sad—but totally irrelevant, since the U.S. is not about to **lose** its gasoline supply. Since there are only a mild shortage and some stiff price increases, the relevant question, which we tried to answer above, is: how much of the auto traffic disrupted by a limited gasoline crisis could trains and buses handle? The Secretary has steadfastly avoided this question, probably because the answer would kill his plan to kill Amtrak.

The Long-Term Crisis. There is general agreement that the U.S. and the world will face a severe gasoline shortage as early as the late 1980s. In its February, 1979, report on the "Automobile Transportation System," the Congressional Office of Technology Assessment stated: "Several recent studies, of which the Workshop on Alternative Energy Strategies is probably the most exhaustive, point to the possibility that world demand for oil will outstrip the growth of oil-producing capacity by the middle or late 1980's." The April 15 **Washington Star** reported that "Saudi Arabia—which has the world's largest oil reserves—will be incapable of satisfying the petroleum demands of industrialized nations by the mid-1980s, a controversial congressional staff report, censored under pressure from the State Department, concludes. . . . Energy experts throughout the U.S. government agree with the basic thrust of the report: It would be folly to rely on Saudi Arabia as a 'residual supplier' for world needs. Consequently, the United States desperately needs to draft an energy policy that would make it more self-sufficient."

Meanwhile, gasoline consumption in the U.S. rises at the rate of 3% per year. But consider these numbers:

Intercity Mode	Passenger Miles Per Gallon (1990)	Passenger Miles Handled (1976) (billions)	Modal Split (1976)
Airplane	30	163.6	11.8%
Automobile	60	1,187.0	85.9%
Auto-Train	100	0.3	—
Bus (includes commuters)	125	25.0	1.8%
Rail (excludes commuters)	125	5.5*	.4%

*10.3 with commuters and auto-train.

The energy numbers are conservative from the rail advocate's viewpoint because they do not reflect the indirect effects of the various modes. These effects are explained, and the numbers documented in a separate article.

The implications are obvious: the U.S. needs more auto-train, regular passenger train, and bus service. Richard A. Rice, Professor of Transportation at Carnegie-Mellon University in Pittsburgh, drafted a scenario in which rail passenger miles reached 350 billion (excluding auto-train) by the 1990's. This was based on what our energy supply could handle with a sensible modal split. We applied his split (36% auto, 34% auto-train, 6% air, 10% bus, 14% rail) to projections of what intercity travel is likely to occur.

Intercity travel (30 miles or more one-way, excluding water and commuter rail) totaled 1,381.4 billion passenger miles in 1976, according to the Transportation Association of America. Since the National Transportation Policy Study Commission has projected a 77% increase from 1975 to 2000, we figured on a 55% increase from 1976 to 1990 yielding about 2,150 billion passenger miles in the latter year.

Our estimate of 300,000 barrels/day of oil saved is based solely on an increase in non-auto-train rail usage outside the Northeast Corridor, and assumes 74% of passenger-miles diverted from auto and 26% from air. Total non-auto-train rail usage would be about 301 billion passenger miles, of which about 8 would be in the Northeast Corridor.

Are these projections reasonable? Consider:

—Improved public transportation is the **only** measure aimed at helping the energy situation which has broad public support.

This is not surprising because it involves the "carrot" rather than the "stick". Are there any polls or volumes of mail showing widespread grassroots public support for massive increases in nuclear power production? Reduced gas station hours or gas rationing? Government regulation of thermostats? Some or all of these other, less popular measures could be avoided in the long term if we began a massive effort now to reallocate both our urban and intercity passenger travel.

—The public translates its beliefs into practice when public transportation is presented as a reasonable alternative. The 142% ridership increase on the Los Angeles-San Diego line (1973 to FY 1978) was achieved despite the relative isolation of the route. It does not connect to any urban rail transit systems, and its only intercity rail connections are in Los Angeles: two daily long-distance routes and one tri-weekly route. Within twenty years, prospects are good for urban rail lines in both Los Angeles and San Diego, plus improved bus service and, in Los Angeles, commuter rail and better intercity rail connections. Watch ridership on the "San Diegans" take off under those conditions!

Public transportation will never match the flexibility of the automobile, but convenient transfers among the modes will lessen the disparity, and the cost and availability of gasoline will be increasingly important in future years in promoting all public

THANK YOU, MEMBERS! THANK YOU, TOM CRICELAIR!

We appreciate your generous response to our request for special contributions to assist in the fight to save passenger trains. We also appreciate your patience as the extra workload in Washington put us behind in production of the newsletter, though we still hope to get all 11 issues to you this year. Four first-class letters were sent to all paying members (Feb. 26, Mar. 9 with authorizing committee members listed on the back, Mar. 27, and Apr. 10); if you did not receive one, let us know and we'll send it.

Your extra contributions helped us pay the heavy cost of mailing those letters, and permitted us to put former assistant director Tom Crikelair back to work here for a few weeks. We are equally grateful to him for emerging from the clean air of Maine to fight the hot air of Washington bureaucracy.

transportation except air. Developing public transportation has a snowball effect: as more links are put into place the rate of ridership growth increases more and more rapidly. As this growth occurs, urban development patterns will become increasingly consistent with the needs of transit users, reinforcing the pattern of increasing transit dependency.

—**We really have no alternative.** Muddling along with the present mix of transport services would surely fulfill Secretary Adams' dire prophecy: "If there is an energy crisis in this country, Amtrak is not going to solve it, the buses aren't going to solve it, the airlines aren't going to solve it. You're going to stop driving."

What is the Secretary doing on a large scale that could help us avoid this prospect? Running faster trains between Boston and Washington is a start, but it doesn't solve a **national** problem. Neither does pushing for a 50 miles-per-gallon automobile. Even if such a vehicle was developed and **everyone** used it, the automobile would only equal the energy efficiency of the train and bus with no improvement in the negative side-effects (see "The Energy Numbers") and a much worse safety record. The inferior comfort likely in such an efficient automobile would doubtless cause many intercity trips to switch to the far less efficient airplane—if no trains were available.

If the President is serious in labeling his attack on the energy problem "the moral equivalent of war", the Administration should be advocating drastic changes from the status quo. Instead, the U.S. DOT program level shows an **increase** in highway spending from FY 1979 to 1980 (\$7.9 billion to \$8.5 billion), and **decreases** for Amtrak (\$779 million to \$760 million) and the Urban Mass Transportation Administration (\$3,517 million to \$3,516 million). The moral equivalent of what?

THE ENERGY NUMBERS

The passenger-miles-per-gallon for 1990 used in our lead article are those used by Richard A. Rice in his article, "Toward More Transportation with Less Energy", which appeared in the February, 1974, **Technology Review** (published at Mass. Institute of Technology). The validity of his numbers are confirmed by more recent sources discussed here. These numbers do not reflect indirect results of operating the different modes. Therefore, to some extent very difficult to measure, these numbers are biased in favor of air and auto and against rail and bus.

The indirect impacts are primarily on urban transit and urban development. Intercity trains and buses generally serve (or should serve) city centers near good urban transit connections whereas airports are outside city centers and generally accessible by transit from only one or two directions. Thus a higher percentage of rail and bus patrons reach or leave their terminal by urban transit, and the potential for pushing this still higher in the future is good. By contrast, a higher percentage of air patrons must use the automobile to get to the airport, and the potential for lowering this in the future is more limited. This is true not only of passengers but of airport employees and the employees of companies located near the airports.

Even where transit does serve the airport, there is a disadvantage in that a high portion of that transit line's energy usage must be charged against the airlines which are the sole or major reason the transit route exists. In contrast, only a small proportion of transit energy usage need be charged against intercity rail and bus carriers serving city centers, because the transit lines would probably be there anyway to serve adjacent office buildings and connect with suburban rail and bus services.

So the airplane encourages automobile reliance and the automobile itself encourages suburban sprawl—low-density development which produces travel patterns more difficult to serve with urban transit, and buildings whose utilities consume more energy. Intercity trains and buses encourage healthy, energy-efficient city centers.

Keeping this pro-rail/bus and anti-air/auto footnote in mind, we proceed to the comparison of passenger-miles per gallon (PMPG) achievements and potentials of the different modes. The subject is discussed at length in "Intercity Domestic Transportation System for Passengers and Freight", a report prepared by Harbridge House, Inc., for the Senate Commerce Committee and released May 1, 1977. The report states: "A new 3,000-horsepower turbo-charged diesel locomotive can typically draw nine coaches, each with 60 to 80 seats, while consuming 0.5 gallons per mile. Thus, intercity rail passenger service should be able to produce between 270 and 360 seat-miles per gallon. This performance would place it in the same energy-effectiveness range as intercity bus service." (pp. 386-7)

Seat-miles are the same as passenger-miles at a 100% load factor, which is rarely achieved except in special charter operations. The airline industry for years had load factors between 50 and 55% until bargain fares pushed it up to 62% in 1978; in 1974 Amtrak achieved 54.9%. A conservative estimate of what a modern rail system could achieve would be 55%. When applied to the seat-miles above, this yields a range of 148.5 to 198 passenger-miles per gallon for all-coach service. Inclusion of some first-class accommodations would pull this down somewhat, so the Rice suggested systemwide average of 125 PMPG seems reasonable.

DOT says that the LA-San Diego run was already achieving 100 PMPG in 1977, and the LA-Seattle "Coast Starlight", using old equipment including sleeping cars and traversing some mountainous terrain, was getting 70 PMPG.

Bus: The intercity bus is an energy-efficient vehicle which has been largely unable to attract anyone who can afford another method of travel. From 1950 to 1970, while Interstate highway construction was enabling modern buses to provide better service and railroads were cutting trains and trying to keep the public from discovering many of the ones that survived, intercity

bus revenue passenger miles nevertheless declined by 16.8% from 17.03 billion to 14.173 billion (Class 1 carriers). Bus riding even declined from 1970 to 1971 when intercity rail passenger miles dropped from 6.2 billion to 4.4 billion due to the discontinuance on May 1, 1971, of half of the nation's trains.

In spite of its declining ridership, the intercity bus industry continues to be energy efficient, achieving 121 PMPG (including charters) in 1977. Rice's 125 PMPG figure for 1990, however, is based on larger buses and fewer seats per bus than are currently operated because Rice felt the resulting comfort improvements would be essential in order for buses to achieve the massive ridership increases he projected.

Air: The airplane is the worst energy-waster. In 1973, domestic airlines achieved 15 or 16.2 PMPG (Federal Energy Administration and DOT, respectively) depending on how one allocated fuel use between passenger and belly freight services. In 1978, with

Our best wishes to Joe Zucker who recently left NARP to join the Congressional Affairs office at the Environmental Protection Agency. He helped us through some difficult times, and NARP was particularly fortunate to benefit from Joe's successful efforts to get good media coverage of the Chicago NARP Board meeting and of our first press conference, which he conceived and organized.

help from higher load factors and tighter seating this had risen to 24 PMPG. DOT has projected a 14% improvement in air fuel efficiency from 1975 to 1990 which would make Rice's projected 30 PMPG appear generous.

Auto: Intercity automobiles achieved 42.6 or 43.1 PMPG in 1973 according to FEA and DOT, respectively. DOT claims this rose to 46.3 in 1976, with an average occupancy of 2.6 persons. DOT has published projections of the fuel efficiency of the automobile fleet as rising from 15.6 miles per gallon in 1978 to 25.8 MPG in 1990. An average occupancy of 2.6 would yield 67 PMPG in 1990, but the occupancy rate for all intercity auto travel should not serve as the basis for computing the fuel consumption impact of diverting people between rail and auto. This is because the preponderance of rail travel is by people traveling alone. A recent Amtrak survey found that 62.6% of passengers were traveling alone; individuals traveling alone or with one companion comprised 85% of those surveyed. Therefore, the occupancy rate of automobiles driven by former Amtrak passengers would be well under 2.6 and probably under the 2.3 implied by Rice's figure (60 PMPG divided by 25.8 MPG), so again it appears the Rice figure is generous.

This phenomenon also works in reverse: because the economics of auto travel are favorable for groups, the people attracted from auto to rail by improved rail service would be primarily "groups" of one and two people, so an improved rail service would also improve the energy efficiency among intercity auto users by helping to increase average vehicle occupancy.

What is Intercity Travel? Two definitions are commonly available. The Transportation Association of America publishes annual figures based on trips more than 30 miles one-way, and Amtrak's share is about .3% as Secretary Adams points out at every opportunity. This figure is unfair because the 30-mile definition includes many commuter trips that DOT itself says Amtrak shouldn't be handling. Included in the 99.7% of non-Amtrak trips are the trips of most commuters between Fairfield County, Connecticut, and Manhattan—many of which are made on commuter trains. The National Transportation Survey of the Department of Commerce includes trips of 100 miles or more one-way, which puts current Amtrak ridership at 1%.

A letter from the Secretary: In early April, Secretary Adams sent letters to Congress which began: "It has been argued that the Amtrak Restructuring Plan which I have proposed . . . is counter-productive to our national effort to save energy. This argument is simply not true. The enclosed fact sheet points out that continued operation of the lightly-patronized trains I have recommended be terminated will waste energy."

But the enclosed fact sheet didn't even mention seven of the

SELLING AMTRAK: THE COOKUS FACTOR

NARP Member Randy Cookus, an Amtrak ticket agent in Little Rock, received the ultimate accolade for his promotional work from Al Michaud, Amtrak's VP-Marketing. Michaud opened a Jan. 24 presentation to the Amtrak Board with three slides: "The Texarkana/Little Rock/Longview Experiment"; "The Cookus Factor"; and a list headed "Cookus' Connections" which included TV talk shows, interviews, and news coverage; radio talk shows; newspaper editorials and feature articles; school promotions; and Hog Train promotions. (Hog Train was two recent special group moves on the "Inter-American" to football games in Texas.)

For \$600 and a lot of energy, Cookus produced a \$30,000 increase in revenue. Michaud said Cookus' work would normally cost a company \$75,000. By giving recognition to what Cookus has done, Michaud hopes to harness similar latent energies in other ticket agents. It was suggested at the meeting that Cookus himself might train others.

The big play Michaud gave to Cookus, and Michaud's plan to earmark about 2% of his budget for a controlled test of smaller markets (probably two with advertising and two with the Cookus approach) is a response not only to the success of Cookus' work but to constant pressure from NARP members for more attention to the smaller markets.

Actually, the ads which Cookus and others in the Arkansas Association of RR Passengers paid for are generally felt to have had less impact than all the other work he did, including the installation of a phone answering device in the Little Rock station. This tape recording gave basic schedule information and invited people to call back during station agent hours. This was a response to the feeling that many people in rural areas are afraid of 800 "toll-free" numbers.

Michaud emphasized that he has done some small market work all along, but defended his heavy emphasis on the 5 "hub markets" (Los Angeles, Chicago, Washington, Philadelphia, New York) and 27 feeder markets.

He said the probability of reaching people whose needs Amtrak can meet is much higher in a market like Chicago with 19 routes and 174 departures per week. Furthermore, it costs less to reach the same number of people in a large community than in a small one. The \$750 ad on Washington's WMAL costs only \$75 on the Rawlins, WY, radio station, but the cost per thousand people reached is \$1 in Washington and \$2.08 in Rawlins.

Michaud emphasized the importance of cost considerations because his budget is so small. In 1978, it is estimated that airlines spent \$207.9 million on advertising; rent-a-car \$38.8 million; buses \$11.2 million; and Amtrak \$8.5 million. Michaud noted that the rental car is emerging as a major factor in trips of up to 150 miles.

	Market Share		Advertising Share	
	1977	1978	1977	1978
AIR	58.7%	62.9%	75%	78%
RENTAL	.8	.9	15	15
BUS	35.3	31.4	5	4
AMTRAK	5.2	4.8	5	3

Even the above figures overstate Amtrak's advertising share, since Amtrak's advertising dollars are partially negated by constant news reports about possible service cutbacks. Many people believe the Adams plan has already been implemented, even though this would not happen until October 1, 1979, if at all.

Complaints have also been raised that too much Amtrak advertising is general, without fares and schedules. Michaud defended this by citing the "awareness factor" . . . Amtrak's Harris survey found only 6% of the public thinks of trains first when contemplating a trip, and there is little use in giving

fare/schedule information to someone who isn't even aware of the train as a pleasant way to travel. Thus Amtrak has generally used TV ads to build awareness and demonstrate the comfort of the train, and newspaper ads to provide specific information. Michaud said increasing emphasis is being placed on specific information in ads, and Board member James Mills expressed appreciation for this change, which he had noticed.

Barry Williams Joins NARP Staff

Barry Williams is the new assistant director of the National Association of Railroad Passengers. He served until recently as a research assistant at the National Transportation Policy Study Commission.

He is a native of Brentwood, Missouri, and received the degree of Bachelor of Arts in political science at Knox College, Galesburg, Illinois, in 1978.

He has served as an officer of the Brentwood Youth Commission, and was selected to attend the American Legion's Missouri Boys State, a 2-week "camp" in which youths participate in simulated state and federal government.



"If we were to have now an oil embargo like the one we had in 1973, the United States would be on its knees in 120 days. . . . We are importing about 50% of our crude oil. In event of an embargo, we would have to go on half rations.

"Everything we're doing is burning up and using energy. That's our way of life. . . . We have got to start thinking of our grandchildren and their children. . . . We need strong guidance from industry and from government—and soon."

—Frederick Johnson, of the Department of Energy's Strategic Planning Office, quoted in *Traffic World*, Jan. 29, 1979

The Energy Numbers (continued from p. 3)

stronger routes DOT would kill. The letter referred to trains on the hit list as carrying "an average of only 78 passengers" and the fact sheet similarly refers to "the average Amtrak train". This carefully hides the fact that several trains on the hit list are energy efficient, and NARP maintains that most of the others could be made so.

The only route-by-route analysis in the Secretary's fact sheet is a chart reprinted from a General Accounting Office report which shows 1977 fuel consumption of 11 Amtrak routes expressed in "Automobile Vs. Train Ratio of Crude Oil Equivalents". The chart is based on automobile occupancy of 2.5 persons which, as noted above, is inappropriate. It assumes autos averaging 18 MPG, though DOT's own fact sheet shows the '76 average as 16.9 and DOT elsewhere has indicated there was no change in auto efficiency from 1976 to 1977. The chart suggests six of the routes are more efficient than air.

The other routes besides the Hilltopper and Shenandoah, are: the "North Coast Hiawatha" which has suffered from extraordinarily bad performance and wild schedule changes; the NY-Kansas City "National Limited" which was converted to more efficient new equipment after the GAO analysis was completed; and the Chicago-Laredo "Inter-American" whose ridership has skyrocketed of late thanks to improved behavior by Missouri Pacific and grass roots promotional campaigns. The "National Limited" also is important because it is the only train serving Indianapolis, where Amtrak's major Beech Grove shops are located. Without it, Amtrak would have to run a weekly shop train between Chicago and Beech Grove at a cost of \$200,000/year, and it would take longer to get cars into the shops and back into service (except when they happen to break down or be fixed just in time to make that weekly shop run).