PERPETUUM MOBILE -

AMTRAK: THE ORIGINAL SIN

By

JONATHAN EDWARD DAVID RICHMOND

Bsc. (Econ.) The London School of Economics and Political Science (University of London) (1979)

Submitted to the Department of Urban Studies and Planning in Partial Fulfillment of the Requirements of the Degree of

MASTER OF SCIENCE IN TRANSPORTATION

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

September, 1981

© Copyright Jonathan Edward David Richmond 1981

The author hereby grants to M.I.T. permission to reproduce and to distribute copies of this thesis document in whole or in part.

Signature of author

Department of Urban Studies and Planning
July 29, 1981

Certified by

Alan A. Altshuler
Thesis Supervisor

Accepted by

Nigel H. M. Wilson
Chairman, Standing Faculty Committee on Master's Program in Transportation
DISCLAIMER OF QUALITY

Due to the condition of the original material, there are unavoidable flaws in this reproduction. We have made every effort possible to provide you with the best copy available. If you are dissatisfied with this product and find it unusable, please contact Document Services as soon as possible.

Thank you.

The images contained in this document are of the best quality available.
Perpetuum Mobile – AMTRAK: The Original Sin

Jonathan Richmond
PERPETUUM MOBILE -

AMTRAK:

THE ORIGINAL SIN

by

JONATHAN EDWARD DAVID RICHMOND

Submitted to the Department of Urban Studies and Planning
on July 29, 1981 in Partial Fulfillment of the
Requirements of the Degree of
Master of Science in Transportation

ABSTRACT

The Rail Passenger Service Act of 1970 set AMTRAK up as a "for profit" corporation. The initial route structure took the form of an inter-connected set of infrequently-serviced, nationwide routes. Despite a restructuring effort in 1979, this basic pattern, rather than one of concentrated regional short-distances services, has persisted. This study sets out to explain why AMTRAK operates on the former principle rather than on the latter. In the process, it examines how both decision-makers and analysts address and answer critical questions with a view to better understanding how analysis is carried out, and thoughts as to how it may be done better.

A series of theories is proposed and discussed. Theories A present a number of seemingly plausible reasons for having a long-distance network - efficiency, social benefits, energy saving, and even nostalgia. They assume that there must be a rational reason underlying the pattern, and seek to expose it. The long-distance system is shown, however, to be illogical from the viewpoint of the propositions put forward for testing.

Theories B, C and D attempt to explain the pattern in terms of the behavior of Members of Congress, that of management, and in terms of the organisational and political structure respectively. Theories of Congressional (Theories B) and management (Theories C) action on the basis of personal risk minimisation, are examined and contrasted against theories explaining behavior in terms of faulty learning processes. Problems of management control are also included in discussion.

Theory D1 casts the problem in the light of lack of definition of goals and purpose for AMTRAK, resultant on inappropriate and ill-defined lines of accountability. Theory D2 finds explanation for the national pattern in terms of centralisation of both management and funding.

Wachs and Schofer have developed a "value-hierarchy" with "values" at the top, "goals", "objectives", "criteria", and "standards" at lower levels. Though the top is most essentially important, the lower levels of the hierarchy are easier to grapple with. But, in executing lower-level work, implied weights are given to the higher levels which may than not reflect the real needs of society.

Theory E, the theory of the Original Sin, shows that there has never been any examination of the values which underlie the concept of AMTRAK. Congress, under pressure, created AMTRAK as an experiment, to be terminated after two years if a failure. But AMTRAK has survived until today, and the values unknowingly imputed to it from there. Instead, planning was started well up the decision tree, and an imputed value frame was to-be-espoused, and the necessary process developed so as to be imprinted with a value program which permits those outputs to be produced.

There are two principal conclusions. The one is that ultimately AMTRAK's route structure is attributable to a failure at AMTRAK's conception to start with values, and proceed down the value-hierarchy from there. Instead, planning was started well up the decision tree, and an imputed value frame was introduced not reflective of real transportation needs. That frame has programmed AMTRAK ever since, and has been reinforced by political, organisational and learning processes.

The second conclusion concerns the analyst. Although real understanding requires reference to imputed values, and resultant goals, processes and outputs, the analyst is drawn to only low levels of abstraction; as a result, few analyses are of any significant value in paving the way for real change.

There is a need for greater awareness among decision-makers and analysts alike of the need to plan in relation to values - to plan for what society really wants. However, if AMTRAK norms are entrenched, so also are those of the decision-makers and analysts.

A value-critical form of thinking is needed. It is more abstract but, because it is set in the reality of being, producing and outputs, it is not impossible. We must work towards a greater awareness of its possibilities, and learn to make it a part of our evaluative norms.

Thesis Supervisor: Alan A. Altshuler

Title: Head of Department, Department of Political Science; Professor of Urban Studies & Planning and Political Science
RAILWAYS

A land of horizontal ladders,
Amid your lines a labyrinth grows,
Your countless sidings serve as cemeteries,
For the rusting skeletons of your past.

Simon Richmond
TO SIMON WITH LOVE AND WET FISHES
And the LORD God said unto the serpent, Because thou hast done this, thou art cursed above all cattle, and above every beast of the field; upon thy belly shalt thou go, and dust shalt thou eat all the days of thy life.

And I will put enmity between thee and the woman, and between thy seed and her seed; it shall bruise they head, and thou shalt bruise his heel.

Unto the woman he said, I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children; and thy desire shall be to thy husband, and he shall rule over thee.

And unto Adam he said, Because thou hast hearkened unto the voice of thy wife, and hast eaten of the tree, of which I commanded thee, saying, Thou shalt not eat of it: cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life.

- Genesis, Chapter 3, verses 14 - 17 (Authorised Version)

"THE PERIOD OF DURATION OF THE CORPORATION IS PERPETUAL"

<table>
<thead>
<tr>
<th>Page</th>
<th>Theories A</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>A1 If a system is to be provided at all, an interconnecting national network is needed for reasons of efficiency: the whole is greater than the sum of the parts;</td>
</tr>
<tr>
<td>39</td>
<td>A2 The train is needed as an alternative for those who do not have access to other modes; social benefits to be derived in this way justify the existence of an inter-connected long-distance system;</td>
</tr>
<tr>
<td>48</td>
<td>A3 The train is needed as an alternative to other modes to save energy, and the more widespread its coverage, the greater the possible conservation benefits;</td>
</tr>
<tr>
<td>56</td>
<td>A4 The train is a national historic resource; Americans should be encouraged to see their country in a leisurely way. The day is past when any train can capture a worthwhile share of the business market, but, if for no other reason than nostalgia, the long-distance services should be maintained;</td>
</tr>
<tr>
<td>62</td>
<td>A5 Equity is a goal of any Federal program. It is not fair for rail passenger service to be concentrated in just a few corridors, because the whole nation is paying for it through Federal taxation;</td>
</tr>
</tbody>
</table>
Members of Congress are not interested in achieving the most efficient rail passenger transportation system for the US, whether in terms of economic utility or with respect to availability and appropriateness of other modes. Due to weak party organisation and identity, they feel very much on their own and are interested, rather, in pleasing their constituents in order to be re-elected. Members therefore lobby for routes through their Districts;

Members of Congress have a large number of items on their agenda, and cannot be well-informed about everything. They are only partially-informed about AMTRAK, and that information which they do receive not only represents a biased rather than random sample of the total information field, but is also subject to further cognitive filtration. Public misconception fuels Congressional misconception which leads to misguided action, the result of which is the preservation of the basic long-distance inter-connecting system;

AMTRAK lacks the equipment to operate corridor service. Available equipment is most cost-effectively used on long-distance services;

The railroads won't co-operate with AMTRAK, and take it with suffrance as it is. Slow, long-distance schedules disrupt freight operations less than short-distance, high-frequency, high-speed services. Additionally, labor agreements make it more costly to operate short-distance services, nullifying the advantages that might accrue to small and lightweight self-propelled vehicles;

Development of the route system has been beyond AMTRAK's control; under the circumstances, AMTRAK has done the best it can;
AMTRAK has as goal survival, and the subservient objective to this, growth. In order to best survive, it is in its interest to have the support of as many Members of Congress as possible. This can best be attained by providing service to as many of their Districts as possible, and this implies a national system. Provided this is done, efficiency is tangential. Political analysis must take precedence over economic analysis;

The Theory C4 goal - survival - is pursued vigorously by only some AMTRAK management, but reflects the organizational goal because, through power relationships and group dynamics, the other management have little choice but to tacitly acquiesce;

AMTRAK has inherited the philosophy and operating procedures of the old railroads, and has perpetuated them;

AMTRAK neither has the lines of accountability of a private corporation, nor the Executive Branch supervision of a public agency. In the absence of such direction (which the Legislative Branch has not provided), AMTRAK has not been able to properly identify with any particular goals and, confused, has had to muddle through, adjusting according to the environment of the day. This has not been conducive to reform.

AMTRAK's centralised management and funding base orients it towards provision of a "national" - type system. All planning occurs in Washington, and there is little contact with state or local government bodies save over 403b service which is itself regarded as supplementary to, rather than part of AMTRAK's main task. This leads to priority being accorded to inter-state long-distance services over more regionalised short-distance services;

There has never been any examination of the values which underlie the concept of AMTRAK. When created, it simply perpetuated the mores of a dated concept, but these became deeply entrenched, and have programmed AMTRAK ever since;
186 ANALYSIS OF ANALYSIS

197 CONCLUSION - THAT THOU SHALT SIN NO LONGER;

211 APPENDIX A Historical Developments in the Nature of the Inherent Advantage of Rail Passenger Service; A Theoretical Approach;

219 B The AMTRAK Energy Stakes - A Study of Studies;

246 C Critique of AMTRAK's Route Forecasting Model;

249 D Rail Passenger Service Act of 1970 PL 91-518;

265 E AMTRAK Reorganization Act of 1979 PL 96-73;

288 F Phases of the AMTRAK Route System;

298 G AMTRAK's Route and Service Criteria, excerpted from NRPC (1975): The Criteria and Procedures for Making Route and Service Decisions;


319 I Questionnaire Used in Interview Sessions, Summer, 1980;

325 J List of Individuals Interviewed;

329 REFERENCES

334 BIOGRAPHICAL NOTE
ACKNOWLEDGEMENTS

It requires more than just good nature to allow an MIT student to descend into your office, put his grimy tape-recorder two inches from your nose, and fire all manner of questions at you for up to an hour. 52 individuals angelically consented to this onslaught, an additional four suffering trial by telephone. All 56 are listed in APPENDIX J, although in four cases only office of employment, not name, is given because of requests for confidentiality. To all of these people, my untold thanks - this thesis would not exist without you.

Additional help beyond the interview sessions was received from several of the above, and I would like to especially thank L. Fletcher Prouty of AMTRAK, Ross Capon of the National Association of Railroad Passengers, and Mr. A. of the House Appropriations Committee staff.

At MIT, Fred Salvucci proved a source of constant wisdom, and taught me about the realities of political life. Courses taught by Martin Rein at MIT, and by Mark Moore at the Kennedy School of Government, Harvard University, also influenced the writing of this work.

Alan Altshuler, my supervisor, read reams of my illegible handwriting and through his sharp, accurate comments, helped discipline my writing; I acknowledge his contribution with many thanks.

On the production front, the excellent artwork of Richard Salz of The Tech, produced with characteristic unselfishness at very short notice, is very much appreciated.

On the financial side, there were many difficulties because no member of
faculty was prepared to commit any of his research funding to support of this work. It is a sad reflection on as great an institution as MIT that a student's ambition must be narrowed and directly aligned with the whims of a particular faculty member in order to secure a sure base of financial support. I knew that in persisting with this unusual topic, rather than selecting one which might have been funded (but which would probably have been mundane, predictable and, to me, unexciting), I would run into trouble. It was particularly disappointing, but unfortunately not surprising, that Michael Meyer for whom I had diligently worked for 1½ years on projects unconnected with this one, chose not to assist me in any way. In the event, I was forced to withdraw from MIT for one semester because I lacked the resources to pay Tuition. I almost did not graduate at all; at the last moment, however, Tom Humphrey, Sponsored Research Technical Supervisor at the MIT Center for Transportation Studies, came up with an offer of employment which I can only describe as being as generous as it was unexpected. It is through his kindness that I shall be able to pick up a diploma which would otherwise have been withheld. I also owe thanks to Nigel Wilson who has shown more tolerance of my eccentricities than I deserve, and who also involved himself in the last few weeks in trying to find a financial solution.

In conclusion, I must express my debt to the United States - United Kingdom Educational Commission for granting me a Fulbright Scholarship for the academic year 1979/80. Although they were unfortunately unable to help me in my second year of studies at MIT, without their initial aid, I would never have been able to come to the United States, and I should like the Commission to know of my gratitude.
My mischievous brother, Simon, contributed the poem which opens this thesis. It is to him that I dedicate this work - in the hope that my parents and sister will forgive me for having to wait for later volumes - with love, wet fishes, and a toast לברכה.

Cambridge, Massachusetts,
July 29, 1981
AMTRAK, the National Railroad Passenger Corporation, resulted from the enactment of the Rail Passenger Service Act of 1970, signed into law on October 30, 1970. AMTRAK was set up as a "for profit" corporation to operate a nationwide system of rail passenger service.

The route structure constructed took the form of an interconnected set of long-distance routes reaching out throughout the nation with daily (or less frequent) service on much of the network; the major exception to this was on the Northeast Corridor. Despite a restructuring effort in 1979, this basic pattern, rather than one of concentrated regional short-distance services, has persisted. This study sets out to explain why AMTRAK operates on the former principle rather than on the latter. In the process it examines how both decision-makers and analysts frame, address and answer critical questions. The aim is not to form normative conclusions on whether AMTRAK should have a nationwide pattern of long-distance services, or concentrate on regionalised markets. Rather, it is both to explain how the present pattern came about and has been so resilient, and to better understand how analysis is carried out, with thoughts as to how it might be done better.

A series of theories is proposed and discussed. Theories A present a number of seemingly plausible reasons for having a long-distance network. They assume that there must be a rational reason underlying the pattern, and seek to expose it. It does not take much probing, however, to show that the long-distance system is not logical from the viewpoints of the propositions put forward for testing.

Theory A1 tests the assertion that if a system is to be provided at all, an interconnected national network is needed for reasons of efficiency, the whole being greater than the sum of the parts. It is found, however, that while this may have once been true, the development of air travel has lost rail its inherent advantage for transporting passengers over long distances. Taking into account, further, competition from the automobile, the passenger train's inherent advantage is confined to high-density short to medium distance regional corridors where a frequent and fast rail service has the potential to compete with other modes (this is further demonstrated in APPENDIX A). The current network, however, reflects the previous, but now invalid, monopoly assumption that rail is the only form of inter-city passenger transportation.

Theory A2 tests the proposition that the train is needed as an alternative for those who do not have access to other modes, the social benefits to be thereby derived justifying the existence of an inter-connecting long-distance system. This is also, however, found to be a function of the now
invalid monopoly assumption. Any social good arises from transportation services provided (by whatever mode), and not from rail service per se. Service to small towns on long-distance routes is largely a by-product of inter-regional service, trains being timed with end-points often thousands of miles apart in mind. As a result, it tends to be inconvenient in schedule, and ill-suited to regional needs. Most towns of similar size do not have rail service, but are served only by bus which reaches 14,000 communities as against the 500 reached by rail.

Any social service should be suited to the needs of the communities involved and use whatever transport - often bus in rural areas - that is best suited to meeting those needs. If there is to be rail service in low-density areas, low cost railbus service timed to meet regional needs would be more relevant than long-distance, high-cost services which are not oriented towards providing social benefits, but to serving a market which no longer exists.

Theory A3 examines the case for retaining rail on a nationwide basis because of its energy-saving capabilities. APPENDIX B considers studies of AMTRAK and energy in greater depth, and finds that there are many misconceptions on the subject, and that studies have been poor and, often as a result of invalid assumptions or global aggregations, highly misleading.

Energy efficiency is not found to be uniform across all markets served by AMTRAK. While, because of the inadequacy of the various studies, it was not found possible to reach a firm conclusion about the relative energy-efficiency of rail as compared to other modes, it was found reasonable to conclude that currently-operated long-distance services were markedly less fuel-efficient than short-distance services and, given their low market-share, did not make a worthwhile contribution to energy conservation. Short-distance corridor services with higher-density seating, and greater passenger volumes which also represent a larger proportion of the total market, show the potential to make a much greater contribution, especially as the possibility exists for electrification. Other short-distance needs could be more fuel-efficiently served by railbus service over sectors currently on the routes of long-distance trains.

Theory A4 considers the assertion that long-distance services should be maintained for nostalgia because the train is a national historic resource, and because no train can capture a worthwhile share of the business market.

The long-distance services are, however, oriented towards a non-existant transportation market, rather than provided specifically as a tourist attraction, any benefits of the latter type being largely derived as an externality. Such tourist needs might be better and more economically provided for were they to be recognised for what they are, and catered for possibly by the provision on non-scheduled "package tour" "cruise trains" on a few particularly scenic routes.
That the business market is inevitably lost might be a reasonable conclusion to be drawn from the manner in which resources have been allocated. Low capital investment has meant a failure to develop effective corridor service where rail might maximise its inherent advantage while on long-distance services, transportation benefits have been confused with consumption benefits (riding the train just for the sake of doing so), with the result that neither has been properly provided for. "Joy-ride" externalities are inadequate reason of themselves for retention of a comprehensive pattern of long-distance passenger services of low "transportation" utility.

Theory A5 states that it is not fair for rail passenger service to be concentrated in just a few corridors when the whole nation is paying for it. There was found to be some strong sentiment reflecting this. However, the concept of "fairness" that implies that each area must have equal rail services could lead to unequal results in that the relative attractiveness of rail, and of the various types of rail passenger service, as compared to other modes, is not uniform across the country. The imposition of an efficiency constraint does not harm "fairness" provided it allows of a re-allocation of resources that enhances transportation provision.

Because, however, it is human nature to regard it as more profoundly unfair to take away something you already have than not to provide something you never had, there may be a case for the introduction of low-cost, low-density "railbus" service as a second-best solution, alongside the development of the more dense corridors. Although corridor exponents might argue that such service would carry few passengers, and be little more than symbolic, it is perhaps that symbolism which matters. At the same time, it could help meet regional needs and be more relevant to the communities served than the long-distance trains which they may want to keep, but which are of little use, and little used.

Theory B1 suggests that Members of Congress are more interested in pleasing their constituents in order to be re-elected than achieving an efficient transportation system, and therefore automatically lobby for routes through their Districts. There was evidence from interviews to suggest that it was politically very difficult to eliminate train service even if it was used by few people and that Congressional support requires trains running through as many Congressional Districts as possible. While under most normal subsidy situations, capital expenditure is more acceptable than money for operating deficits, for AMTRAK it has been the other way round with greater political advantage to be derived from a poor but spread out service, than from a high-quality but concentrated service.

Several examples are given, especially of the 1979 restructuring process.
Theory B2 suggests that Congressmen are well-intentioned, but misinformed. The first section examines the public desire which fuels Congressional action, and finds that it itself is misconceived in that more people wish to retain the service than use it. One commentator said he felt the "Lake Shore Limited" (Boston - Chicago) train was "prestigious for Massachusetts. Worcester people, and Springfield people, and Pittsfield people. I think they like having a train; I'm not sure they ever use it." Emotion is a driving force of the rail passenger lobby, and a force calling for conservation rather than change.

Examples are given of misinformed beliefs, and the processing of information by Members of Congress is considered next. There is a great deal of information and Members, unable to appraise all of it, must have a framework of analysis. Yet, this framework, far from admitting a random sample of information, tends to be biased. Information from and relating to constituencies is considered more important than more general information, and the National Association of Railroad Passengers has been effective in setting up a wide constituency base; this helps explain why many Congressional staff strongly felt that constituents were "demanding" rail passenger service. While there is much mail in support, there is little in opposition.

Reports attacking AMTRAK only construct a general picture which is much more difficult for Members to relate to than pin-pointable constituents' requests. A process of cybernetic reinforcement takes place whereby the reception of acceptable information leads to increased receptiveness of the same type of information, other material being rejected as noise.

Right-wing Members may reject the case for AMTRAK altogether, rather than attempt any reconfiguration towards greater efficiency; they tend to see AMTRAK as one output, rather than a series of different services and service types. Evidence suggests that while Congressional supporters tend to be at least appraised of the service in their District, opponents are less well-informed on any aspect of the problem.

Thus, both supporters and opponents in Congress serve to maintain the current route pattern - supporters assuming that as AMTRAK serves their constituents it must be good, opponents by aiming at AMTRAK as if all AMTRAK service was the same.

Theories C1, C2 and C3 all suggest that AMTRAK is cramped by its environment. It is doing as well as it can, but cannot win out against factors beyond its control.

Theory C1 suggests that AMTRAK inherited poor equipment, has lacked capital investment, and that the most efficient use of available assets has been in the provision of long-distance services.

Theory C2 deals with problems of unco-operative railroads, and labor. AMTRAK does not own most of the track over which
it runs and operating railroads, seeing passenger service as disruptive, have been hostile. High-speed, frequent "corridor" service is much more disruptive to freight traffic than infrequent long-distance trains, and railroads have been particularly wary of allowing such short-distance service to develop. At the same time, the interests of labor, an important supporter of AMTRAK in Congress, are seen as lying in a nationwide structure. Manning levels, out of AMTRAK's control, present a particular problem, especially for development of the railbus.

Theory C3 posits that AMTRAK has been powerless; the Corporation did set up discontinuance procedures, but met trouble in trying to apply them. It also strongly advocated corridors in its 1977-81 5 Year Plan, and called for a reduction in operations in low density areas coupled with increases in high-density areas. Congress has unilaterally acted in route planning, however, C3 suggests, AMTRAK being no more than a pawn, incapable of implementing any internally-generated plan without Congressional approval.

Theory C4 is the management parallel of Theory B1. It suggests that AMTRAK does have some discretion, but rather than choosing to maximise anything in an output sense, it prefers to keep as many people as possible happy in order to best stand a chance of survival. Concentration is therefore focused on attending to organisational security requirements, at the expense of production efficiency.

There was support for this theory from interview materials. As one AMTRAK manager said: "we have to know which side our bread is buttered on." Said another: "you really have to have service in as many places as you possibly can in order to continue to exist."

AMTRAK's planning base appears to be poor. Such activity as does go on is primitive; the Route Forecasting Model (critiqued in APPENDIX C), for example, is bizarrely inadequate. The GAO has, further, claimed that such power as AMTRAK has had has not been used well, particularly in regard to discontinuing "unprofitable" routes.

Short-distance service that has been developed has been largely associated with State efforts, rather than AMTRAK initiative. There was an air of mistrust concerning AMTRAK among certain regional officials interviewed. And, accused one US DOT administrator: "AMTRAK is more interested in political service than they ever were in economic sense."

This requires the maintenance of a nationwide system, however inefficient it may be.

Theory C4b is a variant on Theory C4. It suggests that not all AMTRAK management are necessarily responsible for the security-oriented activities seen in Theory C4. Marketing appears to be the most "corporate" minded department, with emphasis on financial results. But the more conservative and risk-averse Government Affairs and Planning departments set
the scenario, and send a fait accompli down to Marketing and Operations.

Theory C5 is the management parallel of B2 and puts forward the idea that rather than being wilfully negligent, due to faulty learning mechanisms, management has failed to advance beyond the operating procedures they had inherited. Long decades of neglect had left railway philosophy in another age, and the dated route structure AMTRAK took over was seen as a foundation upon which to build rather than an anachronism to be remodelled.

There is strong belief in some quarters at AMTRAK that major improvements, based on the current orthodoxy, could yield substantial success, and a tendency for this to overshadow potentially greater success from a reconstitution of norms of operation. And, the purchase of luxury "Superliner" cars helped to institutionalise the continuation of long-distance trains. Said an AASHTO official: "AMTRAK were living under an anachronism that people wanted to go from New York to California (by train)."

To make the shift towards development of corridor services based on regionalised markets, and away from the traditional role, a different statement of norms and procedures is required, one which has eluded AMTRAK. The problem is put in the context of various learning theories. It is put forward, for example, that while written Corporate statements of objective may demonstrate that top executive management have learned, this does not mean that the organisation has learned. It is suggested that "revolutionary cognitive investment" is required to stimulate change.

Theory D1 shows that AMTRAK neither has the lines of accountability of a private corporation, nor the Executive Branch supervision of a public agency.

Private operations must remain financially solvent, and strike out for profits, or risk going out of business. AMTRAK has been set up to operate on this basis, but has lacked corporate identity or freedom. A 1975 AMTRAK report indicated that AMTRAK did have power to change the route system as an independent corporate entity, but this proved to be illusory.

The AMTRAK Reorganization Act of 1979 recognised that goals had been inadequately defined but, while it did set specific targets, these were arbitrary and were not issued in conjunction with an adequate financing program for their achievement.

From another angle, one US DOT official commented that: "if they screw up, then there's no bottom line to worry about." However, while it might be hard to classify AMTRAK as a corporation, it is also different from any other public transportation agency in that it is not under proper Executive Branch supervision.

DOT and AMTRAK tend to regard each other with mutual hostility.
The DOT has been unable to keep control because of Congressional intervention, and is frustrated. Unable to reallocate without increasing costs (because Congress might implement additions, without acceptance of parallel reductions is less efficient service), DOT is pushed into an adversarial relationship with AMTRAK in which the prime effort is to prune.

Failure to define realistic goals and establish firm lines of accountability has left AMTRAK unable to identify with any particular goals and, muddled, it has had to base its task definition on whatever today's "environment" allows. Up until now the environment has allowed little other than the status quo.

Theory D2 suggests that AMTRAK's centralised management and funding base orients it towards provision of a "national"-type system.

The centralised management approach gives rise to a total systems perspective that sees AMTRAK in its totality as a "symbiotically" inter-connecting nationwide system.

AMTRAK's dependence on Congress means that its daily contact is with this body, rather than with state agencies. And, while Members of Congress may be contented simply by the fact that some service is going through their Districts, it will be the local-level organisations that will be concerned most with the promotion of regional needs. Yet AMTRAK has little responsibility towards them, and they rarely form part of the decision-making process unless the state is part-funding service under Section 403b of the Rail Passenger Service Act.

A curious paradox emerges. The result of the dichotomy of attitudes and responsibilities has been that several markets which might have been good for rail passenger service, but which are of solely regional significance and which the states have not felt valued funding themselves, have not been exploited at all. At the same time other, less good, markets in those very states, have been served because they form part of the "Basic" national system.

Ohio is considering its own high-speed regional passenger system because it does not believe that AMTRAK can provide for the State's needs.

AMTRAK's organisation is very concentrated compared to the bus industry in which there is both considerable regional autonomy in the operation of the two major carriers, and the presence of many small, independent, regional carriers.

An alternative configuration of AMTRAK might have involved "federal" organisation with autonomous regional territories reporting to a central body. Going one step further, funding might be channeled through the state level. Both measures might have increased regional awareness, service-orientation, and service. There could be the risk, however, that were the states to control the funding, rather than continue with
AMTRAK, they might prefer to provide their own rail service, or use the money for modes other than rail. This could, however, lead to a more efficient and relevant total transportation system being provided.

Theory E, the theory of the Original Sin, shows that there has never been any examination of the values which underlie the concept of AMTRAK.

Congress had been under pressure to act from the railroads, wanting relief from the duty of operating passenger trains, from the rail passenger lobby and from labor, both anxious to keep things as they were. The resulting legislation, which established AMTRAK, was a compromise and initially only established the Corporation as a two-year experiment, to be discontinued if unsuccessful. The "national" scheme that was established, however, contained an imputed value frame which was to program AMTRAK's future to today.

Key issues are often ignored by Congress in favor of more immediately pressing sub-issues. Thus, the problem during pre-AMTRAK debate was defined in terms of an already-existing service, rather than in terms of user needs. And once the AMTRAK structure was established, discussion continued only under the assumption of that structure, concerning itself with components within the framework, rather than with the framework itself.

Learning only occurred selectively and in accord with the original plan. Ideas involving "regionalism" and "intermodalism", for example, did not develop because they did not form part of it. The plan programmed future change.

Wachs and Schofer have developed a "value-hierarchy" with "values" at the top, "goals", "objectives", "criteria", and "standards" placed at lower levels. Though the top is most essentially significant, the lower levels of the hierarchy are easier to grapple with. In executing lower-level work, however, implied weights are given to higher-level orders which might well be different from if goals and values were to have been considered directly. The 1979 "restructuring", for example, merely set narrowly-defined criteria, without making reference to values and goals. Although the criteria set were claimed to put an end to political subversion and improve efficiency, they simply dictated the continuance of the present system by doing nothing more than setting a minimal standard which much of the present network could meet. Their aura of respectability helped strengthen the case for the retention of any train which met them, and helped perpetuate the dated original conception, rather than lead to reconfiguration. By failing to look values and goals head on - and hence address the central question of the transportation wants of society - the past was allowed to continue programming the future.

The real issues of values and consequent wants were ignored during AMTRAK's pre-natal stages. Discussion did not center
around how these wants might be satisfied, but started with a given machinery. In 1979 it was therefore the yet more essential that a return to basic values be made. Yet, the false path established, it was the yet more unlikely that steps would be re-trod, thinking started anew. The Original Sin had been committed; now the consequences had to be borne.

The section on "Analysis of Analysis" focuses on the work of the analyst, and shows that similar problems to those distorting the output of decision-makers, afflict his work.

The analyst not only tends to assume "rational" behavior among actors, but conducts his own analysis within a "rational" framework in which the unmeasurable tends to be neglected, though the unmeasurable may be the most essential.

Often analyses gain respect because they bear the hallmark of "science" while in reality they are but partial. The dangers of the partial appearing scientific are most immediate in the CBO energy report (critiqued in APPENDIX B) used in evidence during House Appropriations Committee Hearings, though a worthless, biased document.

But the supposedly "objective" "value-neutral" academic world also has problems. Thus a study by Hilton is nothing more than an attempt to validate - in quantitative cookbook style - a pre-established opinion. His "analysis" is wholly within the bounds of the current faulty framework of AMTRAK, and therefore misses any benefits that might be derived from an alternative one. A study by Mulvey is better, but ignores the value, political and organisational frameworks within which AMTRAK operates. He recommends change, but makes no connection between the values imputed into the present system and those of his proposals. In recommending change, he fails to enlighten us on how it may be achieved.

A value system creates a visible object such as AMTRAK through which organisational and political structures implied by the value system, act to create the output of a structure of routes and services. If we are to understand the core of the issue, we must penetrate to the values inherent in the scheme, and subject them to criticism. A value-critical approach (the term is Rein's) is needed.

This is a theme continued into the Conclusion in which it is shown that all of Theories A through D lack meaning if values are ignored; any explanatory ability they may have is only helpful in relation to the underlying value frame, directly discussed in Theory E. It is perhaps most helpful to regard Theories B, C and D as a system of conditions relating to each other through the value structure in a hierarchy of stimuli and reactions. The links between the theories, access to decoding the puzzle, only becomes possible when seen in relation to values. The truth of any one theory can only be established (or disproved) when put in place on the cause-effect chain in relation to other theories, and when the whole is set against values.
In order to gain understanding that will allow the analyst access to the encoding at the heart of the process, and not merely to non-controlling (though likely reinforcing) co-variables, it is necessary to seek out the values associated with output, and the value program commanding the process that produces that output. Having done this, desired outputs must be established with respect to values-to-be-espoused, and the necessary process must be developed so as to be imprinted with a value program which will permit those outputs to be produced.

Under this approach, "travel" (as consumption) values can be disaggregated from "transportation" values, and each provided for appropriately. "Train cruises" might thus be provided as a separately identified item for the "travel" market, and would not be confused with transportation provision which latter would be supplied where rail held an inherent advantage in relation to other modes. As at least an interim measure, certain "second best" solutions may be required to reflect the tenacity of value mis-programming. Thus, although the value in question is transportation and not rail service, the railbus might be a desirable initial development for low-density rural areas because it implies some rail service to the areas concerned, and satisfies the (mis) understood notion that rail passenger service should reach all locations. It is a change which the values imputed into the current processes might allow, and a base for subsequent iterations.

There are many things which can be understood at low levels in the value-hierarchy if the levels above are "good" and change may legitimately take place with the unchallenged assumption of them. If a value frame is good, then many routine functions may be properly organised, evaluated, altered, underneath its umbrella without specific reference to it. The problem is to know when the value frame is a good one, and to make this judgement, perception of its existence is important on a continuous basis.

In a study as complex as the route system of AMTRAK, it is essential to be aware that a value frame exists, to identify it, and examine how, through control of process, it produces output. Both outputs and process must be examined in the light of the values which program.

This work has two principal conclusions. The one is that ultimately, AMTRAK's route structure is attributable to a failure at AMTRAK's conception to start with values and proceed down the value-hierarchy from there. Instead, planning was started well up the decision tree, and an imputed value frame was introduced not reflective of real transportation needs. That frame has programmed AMTRAK ever since, and has been reinforced by organisational, political and learning processes.

The second conclusion concerns the analyst. It is that in complex situations such as this, the only way to gain real
understanding is with reference to imputed values and resultant goals, processes and outputs which may (in a normative sense) be compared against the values-to-be-espoused, and the goals, processes and outputs which they suggest. Despite this, the analyst is drawn to only low levels of abstraction, not only because he feels less exposed and can produce a more "concrete" product, but also because he doesn't know any better. As a result, few analyses are of any significant value in paving the way for real change.

There is a need for greater awareness among decision-makers and analysts alike of the need to plan in relation to values or - to put it in a nutshell - to plan for what society really wants. However, if the AMTRAK norms are entrenched, so also are those of the decision-maker and analyst.

A value-critical form of thinking is more abstract but because, as I see it, it is set in the reality of goals, processes and outputs, it is not impossible. We must work towards a greater awareness of its possibilities, and learn to make it a part of our evaluative norms.

The study ends with a question: how can we achieve change? The path ahead is complicated, but at least if the right questions are asked, there is a fighting chance of finding our way through the maze to the right answers.
INTRODUCTION
On October 30, 1970, the Rail Passenger Service Act of 1970, the creation of the 91st Congress of the United States, was signed into law (US Congress, 1970; contained in APPENDIX D).

Section 101 stated the Congressional Findings and Declaration of Purpose thus:

The Congress finds that modern, efficient, intercity railroad passenger service is a necessary part of a balanced transportation system; that the public convenience and necessity require the continuance and improvement of such service to provide fast and comfortable transportation between crowded urban areas and in other areas of the country; that rail passenger service can help to end the congestion on our highways and the overcrowding of airways and airports; that the traveler in America should to the maximum extent feasible have freedom to choose the mode of travel most convenient to his needs; that to achieve these goals requires the designation of a basic national rail passenger system and the establishment of a rail passenger corporation for the purpose of providing modern, efficient, intercity rail passenger service; that Federal financial assistance to certain railroads may be necessary to permit the orderly transfer of railroad passenger service to a railroad passenger corporation.

The Act created a "National Railroad Passenger Corporation" which was to be "for profit." It was not to be "an agency or establishment of the United States Government." And so AMTRAK was born.

The end-points of the route structure were to be designated by the Secretary of Transportation, the routing between these points to be determined by the Incorporators of the Corporation. The result is shown in APPENDIX F, MAP 3.

The route structure took the form of an inter-connected set of long-distance routes reaching out throughout the nation, and service on most of the system was to be daily or less. The major exception was to be on the Northeast Corridor between Boston and Washington, on part of which high-speed equipment (the "Metroliners") had already been introduced, to
provide fast and frequent service.

Though a restructuring effort in 1979 under the AMTRAK Reorganization Act of 1979 (US Congress, 1979d) did reduce route mileage some 21 per cent (although the Secretary of Transportation's report (US DOT, 1979) which formed the basis of discussion had asked for a 43 per cent cut), this was an act of surgery rather than reconfiguration, and to today, the basic pattern established in 1970, one which lays emphasis on a nationwide and complete network, rather than on concentrated regional short-distance services, remains in force.

This study attempts to explain why AMTRAK operates this pattern of long-distance routes, rather than a series of shorter-distance high-density lines. But in doing this, it simultaneously tries to draw some lessons for the analyst: it looks at the way we understand phenomena, and critiques it.

The technique of this work is to propose a set of theories, and discuss them.

Theories A present a number of seemingly plausible reasons for having a long-distance network. They assume that there must be a rational reason underlying the pattern, and seek to expose it. It does not take much probing, however, to show that the long-distance system is not logical from the viewpoint of the propositions put forward for testing.

Theories B, C, and D all present a number of believable explanations for the pattern of the AMTRAK system. Theory B1 suggests that Congressmen deliberately distort the system in order to further their own political ends (basically security in terms of re-election). But Theory B2
suggests Congressmen are perfectly well-intentioned, but support the wrong system because of the incomplete and biased way in which they receive information, this process a result of sub-conscious cognitive filtering and cybernetic reinforcement.

Theories C focus on AMTRAK management, C1, C2 and C3 focusing on constraints under which they must operate: lack of equipment, uncooperative railroads, and lack of control. Theory C4 is the management parallel of B1, and proposes that AMTRAK's first objective is self-preservation. Theory C5, on the other hand, is the parallel of B2 and views poor decision-making in relation to learning processes.

Theories D1 and D2 examine the system as a whole, D1 dealing with problems of definition, identity, organisation and accountability on the national level, D2 examining the effects of centralisation of management and funding, as compared to what might result from a regionalised structure.

I used the word "discuss" above because these are not theories which may be "proved" in the manner that a mathematical equation is solved. Many of Theories B, C and D are convincing, yet there is a danger in accepting any one of them, however attractive it might be, because the activity observed which suggests validity for the theory may simply co-vary, or be derivative of, the root cause, and may not point to a fruitful line of attack for effecting real change. There is a need for ordering, the necessity of establishing a chain of causality so that the root cause, rather than merely a symptom thereof, may be identified. But the necessary reference point for this comes only in Theory E which throws previous theories into perspective by casting them in the light of the
set of values - or value frame - unknowingly imputed into the AMTRAK scheme at its inception, a frame which continues to program the pattern of services provided by the organisation.

Much of the material included in this work is drawn from the transcripts of 56 interviews conducted over the Summer of 1980, 52 in person and 4 by telephone (listing included in APPENDIX J). Few serious analyses can be found which take this approach. After all, the comments of a set of partial commentators can hardly be taken as "factual."

Yet, what one finds when undertaking an interviewing project of this type, is that there are not so much "facts" as perceptions of facts amongst decision-makers (or surrogates for them such as Congressional staff). But, it is these perceptions which determine beliefs, opinions and subsequent actions. Although these beliefs may not be backed up by concrete proof, it is important to know what those beliefs are and how they have been formulated, for such knowledge can provide the key to the inner truth of actual process at work, and to the essential value frame programming it.

The concrete answer is, indeed, often only very much a partial answer. One of the key problems of much analysis is that it tends to restrict itself to those phenomena which are most easily identified, precisely measured, and thereby understood. But there is little use in finding, for example, that a certain practice is not "energy efficient" (itself much of a value-judgement, as is shown in APPENDIX B), if there is no awareness of how it has come into place. The cause must be identified and attacked in order to change the effect. The less tangible, and less simple to process information must not be ignored to avoid the risk
of erroneously accepting the "understanding" obtained as a whole explanation, when it is in reality bereft of conception of actual process and therefore valueless in pointing the direction towards change.

This study shows that it is necessary to step back, at a high enough level of abstraction, to examine the framework in which the visible components undertake their interplay, in order to understand their nature, and how they may be altered. It suggests that both decision-makers and analysts have operated at low levels of abstraction, on obviously physical phenomena, the wrong questions about rail passenger service have been asked, and that unless there is a move towards a more value-critical approach, based on both output and process, change is unlikely.

The aim here is not to form any normative conclusions about whether AMTRAK should have a nationwide pattern of long-distance routes, or concentrate on regionalised markets. Rather, it is both to explain how the present system came about, and has been so resilient, and to better understand how analysis is carried out, with thoughts as to how it might be done better.
Theories A contend that the pattern of AMTRAK routes in existence is the result of rational analysis in which, according to Hart (1976):

(i) A clearly recognised problem exists;
(ii) The objectives of the policy-makers are known and it is possible to roughly determine whether they are being achieved;
(iii) An "envelope" defining the action space available is both known and well defined with regards to possible alternatives;
(iv) There is also an outcome envelope containing the consequences of available options; and
(v) The policy-makers have a preference function with regard to the outcome envelope which allows them to select and rank alternatives in terms of order and priority.

According to Theories A, decision-makers have optimised through the use of "rational" analysis to create the best possible route structure.

Each of Theories A1 to A5 is in fact a proposition falling within the theory that output is a result of such rational analysis, each one containing a certain attribute which it is claimed has been optimised; these propositions are tested below.
If a system is to be provided at all, an inter-connecting national network is needed for reasons of efficiency: the whole is greater than the sum of the parts.
Theory Al would have it that since the more complete a network the greater its overall efficiency, the more a network inter-connects, the greater the number of potential journeys that can be made. A subway system's lines will tend to connect with each other at various transfer points to allow for convenient journeys between as many individual subway stations as possible.

This could also be said to be part of the basic philosophy of AMTRAK. Long-distance lines inter-connect to provide for the maximum number of origin-destination possibilities. Chicago assumes strategic importance as a central connecting hub, and timetabling is performed to maximise the number of connections that might be made. Each train in the system is se positioned as to relate to other trains.

As Tom Gillespie, AMTRAK Congressional Affairs Officer, said: "If you're running a service that doesn't connect, you kind of isolate a market," while Howard Henry, Director, Market Planning and Forecasting, stressed the advantages of "synergism where routes feed each other."

Amy Dunbar, Legislative Assistant to Senator Tsongas (D, Massachusetts), maintained that an integrated system was important for AMTRAK "and it's probably in a greater sense worthwhile for them to maintain the long-haul than to provide a short-haul that might not be well-trafficked. And, if AMTRAK maintains its image, then it's imperative that you have these connections for people who are making those distances."

Appendix A reports the results of testing the logic of these arguments using the classical gravity model and the Janelle (1969) theory of spatial reorganisation. They are found to hold validity only when rail
passenger service is in a monopoly position. Under such circumstances, a route structure consisting of a series of regional systems organically integrated into an inter-regional trunk network would maximise potential for interaction.

Regional systems would exist in their own right, as well as in relation to the trunk system. A "distance" effect would influence interaction within regional systems: interaction with other centers decreases as their distance from the point of origin increases. Interaction in the inter-regional system would, however, be significantly related to a "hierarchy" effect under which the attractive power of major centers considerable distances apart would offset distance decay in stimulating movement.

Air competition would hit the inter-regional system hard because its greatest market inroads would ne between major centers long distances apart (rail inter-regional system end-points) between which it could best exercise its speed comparative advantage over rail. End-point rail traffic is lost, and intermediate points which lack "hierarchy" end-point trunking, can no longer sustain the previous level of service.

If frequency is reduced, but the route unchanged, then the benefits of any regional-type service that was provided as a consequence of inter-regional service (because frequency of service was adequate to generate short-distance demand) will be lost. As rail's inter-regional role fades, it is logically best consolidated within individual regional systems.

The development of the automobile also negatively affects the viability
of rail, especially in the lower distance ranges. Rail is then
constrained in effective operation to short-to-medium distance, high-
density markets.

The Joint Federal Railroad Administration/AMTRAK (1980) study:

Rail Passenger Corridors - Analysis of Potential Improvements, states
that:

Although rail travel once held a competitive advantage in a wide
range of travel markets, improvements in the air transportation
and highway systems, combined with the dispersal of residential
and business activity away from rail stations have greatly
reduced the competitive advantage, especially over long distances
and through lightly populated areas. However, at a "corridor"
distance range of about 100 to 300 miles, fast, frequent rail
service is capable of competing with travel by air or auto
for some types of trips.

It is only over such distance ranges and in such high-density markets
that the capital improvements needed to produce such results might
be justified.

The current pattern of AMTRAK operation assumes the now-invalid monopoly
conditions. Ross Capon, Executive Director, National Association of
Railroad Passengers, explained that:

    The general experience has been that there is a magnet, a major
city at one end of the route, and that the most acceptable
schedule, if possible, will put the arrival at that magnet in
the morning, and the departure in the late afternoon. That tends
to facilitate connections with other trains at that city.

The effect of this is to subordinate the needs of the intermediate points
to those of the end points. Louis Rossi, Director, Rail Division,

New York State Department of Transportation, complained that:

    They historically have constantly held the Lake Shore Limited
eastbound for connections from Chicago. It really is giving a
serious service problem to all those intermediate cities...
And that's why you find the eastern Lake Shore has much less
local business on it than the westbound Lake Shore...
They're more concerned about the small number of people that cross the trains at Chicago linking from the Western to the Eastern region market than they are with serving the Eastern region market with trains.

Commenting on the trains which cross Ohio as part of long-distance runs from the East Coast to Chicago, Robert Casey (1980), Director, Ohio Rail Transportation Authority, said: "They are slow, badly scheduled, and do not connect our major cities." Service is not oriented to high-density Ohio city pairs but to inter-regional end-point service, base-line "demand" for which has evaporated with the onslaught of air. Rail might be able to capture a significant market share in Ohio were service reconfigured to meet the needs of regional centers, and to be fast, frequent and reliable.

Sloss and Kneafsey (1977) stress the importance of speed. In a comparative study between Britain and the US Northeast Corridor, they found that: "in the British case the results suggest that a 10 percent increase in speed would yield a 26.1 percent increase in journeys, while in the US case a 10 percent increase in speed could yield a 36.2 percent increase in journeys."

The FRA/AMTRAK Corridors study sees "percentage of total trips that would use each mode between given locations" as a function of the "comparative attractiveness of each mode in terms of travel time, cost, and frequency of service." It:

assumed that doubling of frequency would probably generate 70% more traffic from 3 to 6 daily round trips, and 40% more traffic from 6 to 12 daily round trips. These projected increases are actually conservative in view of AMTRAK's experience on routes where frequency has been increased... and on observed ridership in the Northeast Corridor. Using more optimistic assumptions would make the higher frequencies in each corridor even more attractive.
In contrast to AMTRAK's 1976 0.3% systemwide share of passenger miles, it carried 16 percent of New York - Washington traffic, and 40 percent of air and train traffic on that route. Also noteworthy is the Los Angeles - San Diego route on which half of the six daily round-trip trains are paid for by the State of California. When AMTRAK took over the route from Southern Pacific in 1971, ridership was 300,000 passengers per year. In the 12 months following the addition of the sixth train in February, 1978, patronage was almost 850,000; in fiscal 1979 ridership was 1108,527, and volumes of 148,000 in May, 1979, broke the previous high set during train-dependent World War II (though part of the stimulation did come from fuel shortages). The added frequency has led to exponential growth in ridership so that by August, 1979, the farebox was covering 82 percent of the cost of service on the three added trains, and one state-subsidised train was actually making an operating profit (see Kizzia, 1980).

Markets such as the Northeast Corridor and Los Angeles - San Diego are self-sufficient; they do not require, nor thrive off the "synergy" of being connected to a nationwide system. Instead they serve a function of integration within regions. Service within them is viable because it can offer transportation advantages over other modes, advantages which can no longer be capitalised over longer distances. It is in markets such as these that the train can best develop the inherent advantage it holds today.

On February 6, 1980, Alan Boyd, President and Chief Executive Officer of the National Railroad Passenger Corporation, AMTRAK, addressed the Wharton Transportation Club thus:
Rail passenger service is really a wholesale operation. It has no value if it only serves the individual. When you plan to move trains, you must plan to move millions of people. With this as your base, your plans begin with the movement of travelers between the most densely populated centers of the country. The railroad is by far the most efficient transporter of passengers into and through densely populated centers. This is where we must begin the study of AMTRAK's future. AMTRAK's future is linked with corridor development, commuter service, intermodalism and the revitalization of the city center... One train a day anywhere can be little more than a costly curiosity, like the circus which comes to town each year.

I have not tried to prove above that there is necessarily a case for expanding corridor services. What the materials collected here have shown, however, is that with historical developments towards the multi-modal society, it is no longer necessary or desirable for the rail passenger network to retain an inter-connected structure across the whole country. The whole is no longer greater than the "sum of the parts" and may be considerably less than were those parts to be rearranged to maximise the re-adjusted inherent advantages of rail.

That the system becomes "Balkanised", with non-connected regional systems each functioning independently, and oriented to the needs of their respective regions, far from being a sign of disintegration could be interpreted as a response to the demands of modified socio-economic efficiency.

Such a shift has not, however, occurred. AMTRAK maintains the skeleton of an inter-connected nationwide system. This cannot be explained on pure efficiency grounds; it will be necessary to dig a good deal deeper to gain an appreciation of why an archaic principle persists.
The train is needed as an alternative for those who do not have access to other modes; social benefits to be derived in this way justify the existence of an inter-connected long-distance system.
While, in disproving Theory A1, it can be shown that rail is not an efficient alternative relative to other modes in inter-regional services, Theory A2 posits that these are nonetheless worth retaining for the social benefits therefrom to be derived.

Judging from interview responses and Congressional discussion, such benefits are widely thought to be important. AMTRAK is seen as the servant of those without access to cars, and of those who could not afford to, or were afraid of, flying. A role was clearly seen for the Corporation in areas with generally poor transportation provision. Others simply felt that AMTRAK was a good and needed 'alternative.'

As the Rail Passenger Service Act of 1970 (US Congress, 1970) says, the Congress finds "that the traveler in America should to the maximum extent feasible have freedom to choose the mode of travel most convenient to their needs." This fires the argument for "AMTRAK the alternative," though there is clearly a problem in the vagueness of a word such as "feasible," a term which has at times proved to be elusive, and at others unclear.

The most widely-supported long-distance service amongst those interviewed was the "Empire Builder" which takes a northerly route from Chicago to Seattle (see Map 7, APPENDIX F). According to Matthew Scocozza, Senior Minority Counsel, Senate Commerce Committee, this "is a good example of where AMTRAK should be. Even if it is not cost-beneficial, there is no alternative service; very, very poor intercity bus services, and the air service is almost non-existent because the small carriers just don't go into those particular areas any more."
The "Empire Builder" leaves Chicago and Seattle daily during the summer, thrice weekly at other times of the year, to complete the 2281 mile journey to the other end of the line in 47 hours, 25 minutes. En route, it stops at numerous small towns which are seen to benefit from the service.

A Spring, 1978 survey by Richard Day of the University of Idaho, found that only 9 percent of Chicago - Seattle and Chicago - Los Angeles route passengers were travelling on business, however, and a high proportion of the remainder could be termed discretionary rather than essential travellers (see TABLE 1) (Day, 1978).

TABLE 1: AMTRAK Ridership By Purpose Of Trip, April - June, 1978, Chicago - Los Angeles and Chicago - Seattle services.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business or Work</td>
<td>9</td>
</tr>
<tr>
<td>Recreation or Vacation</td>
<td>27</td>
</tr>
<tr>
<td>Visits to Friends and Relatives</td>
<td>50</td>
</tr>
<tr>
<td>Personal Affairs</td>
<td>10</td>
</tr>
<tr>
<td>School</td>
<td>4</td>
</tr>
</tbody>
</table>

Day also asked passengers how they would travel should train services on these routes be discontinued (see TABLE 2).

TABLE 2: Mode of Transport Specified By Passengers If Train Were Not Operating, April - June, 1978 (routes as above).

<table>
<thead>
<tr>
<th>Mode</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automobile</td>
<td>22</td>
</tr>
<tr>
<td>Plane</td>
<td>34</td>
</tr>
<tr>
<td>Bus</td>
<td>12</td>
</tr>
<tr>
<td>Another Train</td>
<td>7</td>
</tr>
<tr>
<td>Would not have made trip</td>
<td>24</td>
</tr>
</tbody>
</table>

* At the time two train routes were in operation between Chicago and Seattle.
A great deal of caution must be exercised in evaluating this data. If the majority among the 24 percent who indicated that in the absence of the train they would not have made the trip, are people who have been deprived of making the journey because their only means of mobility has been removed, this could be said to constitute a social loss. There are quite different implications, however, if they are individuals who are travelling for the pleasure of the journey itself, using the train as a form of consumption, as it were. The train's high attractiveness for this purpose was indicated in a 1972 Louis Harris survey in which 44 percent of the respondents indicated that sightseeing en route to the destination on a train trip was as important or more important than what one did at the ultimate destination.

It is therefore likely that a good proportion of the 24 percent who would no longer travel would no longer be doing so because the loss of the journey itself constituted a greater disutility than the loss of the benefits to be derived at the destination. It is clearly open to discussion whether this counts as social loss. It is possible that those involved would take some other vacation of equal value.

Ross Capon, Executive Director, National Association of Railroad Passengers commented that: "the public hearing which attracted the greatest number of people was in Fargo, and I would suggest to you that these people are not fundamentally tourists, but that that train is heavily used and depended on by people who live up there, and literally have no alternatives."

The train, however, is timed with end-points in mind. It arrives and departs from Fargo at 01.18 and 01.33, and 02.25 and 03.50 westbound
and eastbound respectively, and inevitably passes through many other settlements during the night hours.

The train is composed of luxury "Superliner" cars, complete with restaurant, lounge, sleeping and dome cars which, together with the nature of the schedule suggest that the service is designed to serve inter-regional rather than regional needs. For a regional-type service, speed, frequency and convenience are important factors. Where population is very sparse, one or more of these factors may have to be sacrificed, but the train does not appear to provide any of them. It is infrequent, often late, partly as a result of the great distances covered, and for many of the settlements along the route it is inconveniently timed.

Further, it is clearly not the only form of transportation available. There is air service within striking distance of all points en route, and smaller settlements having their own airports include Fargo, Grand Forks, Devil's Lake, Minot, Williston, Wolf Point and Glasgow. Over shorter distances the car will be far more convenient than the train in terms of both access to service and availability.

Bus service does exist along almost the whole route, and bus travel is possible between all points served by the "Empire Builder" and Chicago, Minneapolis and Seattle. The bus provides good inter-connection between smaller points and regional foci between which most interaction will take place. Inter-regional connections may be made at these larger towns; thus, bus service integrates individual points effectively into the larger hierarchy of settlements.

By contrast, most of the points on the "Empire Builder" route
are very small, and demand for interaction between them will be minimal; the train does not provide for the larger intra-regional interaction between small points and larger towns in the central place system.

One of the reasons bus service along the actual route of the train is of relatively low quality is the existence of the train itself. One operator, Brown Bus Lines, which formerly provided service between Cut Bank and Kalispell, has indicated its willingness to restore service should the "Empire Builder" be eliminated. It should be remembered, however, that the train does not follow its particular route for the purpose of serving the minor settlements along its way; rather, the rail line and train service are designed to link inter-regional markets, and the position of routes between larger centers is to a great extent a matter of historical accident.

The majority of points of similar size to the smaller towns on the route of the "Empire Builder" have no train service. In fact, while there are only some 500 AMTRAK stations, in excess of 14,000 communities are served only by bus (ICC, 1978a). Demand cannot support a train for these latter, and they do not happen to be on an inter-regional route. I am inclined to be suspect of an argument that a service should not be discontinued because it provides a service to a region, when the reason for that train's existence is not the servicing of that region, but the addressing of some conceived demand for inter-regional tourism between highly-populated end-points.

The train might be a more meaningful alternative were it to connect Minneapolis with Fargo, or Spokane with Seattle at hours when people are prepared to travel, or if it were to provide a shuttle service
between various other points on the route. This might be operated by
self-propelled railcars, providing only basic coach seating, and would
be timed with the convenience of regional points in mind. The
restaurant and sleeping cars which do little other than add to the
mystique (and cost of operation) of the train would be dispensed with.

Congressman James Florio (D, New Jersey), Chairman, House Transportation
Committee, did not think that such service as existed on long-distance
routes was often used as a transportation mode. "The thing could be
free from New York to San Francisco, and I and most other people would
not use it, just because of time constraints," he said.

The "transportation" provider capabilities of the "Empire Builder"
would appear to be very much a by-product of the "rail-buff" function.
The base-line cost is attributable to this latter category which
requires extraordinarily expensive equipment and modes of operation.
A true "social service" for the empty north might well be very
differently constituted, and offer more units of "social value" per
subsidy dollar than the currently-offered service.

The possibility of expanding the present bus service which, in relief
to the train, is fired by demand rather than fortuitousness, should not
be overlooked. The social product being sought is "mobility" rather
than train travel per se and, especially given the low density and
dispersed form of population patterns in the region, a bus service
developed under subsidy could provide a far more comprehensive and
convenient, if less comfortable, service than an infrequent train which
is accessible to only a small part of the regional population.
During the 1979 route restructuring the southern route between Fargo and Spokane was dropped, the northern one — the route of the "Empire Builder" — was kept. This might seem odd given that settlements on the southern route are much larger than those on the northern route.

However, it was argued that there were fewer alternatives on the latter, and that adverse weather conditions might impede access by other modes at other times of the year. Consideration was not given, however, to whether bus service (or possibly more regionalised and lower cost railcar service) might not be more appropriate, or to how great the social loss incurred by the train's removal might be (for example, how many people actually used rail transport during bad weather?) as compared to the social gains that might accrue from the transferral of the resources deployed to some other market or system.

The "Empire Builder" is generally recognised as the long-distance service most essentially of "social" value. There are other routes where such claims are less easy to make. The thrice-weekly Los Angeles to New Orleans "Sunset Limited" is virtually entirely a tourist service. The expensively-equipped "Superliner" train from Ogden, Utah, to Los Angeles is used almost entirely by vacationers en route for Las Vegas. They constitute an insignificant proportion of total arrivals and departures from that city, could easily be accommodated by other modes, and the service cannot be said by any stretch of the imagination to serve any "social" function whatsoever.

At the same time, several regional markets with high potential for passenger service development are not properly served because service which may exist is made up so as to serve a vanished inter-regional need,
and not the requirements of these markets.

While the "social" benefits to be derived from particular types of rail service are, in essence, derivatives of value-judgements, as will be seen later, the political system has never formally faced up to this issue. My reading of the problem leads me to believe that AMTRAK long-distance services provide little of social amenity because they are not oriented towards those markets which might stand most to gain in these terms, but are geared towards a largely optional, and highly specialised, leisure market which could, for the most part, be accommodated on other modes at little "transportation" if not "consumption" loss. Theory A2 fails to hold water.
The train is needed as an alternative to other modes to save energy, and the more widespread its coverage, the greater the possible conservation benefits.
According to this argument, rail passenger service can be seen to be more energy efficient than alternative means of transportation, and should therefore be encouraged. The greater the distances covered, the greater the potential for energy savings, it is argued.

A number of those interviewed attested to rail's energy saving abilities in general, without attempting to differentiate between market types. "The most efficient is rail, next bus, next auto and air," declared one State official in support of the idea that since rail was a good thing in energy terms, the more of it the better.

Mr. Y of the Federal Railroad Administration, summed up attitudes as follows:

The Executive Branch sees AMTRAK as a permanent subsidy situation and feels that a large part of the AMTRAK system does not justify the public cost in terms of either energy saving or cost per passenger. There are elements of the Executive Branch which feel there are corridors which have the potential to justify their cost in terms of public benefits; the largest consensus would be on the Northeast Corridor. Congress sees AMTRAK as an energy-saving device which justifies any public expenditure in energy saving and other less tangible benefits.

While this is possibly a somewhat extreme summary of the situation, it is indicative of a lack of knowledge and evaluation of the energy-saving potential of AMTRAK. General "black-box" views of AMTRAK as energy-saver by their nature support a large network. Interestingly enough, though, lack of insight by some of the most virulent opponents of AMTRAK subsidisation, implicitly supports a larger system, rather than a more concentrated one. (This is discussed more thoroughly under Theory B2). By failing to discriminate amongst the various types of rail passenger service, change towards development of the more energy-saving types is not promoted because all are seen as below the
minimum level of viability in terms of not being capable of covering costs from fare revenues. Efforts are thus made to reduce the system in its totality, rather than to rearrange its elements towards maximisation of energy-saving potential.

Theory A3 assumes that the train will have an energy advantage over other modes over all distances, and that this advantage will not vary according to market served. It assumes that cost of service provision, in energy terms, is constant, and does not consider what effects service characteristics will have on market penetration and hence, energy saving ability.

That a particular train is sold out does not automatically make it a success in energy terms. The argument that it is a success looks at it in isolation, an unacceptable position to take given that resources are limited and must be allocated. For each case, two questions should be asked. First, "is this train an energy-efficient alternative over the link being considered and how may it contribute to energy conservation?" Second: "would limited resources be put to greater use on this link relative to the set of all other choices?"

In fact it seems evident that little serious research is done on the subject of the first question by the proponents of particular links, who for the most part are content with rhetorically attesting to what they see as the self-evident facts. And, the second question receives even less attention. Such studies as have been carried out are, for the most part, wholly inadequate. They have been narrow, and have been - sometimes hideously - slanted towards promoting the interests of the body conducting the "inquiry." A full review of these studies is
included in Appendix B which provides a more detailed and technical
treatment of the subject.

Because of the contradictory and confusing nature of this work, it is
not easy to reach firm conclusions. Attention will be focused here on
the most axiomatic and significant inferences which can be made.

Energy efficiency is not uniform across all markets served by
AMTRAK. As the Congressional Budget Office (1979) reported:

a long-distance train with four coach cars, four sleeper cars,
one dining car, one baggage car, and one observation car has
about the same passenger carrying capacity as a train with five
coach cars. Assuming that the energy required per car is roughly
the same on either train, the long-distance train in this
illustration requires more than twice the energy per seat-mile
as a train with five coach cars.

Mulvey (1978) finds similarly. Short-distance trains with Amfleet
equipment produce more than double the passenger miles per gallon of
long-distance equipment, he asserts.

Comparing AMTRAK performance to that of other modes is extremely
hazardous because of the assumptions which must inevitably be made.
Thus, for example, should one compare rail performance against an
assumption of average automobile load factor, or attempt to take a
marginal approach based on the theory that since many of the people going
by train are travelling alone, were they to switch to automobile, they
would continue to travel by themselves? This sort of problem is
extremely hard to resolve, and results in considerable variance in
interpretation amongst the various studies.

So, while the General Accounting Office (1978c), on an analysis of 11
(mostly long-distance) routes found that: "the trains on the 11 routes
reviewed consumed more energy in fiscal 1977 than would have been used if every passenger had used an automobile," AMTRAK (cited in Mulvey (1978) TABLE 2.7, p.68) claims that even its (less fuel efficient) conventional equipment (of the type which was generally employed on the routes studied by the GAO) is almost twice as fuel efficient as the automobile. Standing in the middle, Mulvey finds that AMTRAK long-distance equipment does only slightly better than automobile.

Over shorter distances rail is seen to do far better than over long distances by both AMTRAK and Mulvey, rail being seen as performing over four times better than automobile in the passenger miles per gallon stakes in the former estimate, almost three times better in the latter. The joint FRA/AMTRAK (1980) Corridors study projected fuel efficiency more than three times better for rail than for automobile on the short-distance corridor proposals they studied.

In a statement which Hilton (1980) mis-attributes to AMTRAK (an exceptionally unacceptable piece of carelessness since it occupies 7 out of the only 27 lines devoted to energy, and is somewhat contradictory to the real AMTRAK view), the Federal Railroad Administration reported to the House Appropriations Transportation sub-committee (US Congress, 1979a) that:

> With existing conditions, rail is far from a favorable comparison with intercity bus from the standpoint of energy efficiency. While new lightweight equipment, an emphasis on short-haul corridor operations, and greater use of electric trains in the Northeast Corridor will surely increase AMTRAK's overall energy efficiency, equality with bus will seldom be achieved, if ever, on long distance routes, barring a technological breakthrough in railroading.

While AMTRAK claims that its Amfleet (but not conventional) equipment produces more passenger miles per gallon than bus service (cited in
Mulvey, (1978) TABLE 2.7, p.68), other reports share the view that the bus is more energy efficient than either long or short-distance rail passenger service.

Taking all alternative modes into account, Mulvey finds that: "AMTRAK long-haul services presently consume nearly as much fuel as would have been used by the riders' second choice alternative. AMTRAK's contribution to fuel consumption is effectively zero for long-distance travel."

This last comment is partly driven by AMTRAK's low contribution to long-distance inter-city passenger-mile market share. But, while long-distance rail service can make only negligible inroads into the total passenger transportation market (possibly 0.3%), regional corridor systems could, as we have seen, have the capability of serving a significant proportion (eg. 16 percent in 1976 between New York and Washington). Thus, while long-distance services, even were they to be more energy efficient than available results would suggest, could have no impact on a national scale, short-distance services could be of considerably greater importance on a regional scale.

Also relevant is the point that in the event of an energy crisis, a regional system already carrying say 30 percent of the market at 50 percent load factor, could readily accommodate an extra 30 percent of the total market - 43 percent of the normally non-rail market. A long-distance route carrying 0.3 percent of the market under normal conditions, at 50 percent load factor, could only accommodate an extra 0.3 percent of the total market (0.31 percent of the normally non-rail market), providing insignificant relief.
Further, a fault in the way diversion factors are used in all studies is the assumption that if x more passenger miles are transferred from rail to bus or air, this will imply an increase in air or bus fuel consumption in proportion to x. It is vehicle miles, and not passenger miles which determine actual energy use, however. Because rail passenger traffic on long-distance services represents such a small share of total traffic in these markets, it seems unlikely that more than a slight increase in vehicle miles for bus or air would result were rail passenger service to be terminated. The insignificant number of passengers transferring might simply marginally increase load factors.

Or, to put it another way, the existence of AMTRAK service on long-distance routes may have little or no effect in reducing vehicle miles by air or bus. Rather than rail passengers causing less energy to be used than had they flown, the existence of the train might mean that more energy is consumed. In contrast, where AMTRAK has a significant market share, discontinuance of its services could result in the need for large increases in capacity on other public carriers. Improvements in Washington - New York rail services, for example, were accompanied by decreases in air shuttle capacity.

Also worthy of note is that short-distance rail services compare more favorably in energy use against air than do long-distance services, because the heavy fuel use for airplane take off and landing has to be spread over fewer miles in the latter case than in the former. Short-distance rail also scores over long-distance in that while there is potential for electrifying short-distance corridor-type routes, this is clearly less than feasible over longer distances.
Not only this but, as we have seen earlier, transportation demands in low-density areas currently served on long-distance routes could be better met by long-distance services. As Mulvey said: "If appropriate short-distance rail passenger service could be provided to meet the needs of short-distance passengers on long-haul trains, the energy savings would be much larger, other things being equal." The recent railbus developed by British Rail Engineering and British Leyland, for example, is literally a bus fitted with rail bogies. Its fuel consumption is that of a bus, while in performance it shows many of the advantages of a fixed guidance system. And, the Budd company claims better than inter-city bus fuel efficiency - on a seat-mile basis - for their single vehicle railcar, the SPV 2000 (US Congress, 1979b).

While, because of the inadequacy of the various studies, it is not possible to reach a firm conclusion about the relative energy efficiency of rail as compared to other modes, it is reasonable to conclude that currently-operated long-distance services are markedly less fuel efficient than short-distance services and, given their low market share, do not make a worthwhile contribution to energy conservation. Short-distance corridor services with higher density seating and greater passenger volumes which also represent a larger proportion of the total market, show the potential to make a much greater contribution, especially as the possibility exists for electrification. Other short-distance needs - if they are to be met by train - would be better and more fuel-efficiently served by providing railcar-type service over certain sectors currently served by long-distance trains. Theory A3 fails.
The train is a national historic resource; Americans should be encouraged to see their country in a leisurely way. The day is past when any train can capture a worthwhile share of the business market, but, if for no other reason than nostalgia, the long-distance services should be maintained.
Everyone loves the train; it is part of America's heritage. It is a vehicle for nostalgia. There are some who claim that the train should be preserved for this reason alone. In America's history, it was the long-distance train steaming westwards through vast emptinesses that had the image of prestige; starched-jacketed waiters would serve feasts to the passengers as the train roared into the grey darkness, city limits past. The sleeping car attendant would meanwhile be getting the gracious accommodations ready. This is what the nostalgia hunter wants to be preserved and if this is to be done, then it is indeed the longer-distance services that need to be kept open.

The case for an inter-connected network as against a series of short-distance corridors was examined under Theory A1 purely on efficiency grounds, where the only demand under consideration is the derived demand to get from A to B at which latter point a primary want can be satisfied. Theories A2 and A3 rested on the same principle.

Ex-AMTRAK President, Paul Reistrup said, however: I think there's some national justification for having people see their country."

Asked whom he thought used the long-distance trains, Gordy Peters, Chief for Rail Marketing, New York State Department of Transportation, replied: "I'd say somebody who wants to do it for an experience. It's not cheap to take the train between New York and Los Angeles. And, they're a lot of people, like the rail fan types, who took a train when say they were in the Service, and they want to recapture some of that experience today." Under Theory A2, a Louis Harris (1972) survey which reported that 44 percent of survey respondents found sightseeing en route to a destination by train equally
or of greater importance to what they did on arrival, was discounted as not being socially beneficial.

Such travel does benefit from a rather unusual externality associated with rail passenger transportation, however, in that the journey, as well as serving a derived demand, can be an end in itself - in effect, a form of "consumption." There is a good deal of evidence to suggest that rail has lost the lucrative business market except on the Northeast Corridor and, perhaps, in Southern California. That it has lost it on longer-distance routes is a virtually irreversible fact. Given this scenario, while there is perhaps a diminishing case for rail as a form of transportation, there may be potential for developing it in the "nostalgia" markets, capitalising on the "consumption" externalities associated with long-distance train travel.

This is what the 1972 Louis Harris survey concluded:

It is perfectly apparent that if AMTRAK tries to sell speed and shortness of the trip, it is bucking into the airlines' strongest motivator. While it is desirable to have higher speed trains and to shorten elapsed time in reaching destinations, it is also the least likely tack for AMTRAK to score through on.

The report found that rail scores highly on:

- a kind of special personal freedom and comfort which is unique to train travel. It consists of the ability of the passenger to get up and stretch, take a stroll, to take in interesting sights, and to enjoy the trip with a feeling of security and safety...

- AMTRAK could begin by stating that it did not have as much space available for travellers as other forms of transportation, that it was basically marketing a limited and select commodity and service. Train seats of modern, inter-city trains are meant for special people who can enjoy the pleasures of train travel...

- AMTRAK should forget about competing with other modes of transportation and should concentrate on selling positively those attributes which are unique and appealing about train travel. Basically, the plan outlined above is a method to employ
a self-selection process among a minority of travellers who will
grow to feel they belong to a rather distinctive class in society
who prefer train travel. By stressing that AMTRAK has only a
limited number of seats to sell turns current low usage into a
sense of exclusivity. By advertising and promoting this approach
among the young and the educated and the affluent, the entire air
of travelling inter-city by train will also be more appealing to
the lower middle income and less well educated, since they will
view the process of travelling by train as an upgrading of their
own experiences in travel.

There are dangers, though, in trying to combine a nostalgic novelty with
a mode designated for the provision of transportation services. If
America wants a system of elite travelling museums, it is questionable
whether it should be provided by AMTRAK, the same Corporation which
operates the businessman's Metroliner, and which is in business, the
Act would lead one to believe, to move people from A to B, rather than
to provide a joy-ride to nowhere in particular.

There is, of course, nothing wrong with joy-riding per se. The
problem is, however, that if a large system of daily trains is to be
kept reasonably filled, a relatively low general fare must be charged.
With the high capital and manpower requirements of a regular scheduled
service, this means high levels of subsidy. The form of pricing in use
prices AMTRAK as a transportation service. AMTRAK is priced relative
to fares on other modes, rather than in relation to its costs. Many of
the joy-riding passengers will, nonetheless, be earning a consumer
surplus (benefits they didn't pay for) because, in using the train as
a form of consumption, in effect as a vacation in itself, they will be
deriving benefits from these unpriced externalities.

Mr. Y. of the Federal Railroad Administration felt that the long-distance
train "belongs more in the National Park Service than it does in a
transportation agency," and Mr. X, also of the F.R.A. suggests how such "nostalgia" service could be marketed economically separate from trains which provide for "transportation" needs. He advocates a two-tier system with a "cattle-car" approach to basic service, and a luxury "cruise" service priced on the basis of fully allocated cost, and marketed through the travel trade. When air travel developed to such a stage that ocean service lost viability as a transportation mode, almost all scheduled service ceased, and the ship was developed to provide for a luxury cruise market. The same could happen with rail.

Whether trains should be retained for "nostalgia" reasons is, of course, a value-judgement. But the Act specifies, and the service is scheduled, as a transportation service. If the base-line of passengers on these trains are travelling for transportation reasons, because they find AMTRAK the cheapest, fastest, or most convenient method of getting from A to B, then all well and good for additional traffic to be attracted to the service for the sake of riding trains. Under such circumstances, marginal revenues from such travellers could exceed marginal costs, given that fixed costs were already allocated. But, if the fixed cost facilities are being provided for a clientele concerned with travel rather than transport, then it must be doubted whether the present comprehensive pattern of long-distance "luxury" services is either needed or desirable, and whether this particular segment of the market could not be recognised for what it is and could not be otherwise better served at lower cost and with greater efficiency. Special "cruise" service could be planned to cover particularly scenic routes, make stops at points of interest, and be marketed as a vacation. The comprehensive, inter-connected national "service" of the type provided
now would not be continued.

The "cruise" trains might well still fail to cover their fully allocated costs, though the circumstances under which they would be operated would present an opportunity for marked improvement over the financial performance of the current service, and allow it to be budgetted as a separately-identified item. Congress could then decide whether this was justifiable.

That the business market is inevitably lost might be a reasonable conclusion to be drawn from the manner in which resources have been allocated. With low capital investment for high-density short-distance corridors in which rail could maximise its inherent advantage as a transportation provider, and a service oriented (intentionally or not) towards the occasional casual casual wanderer, rather than the regular traveller in a hurry to make an appointment, it is hardly surprising that the bottom has fallen out of the market for "serious" travel by train.

Transportation benefits have been confused with "consumption" benefits with the result that neither have been properly provided for. It may be questionable whether further investment in "corridor" markets is warranted. It may be debateable whether "cruise-train" vacations should be subsidised at public expense. But, it cannot be doubted that the existence of "consumption" externalities is not adequate reason of itself for retaining comprehensive pattern of long-distance rail passenger services of low "transportation" utility. Theory A4 is rejected.
Equity is a goal of any Federal program. It is not fair for rail passenger service to be concentrated in just a few corridors, because the whole nation is paying for it through Federal taxation.
"You have the utility problem," declared L. Fletcher Prouty, Senior Director, AMTRAK Public Affairs. "The telephone company would like to have all the telephones in the city and forget the farmers in the outlying districts, and make more money. The railroads have to serve the country as well as the city; that goes along with the concept if franchise."

As Paul Molloy, Minority Counsel, House Commerce Committee, characterised the situation, America has an "egalitarian system that says that everybody is entitled to everything." Thus, as Ira Silverman, Director of AMTRAK Marketing, said: "You have groups in regions such as the South-West which we don't feel are as appropriate for inter-city passenger service as say the North-East or the Upper Mid-West, and their return is that they're being discriminated against."

According to Randy Mills, Legislative Aide and Press Secretary to Representative Pat Williams (D, Montana), Montana residents saw AMTRAK's desire to cut the former route through the south of the state as explicable by the need for Northeast Corridor finance. As he said, "Why should someone in Montana wish to fund AMTRAK to compete with Eastern over a very small, specific, route section, when there's no benefit to them altogether?"

John Ingram, Federal Representative, California Department of Transportation, felt that his agency's support for the "Superliner" car acquisition was justified because "we will get some equipment, some money from AMTRAK west of the Mississippi. It's about time. The people of California are getting tired of subsidising train service in the Northeast Corridor."
Another Californian view of the problem saw the picture quite differently, though also through an equity filter. As Barbara Beatty, Legislative Assistant to Representative Rousselot (R, California) put it: "The Congressman would feel he would like AMTRAK to be self-sufficient and have fares so that the riders would carry the expenses of the rail and that the person who for some reason can't have ridership there wouldn't have to be taxed to pay for the other person."

"I think it's questionable from the matter of equity if we are going to use public funds to create a super railroad so a bunch of rich businessmen can ride trains at 170 mph," said Ross Capon, Executive Director, National Association of Railroad Passengers. And, "no matter how economically efficient the corridors that are subsidised are, there are some states that are putting in money and getting nothing," cautioned the pragmatic John Lussi, Director, Rail Planning and Marketing Bureau, New York State Department of Transportation.

Mr. Y. of the F.R.A. complained that members of the AMTRAK Board had argued to DOT that "a state ought not to have to subsidise a train until it's had its first one provided at national expense." But, said AMTRAK Congressional Affairs Officer, Tim Gillespie: "You want to try to serve as many of the taxpaying people as possible; it becomes very difficult to justify everybody paying a portion of their tax-dollar when they're not getting anything from it."

And, Congress found the cuts recommended by the Secretary of Transportation in DOT's 1979 restructuring report to be unacceptably heavy. They then proceeded to restore proposed cuts according to a "Regional Balance Amendment" introduced by Representative Duncan (D, Oregon)
This divided the country in four, then required one train to be added back from the proposed cuts to each quadrant. While such an arbitrary system of allocation could not be justified on efficiency grounds, it could be seen to accord with Mr. Molloy's definition of "egalitarian."

Theory A5 is a difficult one to evaluate because judgement cannot be meaningfully made on the basis of quantitative data analysis. It is different from the earlier Theories examined, all of which promote the maximisation of some benefit; Theory A5 contends that equity demands the distribution of some benefits to all States, even if this is not the most efficient arrangement on an aggregate basis.

William Druhan, Secretary, National Conference of State Rail Officials, Association of State Highway and Transportation Officials (1980) writes that:

AMTRAK was designed as a national railroad system. To date "national" has been interpreted to mean a connecting system from coast to coast and border to border with as many areas served as possible. A growing faction, however, believe that "national" should be defined to mean merely that it is the only system going.

The first view is consistent with the idea of franchise: that in return for the grant of monopolistic powers, less lucrative but socially deserving markets must be served. The second view is one rooted in the concept of efficiency.

If followed through logically, however, the two positions may not be found to be as immutably mutually exclusive as they might appear at first sight. Impositions on the beneficiary of franchise rights imply that there is an interest which should be served which would otherwise
lose out, and which the holder must therefore be obliged to provide for.
In transportation, though, this can only make sense when not only is
the service in question the only one available, but also when it
constitutes the best alternative which might be available, bearing in
mind relative costs and benefits.

But, although AMTRAK may have been traditionally viewed as an edifice
unique, and separately from consideration of other modes, it is rarely
the only transport available, and should be considered in the context
of the total transportation system.

One Congressional view dissenting from the "franchise" idea was that
of Joseph LaSala, Legislative Assistant to Representative Hagedorn
(IR, Minnesota); he did not think it was necessary for all States
to have rail passenger service: "It's important that all States and
all the people have viable transportation available to them," he said.

It is possible that some areas might be better served by other modes
than AMTRAK, and that funds currently committed to rail service would
produce better results for such regions if accordingly re-allocated.
A rural area might, therefore, derive greater benefits from a well-
developed bus system than from an erratic daily long-distance train.
The concept of "fairness" that implies that each area must have equal
rail could then lead to unequal results in that the relative
attractiveness of rail, and of the various types of rail passenger
service, is not uniform across the country. The imposition of an
efficiency constraint thus does not harm the "fairness" argument
provided it allows of re-allocation of resources in a way that enhances
transportation provision.
If this is the case, then provision of corridor service for Mr. Capon's "rich businessmen" is not necessarily inequitable at all. If rail is the best form of transportation in dense corridors, but is less appropriate elsewhere, then perhaps rail should be provided in the former case, but something else in the latter.

During my interview with William Druhan, he threw the net even wider in suggesting alternative action for Congress concerning rural areas: "You give me a train; I'll give you farm support." Regional priorities may vary, and fairness may imply according prime status to each region's first concern, rather than equal concern to all concerns over all regions.

As will be discussed further in Theory B2, it is human nature that to take something away which you already have seems more profoundly unfair than to not give you something which you don't yet possess. A general fault with studies is that they have not considered this. They have not looked at the full range of possibilities. Some have concerned themselves solely with cutting (eg. DOT). And corridor studies have been restricted to consideration of traditional multi-car equipment operating in well-populated areas.

There may, however, be a case for the introduction of low cost, low density "railbus" service alongside the development of the more dense corridors. Although the corridor exponents might argue that such service would carry few passengers, and be little more than symbolic, it is perhaps that symbolism that matters, and the fact that it could be

\[\text{Note that the railbus could be seen as preserving "rail" service which symbolic value an ordinary bus could not have; it is therefore a second-best solution when rail service cannot be discontinued altogether because of peoples'} (\text{albeit illogical}) \text{ interpretations of equity. See Theory B2.}\]
seen as doing something useful for a particular community could help no end in rallying support. It would help satisfy the need for "fairness" to be seen to be done, and would be a move towards "to each according to his need" instead of the wasted prescription of the same medicine for different diseases.

Fairness in the abstract might imply going even further and trading off transportation needs against those in other sectors of each regional economy. But, the short-distance railbus idea is a more practical proposition for the less densely populated areas given the way in which people see justice.

As Druhan (1980) concludes, very much in accord with these sentiments:

In short, rather than selecting a small number of specific city-pairs to be eligible for federal financing and excluding the rest of the nation, a program should be developed permitting all areas some amount of assistance to overcome its needs to transport people. Everyone must have an opportunity to get a piece of the pie. It's the American way.

Adherence to the American way does not, however, require a dated and inefficient long-distance system to be retained. There are better choices available.
INTERLUDE

Theories A recognise that AMTRAK exists to achieve something. That there are goals which determine how it does its job. And that, on the basis of these, following comprehensive evaluation, AMTRAK selects from amongst the alternative strategies that one most likely to maximise attainment of those goals.

This is, essentially, a presentation within the classic "rational actor" model. As Allison (1971) describes it:

The rigorous model of rational action maintains that rational choice consists of value-maximizing adaptation within the context of a given payoff function, fixed alternatives, and consequences that are known (in one of the senses corresponding to certainty, risk, and uncertainty).

The concept of rationality is attractive because it implies that we know what we want, can find the best way of achieving it, can then activate our purpose-built machinery, and realise it. Rationality implies that we can shape our destiny; it is a key assumption in human activity because it gives us faith in organisations, and a feeling of control. It minimises insecurity, shunts self-doubt into a siding.

It is therefore a reflex action to start any inquiry with a search for evidence of the results of rational behavior. To set out the goals, and show how they are being achieved. In this case, the search is in vain.

Goals were defined. They were stated in relation to the stated aims of the Rail Passenger Service Act of 1970 subsequent Congressional discussion of it, and in relation to the functions which those interviewed felt AMTRAK should serve. The extent to which these goals were served by the AMTRAK system was then assessed. In each case the
network was found to be unsuited to their satisfaction. Rail's current optimal position in relation to the characteristics of other modes was found to be in the "corridors" market. Should there be any role for inter-city rail passenger service at all (and this was not proved), this was where rail's inherent advantage could now be exploited, and where it could logically be best integrated into the totality of transportation systems. Long-distance services were not oriented to social needs, but rather to nostalgia trippers who could be better and more economically served by special "cruise trains" sold as a vacation package, and making no pretence at providing transportation services. Any potential for energy saving lay in corridor markets.

And equity was not maintained by providing regions with token services which did not serve their requirements. There might be a case for railbus service in low density areas to meet public expectations of equity. Such service would also better serve social and energy goals.

In effect we have systems failure. This is the theme taken up in the remainder of the Theories here presented. Each one attempts to tell the "story" from a particular perspective.
THEORIES B
Members of Congress are not interested in achieving the most efficient rail passenger transportation system for the US, whether in terms of economic utility or with respect to availability and appropriateness of other modes. Due to weak party organisation and identity, they feel very much on their own and are interested, rather, in pleasing their constituents in order to be re-elected. Members therefore lobby for routes through their Districts.

Though individual actors, scholarly critics, and media commentators typically stress a single priority or evaluative scheme, the political system as a whole seems to strive for inclusiveness and broad support rather than for theoretical consistency or elegance. That is, it seeks to accommodate new demands as they emerge by means, insofar as possible, that leave previous settlements (programs and administrative arrangements) undisturbed, that involve the least possible disruption for private enterprises, and that involve the least possible inconvenience and annoyance for individuals who have built their life-styles around the expectation of system stability... The political system strives to maintain the security of its key institutions and personnel as it responds to outside change stimuli. Virtually all institutionalized systems exhibit such security-oriented behavior in high degree. Systems vary widely in the strategies that they utilize to pursue security, however, and in the priority that they accord it relative to other key objectives.

The American political system in this respect is something of a paradox. On the one hand, its task is to manage an extraordinarily dynamic society, which throws up a constant stream of new demands and opportunities. Numerous officials in the system, moreover, are highly attuned to the need for constant adaptation in the face of changing conditions. On the other hand, the organisation of the political system itself is such as to generate an extreme orientation towards caution. The system is most notably characterized by fragmentary authority, weak party organization, and minimal ideological coherence. It affords numerous opportunities for veto and/or delay during the life of any bill and subsequently during the implementation of any policy. With party organization rudimentary in most locales, with party identification weak among the electorate, and with nomination by direct primary rather than by the favor of party leaders, moreover, individual elected officials feel highly vulnerable (even when representing supposedly safe districts) and very much on their own.

- Altshuler (1979)
Allison (1971) has developed a model of Governmental Politics (his Model III) as an alternative to the Rational Actor. In this, players act in terms of no set of consistent objectives, but rather according to various conceptions of national, organizational, and personal goals; players make government decisions not by a single rational choice, but by the pulling and hauling that is politics... Each player pulld and hauls with the power at his discretion for outcomes that will advance his conception of national, organizational, group, and personal interests... "solutions" to strategic problems are not found by detached analysts focusing coolly on the problem. Instead, deadlines and events raise issues and force busy players to take stands... Where you stand depends on where you sit.

Theory B1 focuses on the role of the political process in shaping AMTRAK's perspective from one narrow perspective - that of the individual Member of Congress at risk. The premise of this Theory, supported by virtually every interview conducted for this study, was that given weak party identity and organisation, Members are made to feel that they have particular responsibilities to their Districts. They have to satisfy them even when it is not in the greatest national interest, or risk not being re-elected. Thus, while they may be able to pick up some of the kudos resulting from the inauguration of new service, this will only benefit them if the service benefits their District. Similarly, voting for removal of service through their District could be seen as treasonous, and a dangerous move politically.

Further, although the issue at hand may demand long-term consideration, the interval between elections is short, and Members will see it to their advantage to satisfy their constituents now, rather than to promise long-term restructuring; by the time any such benefits arise, they may have lost the election. As Coates (1979) points out: "There is no constituency for the future."
Thus, each Member pursues his own individual short-term interest. And, as Taebel and Cornehls (1977) say: "responsibility for transportation policy is so fragmented that any cohesive and integrated system is difficult to attain."

In following his own interest, however, each Member knows that each other Member is at similar risk to he and, especially when there is little spelled-out Party orthodoxy and unity on the issue at hand, will be cautious not to disturb their interests unnecessarily lest they, in retaliation, disturb his. As Argyris and Schön (1978) see it, individuals know what is wrong but don't want to discuss it for fear of blame on either themselves or others. The problem therefore gets camouflaged - hidden, disguised or denied: "The fact that counter-productive activities exist and are not discussably means that people are, in effect, in collusion to deceive the organization, and each other."

Under such circumstances, the status quo is often the safest position to fight for. And, as Bachrach and Baratz (1962) attest:

While advocates of change must win at all stages of the political process - issue recognition, decision and implementation of policy - the defenders of existing policy must win at only one stage in the process. It is difficult to avoid the conclusion that all political systems have an inherent "mobilization of bias" and that this bias strongly favors those currently defending the status quo.

"The resistance to change exhibited by social systems" has been termed "dynamic conservatism" by Schön (1971); that is: "a tendency to fight to remain the same."

Such change as may be examined will tend to be only incremental. "Only those policies are included that deviate only slightly from the status
quo." (Cobb and Elder, 1972).

As Schön continues:

Recognition of dynamic conservatism explodes the rational myth of intervention pervasive in official rhetoric, which envisages social change as a process made up of analysis of objectives, examination of alternatives, and selection of the most promising routes to change. Quite apart from its questionable claims to knowledge, the rational myth assumes implicitly that transformation occurs in a vacuum rather than in the plenum of self-reinforcing systems. Variants of the myth assume that rational plans will implement themselves, or they leave the question of implementation to a mysterious process of sales, persuasion, or politics.

The following evidence shows how Members of Congress act to preserve what they see as their own interests, and how, in the collective, this results in a strong "dynamic conservatism" holding on to a basic pattern of inter-connecting long-distance routes for AMTRAK.

According to Deborah Swartz, Special Assistant to the House sub-committee on Transportation, "it's extremely difficult politically to eliminate train service. There may be one passenger a day that uses it, but it's very difficult. And every Congressman not only wants a train in his District; he wants it to go through at 9 in the morning and 5 in the evening." While she felt that "the majority of Congress wanted to see the decisions on AMTRAK made on firm economic grounds," she thought "that if there was no Congressional involvement at all with AMTRAK, you'd probably end up with a more efficient route structure."

Paul Molloy, Majority Counsel, House Commerce Committee, was one of many others taking up this theme: "as long as you have Congress deciding where the routes are going to be, you have to have a majority in the Congress support whatever the proposal is. And the only way to get a
majority is to cross a great number of states." And, confirmed William Druhan, Secretary, National Conference of State Rail Officials, Association of State Highway and Transportation Officials: "There is no incentive for a Member to vote for money that is not going to his District... So, you Gerrymander your system to go through as many Congressional Districts as possible." AMTEAK "look at it as running a railroad, and Congress looks at it as pleasing a bunch of constituents... There is a financial concept in AMTRAK that is not available to Congress. He looks only to votes and pleasing a person."

As Representative Pease (D, Ohio) testified before the House sub-Committee on Transportation and Commerce during the April, 1979 Hearings on the DOT (1979) proposed AMTRAK route restructuring (US Congress, 979b)"

If you cut the AMTRAK route system by 43 percent, to a large extent you are cutting support in Congress for AMTRAK by 43 percent. You will not have as many Members of Congress at your hearing next year if you are trying to provide the money to maintain the AMTRAK system or improve the rolling stock of AMTRAK or the roadbed or anything else because, let's face it, to a large extent the Members of Congress are more interested in our own districts in our own States. And to the extent that this system saves a relatively small amount of money by cutting out service to a great many States and a great many Congressional Districts, it undercuts the entire support in Congress in the future of AMTRAK.

From a management perspective, Howard Henry, Director, AMTRAK Market Planning and Forecasting, said the Congress: "will give you the best they can without hurting anyone. They're not going to add service at the same time they're cutting back service somewhere else." As Matthew Scocozza, Senior Minority Counsel, Senate Commerce Committee, bemoaned: "Unfortunately, AMTRAK service is considered a mark of political success, and a Member may say I want that particular train to run through my state."
We have here, in essence, a very fragmented picture, of emphasis on individual interests, rather than the "national" image envisioned under Theory Al. As John Robbins, Legislative Assistant to Representative Paul (R, Texas), said: "by patching together these various regional interests, you wind up with what might be called a national system... I don't think anybody sees it as an integrated whole. I think everybody sees it as just their part." Despite this pattern of individual interests, though, the emphasis is not on developing particular services to benefit respective regional systems, but to support a supposed "national" system in order to maintain political support. Louis Rossi, Director, Rail Planning and Marketing, New York State Department of Transportation, summed the situation up thus: "there seems to be more attention to having one train somewhere than a good service in any one place."

In any normal subsidy situation, cash for capital is more acceptable than money for operating deficits. As Ross Capon, Executive Director, National Association of Railroad Passengers, pointed out though:

For AMTRAK it has been the other way round. When you cut operating deficits you have an immediate outcry from the constituents who will lose their train; the longer-term impact is that you're providing lower quality service, but that it's spread out... The problem is, the weakest routes are the most politically potent; they wouldn't be there except for the politics.

This political bias towards operating subsidy is reinforced by the lack of political gain to be had from capital investment. As Greisman (1980) put it:

Without the added incentive of job-creation and secondary parts orders from subcontractors, new railcar purchases are unattractive propositions for Congressional budget-watchers. This is increasingly so in view of the general balance of trade sustained by the US in recent years. Since the majority of
manufacturers are located in Europe and Japan, massive orders for new equipment provide few spin-offs for US industry and labor. The result has been a chronic equipment shortage and the ordering of bad equipment since nothing else was "politically" available.

Following this political argument through, we can see what happens with the relatively small amount of budget apportioned to capital.

Referring to discussion over the Passenger Railway Rebuilding Act, 1980, one Congressional staff member commented (on assurances of anonymity) that decisions:

made certain that trains could be used in the national system. There seems to be a great fear of buying trains that could only be used in one spot, and staffers on the House and Senate committee on that Bill specifically objected to any provision which would allow cars purchased with that money not to be available for national use.

There are many specific examples of politically-induced service. The most recent spate followed the 1979 DOT restructuring plan which recommended a 43 percent cutback in AMTRAK route mileage. The restructuring process could be described as collectively-induced dynamic conservatism spiced by individual power struggles of the powerful or the opportunist. As ex-AMTRAK President, Paul Reistrup, said: "Interesting in the restructuring to see where the new trains started operating were in the States where the political power now rests."

There was a widespread belief that some of the weakest trains in the system — those operating through West Virginia — had been preserved due to the influence of Representative Staggers (D, West Virginia) and Senator Byrd (D, West Virginia). Alan Ciamporcero, Legislative Assistant to Representative Van Deerlin (D, California) asserted that: "Mr. Staggers has always had trains without any people on them at all."
Stuart Serkin, Legislative Assistant to Representative Stack (D, Florida) bemoaned the loss of a Florida service which had been one of the best according to the criteria used in the Congressional review of the restructuring. "We had to lose so that they could have their less-used trains," he said. "Really, the way it went was not so much that every region got one as every Virginia or West Virginia Congressman got them."

An interesting example of power politics lies in the efforts of Representative Conte (R, Massachusetts), member of the Transportation sub-committee of the House Appropriations Committee, to have the Montrealer, a train which passes through the west of his state during the middle of the night en route from Washington to Montreal, retained. During Hearings before the sub-committee in February, 1979 (US Congress, 1979a), this train, which DOT had recommended be discontinued, was extensively discussed. Mr. Conte had the following comment to make:

I'll tell you one thing. I don't like to offer any threats, but I now sit as a ranking Republican on Appropriations. That means I have a vote on every sub-committee, and I am going to look at the Foreign Aid bill with a jaundiced eye this year. I don't care how many calls I get from the Secretary of Treasury and the President of the United States and everybody else saying, Mr. Conte, we need you. If they can cut my Montrealer out, I can cut a few little trains out in that Foreign Aid bill.

Ross Capon explained that:

In the case of the Pacific Northwest, the train through South Idaho was weaker than the train through South Montana, yet it was the Idaho train that was kept. The criteria that were used were largely political. The Chairman of the House Appropriations sub-committee on Transportation was Robert Duncan of Portland, Oregon. He originally supported the Brock Adams plan to cut the route structure by 43 percent which would have meant the loss of both. However, his constituents were outraged at his position, and he observed Mr. Brock Adams caving in to essentially Senator Robert Bird of West Virginia, Senate Majority Leader, to keep The Cardinal running.

When Duncan found out about that he was very angry because he
knew The Cardinal on a statistical basis was even weaker than South Idaho, so his position was: why should I take all this flak from my constituents on principle when someone else in the country is getting an even bigger favor in the sense of that train being weaker than mine is?

So, Robert Duncan flirted with the idea of the route freeze, which we supported, and finally developed a "Regional Balance Amendment" which provided that there were four quadrants in the country, and that if any of these quadrants did not get a train added back to Brock Adams' plan, that train would be added back one train per quadrant under the regional balance provision...

Duncan observed that the statistics on South Montana were stronger than his train, so he put a further provision in his regional balance provision that a train was not eligible to be added if a substantial proportion of its mileage was duplicated by another route... Right through 1979, the political necessities of the various Chairmen dominated the process. Staggers, of course, is the reason why the Shenendoah was kept, which is largely a commuter train, and largely empty west of Cumberland, Maryland. Now, some people hate Birch Bayh of Indiana, because he is the Chairman of the Senate Appropriations sub-committee on Transportation {in fact, no longer, since he lost the election}, and he allowed his National Limited to die without even putting up a fight, even though the National Limited was stronger than many of the trains that were kept. And, I frankly have to say that he showed a little more integrity than some of the others. It grates on me to say that someone showed integrity by allowing a train to be discontinued, but I think in the context in which he was operating, based on the information which he had, his motives were a little more respectable than Mr. Duncan's.

During the Hearings before the House sub-committee on Transportation US Congress, 1979b), Representative Kogovsek (D, Colorado) compared the proposed rerouting of Chicago - Los Angles service via Denver, Ogden, and Las Vegas unfavorably to the current route of the Southwest Limited "my pet train" which made three stops in Southern Colorado, which he represented. Representative Santini (D, Nevada) had a chilling reply:

I would urge my good friend from Colorado, however, not to detract from that marvellous new addition to the AMTRAK system that runs from Ogden through Las Vegas, Nevada, to Los Angeles, because that is one of the enlightened aspects of the proposal of the Department of Transportation... I am going to be particularly sympathetic to the needs of some of my friends from the rural Rocky Mountain West because I empathize most readily with your problems.
Perhaps the strangest result of the restructuring was the introduction of Mr. Santini's new train, The Desert Wind. I had occasion to use this service last year to travel from Salt Lake City to Las Vegas. The train left Salt Lake City over an hour late, at 2:15 am, having been held at Ogden for the arrival of the San Francisco Zephyr from Chicago. This is very much a traditional "inter-connecting" train, and it was clearly intended that way. The DOT (1979) plan had called for the termination of the Chicago - Los Angeles Southwest Limited, and had recommended that the Ogden - Los Angeles service be started to enable through travel from Chicago to Los Angeles (by way of the San Francisco Zephyr to Ogden) to continue. In the end, said Howard Henry, "that proved politically unpopular and operationally infeasible." But, said Ira Silverman, Director of Marketing at AMTRAK: "The Southwest Limited was not dropped, and this leg was still added in. The reason it wasn't dropped, even though the reason for putting it in originally had disappeared, was because of Senator Cannon (of Nevada), I'm sure." This was aided, said Mr. Henry, by the fact that "the new service was in the DOT plan, so it had a certain validity of its own," even though the rationale for its being there had evaporated.

There is also evidence of distortion in the selection of potential corridors for study, even though the corridors idea is based on the notion of selection of the most economically viable proposition. I asked William Druhan how the potential corridors were selected.
"Politically," he replied, "who's got the clout." And, Alan Ciamporcoro explained that Representative Van Deerlin (who represents San Diego) "wanted money just for Southern California. The only way to get that was to co-operate with a program of new emerging corridors all over the
country; build a coalition." One Congressional staff member told me that the Sacramento - San Jose corridor did not appear on the original list sent to AMTRAK. "Then Mr. Matsui gets on Transportation and Commerce and it appears. That's as political as you can get." Thus, although the study is not being hindered by the de facto rights of previous non-viable systems, implementation of such impedimentia already risks happening.

As Greisman (1980) said:

The trend towards "political trains" could keep AMTRAK going for several years as a servant of pork barrel legislation and funding, but as a viable system of nationwide transportation that is responsive to social needs as opposed to political patronage, it could fall far short of the mark.

Indeed it could. The evidence above suggests that there is strong reason to support Theory B1 - that Congressional self-interest preserves a system of far-flung inter-connecting long-distance trains which do not serve the nation's needs. But this is best further tested in the context of the other Theories here to be presented.
Members of Congress have a large number of items on their agenda, and cannot be well-informed about everything. They are only partially-informed about AMTRAK, and that information which they do receive not only represents a biased rather than random sample of the total information field, but is also subject to further cognitive filtration. Public misconception fuels Congressional misconception which leads to misguided action, the result of which is the preservation of the basic long-distance inter-connecting system.

People like to watch trains but they don't like to ride them, so AMTRAK is not providing a system of transportation but a form of kinetic art.

- John P. Fishwick, President, Norfolk and Western Railway, Trains, March, 1978
Theory B2 is a theory of imperfect information and perception processes. In Theory B1 I suggested that Members of Congress deliberately favor their own Districts in requesting AMTRAK service, even though the resources to be committed to providing that service might be more appropriately allocated elsewhere, and even though such action might distort the total efficiency of the AMTRAK system. The implication behind this is that the Congressman is appraised of alternatives; he has the necessary information with which to make a sound decision. But he invariably favors his District to protect his personal security.

There is evidence to suggest, however, that Members of Congress arrive at conclusions constructed on only a limited data base. Further, the reception of that information may be selective because of the information environment within which the Member finds himself, and information, once received, may be filtered, either for ideological reasons, or sub-consciously according to the pre-set conceptual frame into which it is received for evaluation. I look first at how the public view the matter because, as will be seen, an understanding of public perception is essential to comprehension of how Members receive information.

**THE VIEW FROM THE GRASS - UP - THE PUBLIC EYE**

People get attached to all sorts of things they don't use any longer... There's an attachment still in people's minds to stagecoaches. Look how many Christmas cards will have them on the front, yet they existed in that form for less than 15 years and were so expensive that very few people would have had the privilege of travelling in one.

- Dr. Beeching (in Mandrake, 1980) whose 1963 report led to mass discontinuances of rail passenger services in Britain.

The 1972 Louis Harris survey conducted for AMTRAK concluded that it was
"patently apparent" from the results "that there is a powerful mandate in the country for massive federal assistance to keep inter-city passenger rail facilities afloat, and, more than that, to see that such service is improved a great deal." In 1978, the Harris organisation found that:

when Americans were asked to rate the importance of nine proposed improvements in the nation's transportation system, improved inter-city rail passenger travel finished behind only improved auto safety and improved commuter mass transportation between cities and suburbs as an important priority.

And, a study by Peter D. Hart Research Associates for DOT in the same year reported:

We asked respondents, if it comes to a choice between having the federal government no longer cover the AMTRAK deficit and ending most AMTRAK passenger train service or continuing the present situation, which alternative would they favor? We find that only 20% would opt to cut off federal financing and end most AMTRAK service, while a majority (53%) would want to continue the present situation. This is not a regional majority: it includes 50% or more in each region of the country, and in cities, suburbs, small towns, and rural areas. It includes majorities of almost every demographic group, even among the retired - a group which because of limited income often opposes public spending that might lead to higher taxes - 48% favor continuing the present situation and only 24% would allow most AMTRAK service to end... Considering the large number for whom termination of passenger train service would make no difference, it is all the more striking that a majority indicates a willingness to continue the present federal subsidization of AMTRAK deficits.

Said Mr. Y. of the Federal Railroad Administration:

We spend a lot of time here wondering why it is that there is so much public support for passenger service when so few people ride it. The constituency for passenger service is in order of magnitude larger than its users, and there clearly is some sort of an irrational desire for passenger service. Mayors of towns, newspapers, and people who will never use the train will campaign for it... So people do have this desire for service they don't use. And, it's seen by people as a matter of entitlement.

Clearly, inadequate information has a role to play in guiding public opinion. Back in pre-AMTRAK days, an SRI (Brandes and Lazar 1966) study
of rail passenger traffic in the West found that:

not only is the public generally uninformed about the true state of passenger trains but there is a large amount of misinformation current on the subject. The basic piece of misinformation that the railroads need to combat is the notion that rail passenger service is cost competitive with other modes of intercity passenger transportation. The data needed to prove the cost inferiority of passenger trains as compared with airplanes or buses are easily obtainable from public sources. Yet the public is generally unaware of them.

Yet, the problem appears to be more than just information - it is a combination of misinformation and love which, in the case of AMTRAK, certainly blinds. As Brock Adams, then Secretary of Transportation testified at Hearings before the House Transportation sub-committee in April, 1979 (US Congress, 1979b):

We have public meetings and the public attending their meetings still think that there is a downtown railway station, with trains going to every place in the United States. They do not go down to the train station. They are talking about riding the trains, but a great many of the people in the community would just like to have it there; they do not ride it.

Paul Reistrup, ex-President of AMTRAK, gave me a more explicitly psychological explanation: "Well," he said, "there's an emotional tie to the railroads that helped build this country. There's a guilt complex. People feel that they ought to be using the trains, but they won't."

Other comments confirmed that there might be some plausibility in this explanation. Tom Gillespie, AMTRAK Congressional Affairs Officer, remarking on the widespread affinity for AMTRAK declared that there was "a lot of interest in each community that a train runs through. I think they view the loss of rail passenger service as a sign that the community is dying; and that's why they're always trying to reverse that."

Paul McBride, Assistant Secretary with responsibility for railroads,
Massachusetts State Executive Office of Transportation and Construction, gave an example. "You have to provide for certain local pride, local prestige accommodations," he said.

You've got to recognise the Boston - Chicago Lake Shore Limited is a symbolic service, rather than a real one serving a large market... I consider that one of those prestige trans-continental trains as compared to the Northeast Corridor services... I think it's prestigious for Massachusetts. Worcester people, and Springfield people, and Pittsfield people. I think they like having a train; I'm not sure they ever use it.

There is evidence to suggest that railway psychosis has a conservative thrust. As Howard Henry, Director, AMTRAK Market Planning and Forevasting, said: "the people won't appreciate the add-on, but they're certainly going to remember what's been cut back."

And, according to Ross Capon, Executive Director, National Association of Railroad Passengers, "the image AMTRAK has in any given location is almost completely a function of the type of service it is providing at that location." In other words, AMTRAK will be demanded most vigorously where it already is. I asked Mr. Y. whether this would be affected by the degree to which alternatives were available. "That's not the issue," he replied. "It's an emotional issue. Rationality has no part in this process."

For the majority of people outside the Northeast Corridor, the train hardly exists; for those under 35-40, observed Peter Derrick, Director of Policy Studies, New York State Legislative Commission on Critical Transportation Choices, the train has not been important in their lives, the car having had the most significant impact. For older people, the train has passed out of their thoughts as a transportation mode, while for the younger group it never was one. As a result, neither set demands
new high-speed rail links because it is the archaic concept that is imprinted on the psyche of the older group, and it is this same vision - of a dated concept coupled with modern images of the car and the 'plane, that fail to stir adventurous rail ideas in the young. On the other hand, it is federal money coming into the locality, and there is the general feeling that the train is a "good thing" (for energy or the other reasons extolled over the media) which, together with the fact that it is such an insignificant issue anyway, does not warrant efforts to have spurious service eliminated.

The people most actively involved in promoting the cause of the train are those in communities which already have service, and who define the role of the train in terms of its historical position; and that in somewhat nebulous terms. Gordy Peters, Chief for Rail Marketing, New York State Department of Transportation, characterised the rail lobby as having "a desire out of nostalgia to maintain the old." The warhorse of the rail lobby is that National Association of Railroad Passengers which, during its history, has emphasised preservation of the present system, other service being regarded as highly desirable, but extra. To judge from NARP's newsletter, one gets the impression that they are fighting a Holy Way. "The Niagara Rainbow Lives," hails the September, 1978 issue. December, 1978 headlines: "OMB: Kill AMTRAK," and July, 1979 proclaims: "Full Trains Near Death." Emotion abounds to fuel public support for AMTRAK. Neither has it been absent from the media.

Commented Greisman (1980):

Much of the press attention given passenger trains tends to deal with long-haul expresses that are about to be cancelled after years of service. When the Southern Crescent made its last run in 1979, the print and electronic media provided extensive
coverage of its glamorous past and dismal present. The mass
cancellation of thousands of short lines, commuter runs, and
local services since World War II typically receives little
notice.

An article published in the Washington Monthly by Phil Primack (1979),
a journalist from Billings, Montana (which was handed to me in Montana
Representative Pat Williams' office as illustrative of the way Montanans
felt) is a good example of this. It bitterly mourned the passing of the
"North Coast Hiawatha" thus:

The railroad station at Billings is old, clean, wooden and
deathly quiet, except when the long coal trains roll past along
Montana Avenue. We had a passenger train that used to come
through Billings on the run between Chicago and Seattle. They
called it the North Coast Hiawatha. It's dead now, been dead
since October - the victim of a head-on collision with a
thundering herd of numbers, statistics cooked up at AMTRAK
headquarters in Washington to justify killing off some trains...

The National Association of Railroad Passengers (NARP) came up
with data showing that trains like the Hiawatha and the doomed
National Limited... were coming close to meeting even AMTRAK's
criteria. AMTRAK's own numbers - released only in slow dribbles
without the usual explanatory press releases - showed the
Hiawatha at 140 PM/TM and 7.9¢ "avoidable loss" for fiscal 1978.

Primack quotes an ex-Hiawatha electrician thus:

I went to the platform in Billings and told people that just
about every toilet was frozen solid. They still got on - and
a lot of them were elderly people. Just imagine what our
ridership figures would have looked like with thawed toilets.

Emotion is a driving force of the rail lobby, and it is a force which
calls for conservation rather than change. If people in Montana will
ride trains with frozen toilets, then obviously there is a need for
rail passenger service in Montana. Isn't there? If we further add
the publics which tacitly support AMTRAK - through ignorance, nostalgia,
guilt or even, by default, through apathy, then a majority of the
population is for AMTRAK, for an AMTRAK based on what exists already,
however, rather than on the form it might optimally take.

There is, of course, a problem here. Is it up to the lawmaker, or the person whom he represents to establish that which is optimal? Although current AMTRAK service offers little benefits to the people of low population density Montana, when I asked Randy Mills, Legislative Aide and Press Secretary to Representative Pat Williams (D, Montana) whether rail corridors would not be in the greater national interest than long-distance service, he replied:

It depends on how you define the national interest. If the national interest is the government deciding for the people what is good for them rather than the people telling the government what they desire, then you're correct. But, if the national interest is meeting the demands of the people, and believe me the people of Montana demanded this, long-distance service is necessary.

Part of the democratic process involves making available to the people information adequate to enable them to choose between alternatives. Ira Silverman, Director of AMTRAK Marketing, told me that "almost any local group's position is, oh, if we had the train, there'd be lots of people riding it." Perhaps if peoples' perceptions were brought up to date, their attitudes would alter. Perhaps if they were made aware of the cold facts of AMTRAK utilisation in their area, perhaps if they were made aware of the different advantages of the various modes, and of which combination of modes and types of service could best serve their needs, the hold on AMTRAK of low-density areas would loosen. Perhaps then, romantic visions would also fade. If not, perhaps it is up to the political system to disaggregate the nostalgia from the transportation, and allow the public to choose within each, recognising each for what it is, and providing for the public's desires
accordingly. This is not what happens. The political system provides for nostalgia as if it were a desire for transportation, thus confusing the two roles and providing effectively for neither. It is not difficult to see how this comes about if Members of Congress take their cue from the public view as expressed above. We shall see how this, and other sources of (mis)information influence Members of Congress, below.

THE VIEW FROM THE HILL DOWN

Congressmen are not transportation professionals. AMTRAK is only one of a large number of issues which they have to cope with on a day-to-day basis, and they do not have time to be informed about everything. There was no shortage of material from interviews with Congressional staff to suggest that they had only a partial, and sometimes misconceived view of AMTRAK's role and performance.

We have already seen examples of misinformed beliefs. Beliefs that rail passenger service was essential to a region's economy even if of the "train cruise" type. Beliefs that a substantial share of the inter-city passenger market was still carried by rail. Beliefs that rail passenger service inevitably meant energy conservation. Beliefs that rail passenger service could be profitable. Thus, John Robbins, Legislative Assistant to Representative Paul (R, Texas) felt that: "if the government were to get out of the way, if the labor unions were to be treated equally under the law as every other party is treated, a private could easily make a profit on rail {passenger} service." And Randy Mills made this priceless remark when questioned on the rationale for long-distance service through Montana:

They want high volume and low cost, and the only way you can
have that is to have major inter-city transportation. You can't stop at every point along the way and make a lot of money because it costs money to stop the train. And the people who want to get from Chicago to Seattle want to get there quickly.

At Hearings before the House Transportation sub-committee in April, 1979 (US Congress, 1979b), Representative Kogovsek (D, Colorado) was concerned to:

- re-emphasise the desperate need for AMTRAK service in southern Colorado today. In addition to being the only major public transportation system available to more than 2 million residents of our region, AMTRAK is also a cost-effective and energy-saving mode of transportation...
- Lamar, La Junta and Trinidad are the three towns in my District that will be left out in the cold. They have been served by passenger railroads for more than 105 years. We shouldn't change what has worked for a century unless it is proven economically viable. And in this case it surely hasn't been.

In fact, all three towns are well-served by buses. There are five buses daily from Lamar to Denver, four from Trinidad and La Junta. Trinidad also has direct service to Santa Fe and Albuquerque, La Junta service to Wichita, and Lamar service to Amarillo, Dallas and even Miami in one direction, Salt Lake City, Portland and Seattle in the other.

The AMTRAK service through the region, the Southwest Limited, is of the inter-regional type, complete with dining and sleeping facilities and, as we have seen earlier, it is doubtful that such service makes a contribution to energy conservation. Its cost-effectiveness is a subjective matter but, given the nature of the train's luxury facilities, it seems doubtful that much of the cost is in fact effective in serving Mr. Kogovsek's constituents.

As Mr. Y. told me:

I personally did over 100 Congressional briefings. The misconceptions are just incredible, and the lack of will to be educated in the subject is even worse. The National
Limited was generating 1 person a day from Pittsburgh to Dayton, and I'm sure the Representative from Dayton thought it was generating hundreds. People think these trains are profitable. There's no appreciation of the economics at all.

And, said L. Fletcher Prouty, Senior Director, AMTRAK Public Affairs:

Among the Members of Congress are some very strong pro-railroad people. The problem is that, as in any committee action, there are very few specialists; they are generalists, and I don't know any Member of Congress who is competent to understand the technology of passenger railroading. As a result, their decisions are the kind of decisions that would tell us their feelings, but they are not equipped to tell us precisely how they want it done.

As Rondinelli (1973) says: "Policy problems are complex, amorphous, and difficult to define concisely." Further, there is usually an awful lot of information to be had on them. The time-pressed Member of Congress, unable to appraise all of it, must therefore have a framework of analysis to efficiently keep up with what he feels he needs to know. Yet, this framework, far from admitting a random sample of information, will tend to be biased.

Comments Rondinelli:

Factual information, and statistics used to analyze policy alternatives are subjectively interpreted through pre-conceived specialised interests... Quantitative data are rarely interpreted by participants independently of their role perception, subjective expectations, preconceived interests, and ideological predisposition.

This will not necessarily be a conscious matter. According to Kramer (1975):

We are often not aware of the ideological blinders that we wear because of our presence in a particular culture at a particular time and the particular training and experiences we have had.

Sub-conscious filters may thus channel through only that information which meets with such ideology.
Steinbrunner (1974) explores these ideas in his Cybernetic model:

The ability to build stable, reliable perceptual images out of varying stimulus patterns reveals that the mind is routinely capable of powerful logical operations on inherently ambiguous data... The operation of perceptual mechanisms is such as to bring stored information to bear on incoming data in order to build the stable, integrated, meaningful content of conscious perception... Under complexity, cognitive inference mechanisms tend to eliminate trade-offs from a belief system. In doing so, of course, they prevent the analytic process from occurring.

The analytic paradigm pictures a decision process using (via probabalistic calculations) whatever information is available to build a model of critical environmental relationships. The model is upgraded as experience accumulates. The cybernetic paradigm, emphasising that decision makers seek to control uncertainty, pictures a decision maker who makes no calculation of outcome and simply monitors certain information channels, tying his behavior to what is received in those channels via some decision rule.

In other words, the busy Congressman, unable to monitor everything, depends on a reliable source which provides stable information upon which to make a decision. The view received is further reinforced as monitoring of that source continues, and other channels are ignored.

The results of empirical work by Kingdon (1973) provide insight into how Members of Congress reach decisions on various issues. On the subject of interest groups, he reports that:

Congressmen repeatedly said during the course of the interviews that, unless an interest group had some connection with their constituencies, the group would have little or no influence on their decisions. Said one, "It doesn't make any difference to me unless it is from the district." Another said, "We get stuff in here all the time from the Washington offices of organisations and I often don't even read it. Another said his mail from the national organizations "went right in the wastebasket." One Congressman actually fished such a telegram out of the wastebasket to show me, but became very interested in it when I pointed out who had signed.

Kingdon goes on to conclude that without a constituency base, interest groups fail to get through to Congressmen. "Constituents coming to them with petitions for redress of grievances are regarded as entirely
legitimate, but national lobbyists are regarded as merely "pressing," he states.

In the case of AMTRAK lobbying, the National Association of Railroad Passengers has therefore set up an effective machine in providing a wide constituency base. The organisation has a widespread membership, and has been successful in urging its members to write to their representatives. This is reinforced by the existence of regional rail organisations, which also encourage letter-writing activity. The result is that the Congressman receives a large volume of mail from constituents in support of rail service. This helps explain why many Congressional staff felt so strongly that constituents were "demanding" rail passenger service.

At the same time that all this mail is arriving in support, there is virtually none in opposition. The American Bus Association, an industry organisation, does not have grass-roots support. They are restricted to operating at the national level where, as Kingdon suggests, they will be largely ineffective.

Further, as a result of the interest generated by the correspondence of constituents, Congressmen are more likely to be receptive to information from those national bodies that support the views of those whom they represent, than to that from opponents of such positions.

Thus, once National Association of Railroad Passengers have written in to their representatives, material received in support from the national body, and especially if relating to the particular District in question, will be received with interest. So, for example, the office
of Montana Representative Williams was well-informed on the data concerning AMTRAK service through that State, and of interpretations favoring it. There was little conception, however, of how service to that State related to that provided to the rest of the nation, or of how important it was as compared to other demands for rail passenger service.

Additionally, the opposing bus lobby has tended to issue only general systemwide information, rather than attempt to draw the attention of particular Congressmen. And, while the National Taxpayers' Union has opposed AMTRAK, it has opposed the general concept of AMTRAK; it may have led its members to write to their representatives to request general cuts; but rarely has this been aimed at the elimination of particular trains. The contrast in significance between the specific and the general is especially important.

This phenomenon is well illustrated by a statement of J. Anderson, President, Federation of Masons of the World, testifying before the Rail Service Planning Office Hearings of the ICC in 1978. "To see Congress throwing away good money to support a national rail passenger system when black Americans continue to suffer from poverty, unemployment, high infant mortality and other health problems, poor education, and deteriorating inner-city communities is unconscionable," he said. But this is a general concept based picture, much more difficult to identify with than a constituent's request for a specific train service. Similarly, reports from the Congressional Budget Office, the General Accounting Office, and elsewhere which attack AMTRAK only construct
a general picture which, like material from the American Bus Association, is less to be trusted and is more than outweighed by what the Member sees as understandable, pin-pointable, legitimate desires of constituents for benefits to his District.

In certain cases, ideological filtering according to a Member's own beliefs may allow a general rule to dictate action but, usually in such cases, the specific is absent. Right-wing Members of Congress may reject the case for AMTRAK altogether if, for example, a guiding principle is the opposition to government participation in what they see as a private-sector activity. If they feel that the electorate is strongly conservative, then they may be swayed against AMTRAK by general requests for "cuts in waste" from constituents, even though such cuts may be phrased as general philosophy, rather than aimed specifically at AMTRAK. However, for the general to outweigh the particular, it will need to have a strong, firm base of support in both the Congressman's psyche, and in the perceived desires of constituents. It will take ten generalistic anti-waste pleas to outweigh one demand for the retention of a particular daily cruise-train.

Often in such situations where the general does win through, there is no rail service in the District in question; under such circumstances, the Member of Congress may only have a "black box" idea of what AMTRAK is about. He may see it as a matter of pouring more or less money in, and getting more or less of a product called rail passenger service out, without differentiating between the attributes of that service under different conditions. The evidence of the interviews suggests that while
Congressional supporters of AMTRAK tend to be at least appraised of the service situation in their Districts, opponents are less well-informed on any aspect of the problem. They tend to see their task as one of reduction, and will therefore aim at cutting rather than reconfiguration even if that re-assembly might result in a more economically and socially-efficient system.

Thus, both supporters and opponents in Congress serve, by their actions, to maintain the status-quo. Supporters work on the assumption that as AMTRAK is serving their constituents it must be good, and act to have it retained as it is. Opponents aim at a general target, and thus fail to dislodge the basic long-distance network. They don't know any better.

Imperfect information, and the way in which such information is received and processed, therefore does appear to act in favor of long-distance routes. Unlike in Theory B1, in Theory B2 the Member of Congress is assumed to be perfectly well-intentioned, but poorly-equipped informationally and cognitively in performing his task. Lack of awareness of "filtration" systems makes any idea of correction that much more difficult to achieve.
THEORIES C
THEORIES C1, C2, and C3 all suggest that AMTRAK is cramped by its environment. It is doing as best it can, AMTRAK maintains, but cannot win out against factors which lie outside its control.
AMTRAK lacks the equipment to operate corridor service. Available equipment is most cost-effectively used on long-distance services.

For some organizations, nature imposes the chief limitation on resources. People who, through a series of historical accidents, find themselves on land so poor in water and minerals that all their energies are absorbed in the daily struggle to maintain biological life dare not spare hands for longer-range projects. In order to live, they are compelled to go on as they did in the past, although they could improve their lot if they could find some slack in the system.

Herbert Kaufman (1971)
AMTRAK did not start anew but, having inherited a legacy of neglect to a changing environment, had to build upon the ashes of a fallen empire.

At the time AMTRAK took over, passenger operations were in a state of disrepair. Increasingly a loss-making burden the private railroads had, in the past two decades, done their utmost to shed responsibility for providing them. They were not interested in heavy capital investment for corridor services which would further disrupt profitable freight operations. And while Congress had, in 1965, provided for a program of research, development and demonstrations of high-speed corridors, the only progress made was in the Northeast Corridor between New York and Washington. At the same time, regulation acted only to restrict exit from the system; it did not promote change. For these reasons, the railroads did not adapt by refocusing their passenger operations towards potentially more promising market types, and did not make the technological advances which might have enabled them to do so. Rather, they concentrated their attention on ridding themselves of their existing operation, which did experience accelerating shrinkage, but not reconfiguration.

AMTRAK thus inherited dated equipment, and a dated concept. Given a history of severe under-capitalisation throughout the Corporation's history, the argument that sheer deficit of resources has directed the pattern of AMTRAK operations merits consideration.

L. Fletcher Prouty, Senior Director, AMTRAK Public Affairs, is quite direct about the service implication of equipment constraints. While he agrees that it would have been logical to have started with corridor-type services between centers of high population, he asserted that higher utilisation could be obtained from the 1200 cars available by running
them long-distance where "they're on the track for 24 hours." The 20 to 30 year old cars would not be suitable for corridor operations anyway. The Shinkansen in Japan had 2336 cars, AMTRAK only 32 Metroliner vehicles, Mr. Prouty pointed out: "That's why our system is running the way it is."

Later in the interview he stated that AMTRAK would like to make a profit "but the means under which we operate preclude any profit because maintaining antiques is too expensive."

Other AMTRAK staff echoed Mr. Prouty. Wilfred Leatherwood, Manager, State and Local services, Government Affairs, for example, emphasised the "burden of keeping older equipment running." AMTRAK lacked resources for new cars; the need to refurbish old cars had diverted attention from attempts to develop corridors in the beginning.

Ira Silverman, Director of Marketing, commented that:

> the Northeast Corridor is the only investment supported by the Federal Government as perhaps being justifiable... The problem with the AMTRAK system is that other than the Northeast Corridor, you have such a low proportion of business travellers that your fares have to be relatively low. The fallacy is, there are very few markets without substantial investment that we can capture a large number of business travellers. Anything over trip time 2½ hours - 150 miles. The problem is, there's been no willingness to fund even getting up to 60 mph.

Some interviewees outside AMTRAK expressed like opinions. Said Congressional staffer Mr. B: "It's a question of inheriting a system that was run into the ground by the private railroads, and trying to do the best you can in providing service while attempting to rebuild the service." There are other perspectives, however, and this Theory is best critiqued in the light of others, especially Theories C4 and C5.
THEORY C2

The railroads won't co-operate with AMTRAK, and take it with suffrance as it is. Slow, long-distance schedules disrupt freight operations less than short-distance, high-frequency, high-speed services. Additionally, labor agreements make it more costly to operate short-distance services, nullifying the advantages that might accrue to small and lightweight self-propelled vehicles.
AMTRAK does not own most of the track over which it operates, the major exception being in the Northeast Corridor. Instead, it must contract with private railroads to allow its equipment to run over their tracks and, although service personnel are AMTRAK employees, train drivers and conductors are employed by the railroads.

As a result, AMTRAK cannot act unilaterally to implement a plan; it has to be accepted by the railroads concerned, and by the labor unions. However near the ideal managements' proposals may be, they may have to be adapted to conform to the desires of these two elements at the end of the line of implementation.

AMTRAK management perceives the railroads as being obstructionist, although opinion varies as to how justified this is. The railroads for their part see AMTRAK service as a disruption to their money-making activity: the provision of freight services.

The threat to the efficiency of freight operations varies, however, according to the pattern of passenger service provided. One relatively slow-moving train a day may cause few problems because in may ways it has characteristics similar to the freight trains. Accelerating speeds of passenger trains, however, has a drastic effect on reducing overall track capacity, given that freight trains will continue to move slowly. A multi-frequency, high-speed passenger service is, at heart, incompatible with simultaneous freight operation.

As a result, the railroads have been particularly wary of allowing corridor-type service to develop on their tracks, the condition of most of which - without major capital improvements - would be wholly inadequate
for such a venture in any case.

L. Fletcher Prouty, Senior Director, AMTRAK Public Affairs, said:

If they were selling Cadillacs with no tires for ten years, you'd figure they were pretty sick in the head. But, to sell trains with no tracks is exactly the same thing... 40 mph in a corridor is no good. When you get up to 95 you begin to approach door-to-door time for the airplane so that a train if it can move to 115 can compete with aircraft - and put the automobile out of business, at least to a degree. We have no capability to increase speed on the track because the track is owned by others.

One example where there is a relatively fast right-of-way is on the Los Angeles - San Diego corridor. But, the Southern Pacific Railroad, owner of that route, has consistently opposed increases in frequency; the litigation required to achieve it acts to worsen already poor relations with the railroad, as well as to impede progress. As ex-AMTRAK President, Paul Reistrup put it, because of this "there cannot be quantum improvements that will make the corridor viable."

But, as William Gallagher, Senior Director, Route and Service Planning at AMTRAK, said, "a multi-frequency service suitable for local transportation would make freight service conform to AMTRAK provision."

And, Matthew Scocozza, Senior Counsel, House Commerce Committee, while agreeing that the Los Angeles - San Diego service had been successful, emphasised that this had been at the detriment of freight service:

"I find a great deal of problems in giving priority on a private rail system to a passenger service which is really Federally-subsidised, and it interferes with the operation of a private corporation," he said.

As Roy Neel, Legislative Assistant to Representative Gore (D, Tennessee), put it:

At the root of the entire problem of passenger rail service in
this country is the complete and unrestrained hostility of the private railroads... and Congress, the ICC, and the Administration has deferred to the private railroads... The only thing that would allow AMTRAK to broaden its activities would be a more favorable environment within the private railroads, and that's not likely to ever happen.

But, while Tom Gillespie, AMTRAK Congressional Affairs Officer, would like to see the government owning rights of way which, he felt, would result in healthier operating conditions, and the opportunity to reduce Federal subsidy, Mr. Neel pointed out that there was a "very clear reluctance to nationalise any more railroads."

In the awkward relations between AMTRAK and the railroads, can be traced a basic principle of conservatism. The railroads on their part, while largely stuck with existing AMTRAK service, can pose an effective barrier to new service; AMTRAK, on the other hand, is constrained from expanding by these barriers, and is discouraged from discontinuing existing non-viable service because of the fear of losing the right to reinstitute such service at a later date.

The whole problem is compounded by labor relations, over which AMTRAK has only a limited influence. Firstly, the unions have been powerful advocates of AMTRAK in Congress. Their support stems from a desire to protect members jobs and AMTRAK would be wary of risking the wrath of a staunch supporter in moving towards rationalisation of the route system. Such a shift might ultimately create more jobs, should new service be successful, but the immediate impact would be one of job loss as the system is dismembered, and this is something which would be strongly resisted.

Secondly, AMTRAK has to negotiate labor agreements, with an operating
workforce they inherited rather than picked, indirectly through the
unco-operative railroads who are unlikely to concern themselves with
the need for improving efficiency or effecting change. Gordy Peters,
Chief for Rail Marketing, New York State Department of Transportation,
explained that efforts had been made to eliminate a crew change between
Albany and New York: "AMTRAK had to approach Conrail to get the labor
agreements," he said.

And it's been lost for eighteen months. Nobody knows why we
haven't got a labor agreement on that yet... With so much of
their operation tied up in the operating railroads, they are
really perpetuating the status quo. Because the operating
railroads don't really care. They have been divested of
responsibility for operating passenger trains. The fact that
AMTRAK hasn't grasped some of these new concepts and tried to
apply them even on an experimental basis has been frustrated by
the institutional arrangements they have with the operating
railroads.

The General Accounting Office (1978b) commented that:

Unions usually require that two people be paid a full day's pay
to operate a locomotive for every 100 miles the train travels.
AMTRAK has demonstrated that a single engineer can operate high-
speed passenger service safely over considerable distances in the
Northeast Corridor, and bus companies use a single driver to
operate an express bus over the route from Detroit to Chicago,
a task at least as difficult as operating a train. Yet, AMTRAK
pays a full days wages to at least four people just to operate
the locomotive on its 6-hour Detroit to Chicago train.

Such labor agreements constitute a major barrier to development of the
railbus concept, designed for two-man operation, but requiring a crew
of at least four under current agreements. If the actual employers, the
railroads, do not want the vehicle, they can block it by failing to
properly negotiate for appropriate manning levels. Thus labor and
railroads act together to bar technological and operational change.

Serious impediment though this is, however, it must be seen in the
context of AMTRAK's efforts (or lack thereof) to be innovative. See C4!
T H E O R Y  C3

Development of the route system has been beyond AMTRAK's control; under the circumstances, AMTRAK has done the best it can.

They're told what to do. I think that left to their own devices, and given the money, we could see some real good things out of AMTRAK. They're some very top-notch people at AMTRAK going completely crazy.

John Ingram, Federal Representative, California Department of Transportation.

RICHMOND: Why did you leave AMTRAK?
REISTRUP: I didn't want to go there. Turned it down five times. Did it as a public service. My I.Q. was getting too high. I was just not that type of person. I'm more inclined towards the freight business because it is still private enterprise. You're dealing with private enterprise exclusively. You see, that's what I really enjoy. Much more satisfying; they're achieving. People do what we suggest. Not just wasting time chattering.
Since the original system was put in place by the Incorporators, there has been only one major shift in the AMTRAK route structure, and that was essentially a compromise between Congress and the Department of Transportation.

As Tom Gillespie, AMTRAK Congressional Affairs Officer, told me: "to eliminate one route you create such turmoil in the Congress that we begin to realize that it's almost impossible to eliminate service no matter how bad it is if you don't have political support." At the same time, progress on Corridor development has been slow because "the Congress has got to give us the direction to go, and I don't think they're entirely convinced that the money is well-spent in this area yet."

Ira Silverman, Director of Marketing, stated as corporate goal "maximising long-run revenues against costs," but this has acted in the shadow of political control.

Any route that's been added has been forced on us by the government; management has virtually no discretion.

Of course, there is this Emerging Corridors legislation which we've pushed quite heavily. I think it reflects the Company's commitment to short-distance markets.

Within the management of the Corporation, 75 - 80 percent of the decisions are made on a rational, economic basis, given the constraint that we have to operate a certain route structure and that we're committed to operating that wholesale structure, and not develop one at the sacrifice of the other...

There would be more demand for us to run multiple frequencies and shorter distances than longer distances... That's not the mandate we have, to discontinue long-distance trains and operate sub-markets within those.

AMTRAK was a pawn of its mandate, I suggested. "I'd say that's probably right," answered Mr. Silverman. Howard Henry, Director, Market Planning and Forecasting agreed, stating that any economic argument had to be made by AMTRAK, and advanced "as far as it can against the wills of
people that have more power than it does." However:

except when a cohesive issue arises, and usually initiated by policy-makers on Capitol Hill, we don't talk of cutting back on routes, chopping off pieces of route, or adding a frequency. That's not one of the things we actually consider, because it's not one of the things we'd have any power to change.

Many of the views given outside AMTRAK are well summed-up by the comment of John Hoyt, Legislative Assistant to Congressman Devine (R, Ohio) that: "as long as they're on the Federal dole, they have no choice."

Ross Capon, Executive Director, National Association of Railroad Passengers, clearly felt that AMTRAK was doing as much as they could to promote short-distance corridors, citing the 1979 restructuring in which they "fought like hell" to have certain long-distance routes discontinued.

AMTRAK, directed by Congress (US Congress, 1975) did set up discontinuance criteria (NRPC, 1975, excerpted in APPENDIX G) based on economic, social and environmental factors and, once they were approved by Congress, did try to use them to discontinue The Floridian Chicago - Florida train, but met with Congressional resistance. "So," said William Thornton, Manager, Corporate Employment, "we were stuck with the Floridian. And we wasted I don't know how many dollars in determining that it wasn't a viable route. However, two years later, they took it off."

AMTRAK's 1977 - 81 5 Year Plan (NRPC, 1976), did suggest reducing train mileage in low ridership areas and increasing operations in high ridership areas. It also proposed a route study to be conducted jointly with DOT; in the event, however, Congress directed DOT to carry out the route study alone (resulting in DOT, 1979).
Further, in reply to GAO's analysis of the 5 Year Plan (GAO, 1978a), AMTRAK stated:

> In recommending to the Congress that the AMTRAK route structure be re-examined from a zero base, the Corporation believed that the Corridors offer the most planning relative market potential. We feel certain the independent DOT route structure study directed by the Congress will bear this out... {in fact, it did not}.

We have expressed our views to the Secretary of Transportation, ie. that intercity and commuter rail over the longer term from a national perspective will have to be integrated as a service and expanded to provide the American people a way to reach their jobs, to reach their communities, families and leisure-time travel needs - and especially in corridors where the ridership densities can be attained which maximize the energy and environmental advantages of the rail mode.

However, as William Druhan, Secretary, National Conference of State Rail Officials, American Association of State Highway and Transportation Officials pointed out, AMTRAK "don't make the basic overall philosophical managerial decisions such as the extent of service and so on... They should, because it should be market-oriented and not politically-oriented." And, as Mr. Y. of the Federal Railroad Administration put it: "AMTRAK right now is completely a servant of the Congress. And, if you ever want to see AMTRAK change, that will have to change. Congress has to put AMTRAK at arm's length."

We do therefore have some convincing evidence to suggest that AMTRAK is indeed a pawn. Each of Theories Cl, C2 and C3 have assumed that AMTRAK is at heart an economically-based maximiser, and we have seen some evidence which suggests that it is striving as best it can against the political obstacles in its path. There are other interpretations of AMTRAK management behavior, and its relation to the environment, as will become apparent below.
AMTRAK has as goal survival, and the subservient objective to this, growth. In order to best survive, it is in its interest to have the support of as many Members of Congress as possible. This can best be attained by providing service to as many of their Districts as possible, and this implies a national system.

Provided this is done, efficiency is tangential. Political analysis must take precedence over economic analysis.

We can't tell the government what to do until we know ourselves... We've got people who don't understand railroading, but they're very, very good at some things. The problem is that the jobs we ask of our VPs and of our Board of Directors who don't know a damn thing about railroads is not what an ordinary corporation would expect of its people. We've got members of the Board, magnificent people, but they don't have the slightest idea of how to run a railroad... and the few that do, because they come from the railroads, are anti-AMTRAK.

AMTRAK employee during interview session.
So far we have (at least implicitly) assumed that AMTRAK has been some sort of maximiser. A maximiser of profits? Maybe not; more broadly speaking it might be seen as a loss minimizer or possibly as a maximiser of social utility subject to a loss minimisation constraint.

Theory C4, however, suggests that AMTRAK does have some discretion, but rather than choosing to maximise anything in an output sense, it prefers to keep as many people as possible happy in order to best stand a chance of survival. Concentration is therefore focused on attending to organisational security requirements at the expense of production efficiency.

As Allison (1971) says in outlining his organisational model (\textit{Model II}),

\begin{quote}
The operational goals of an organization are seldom revealed by formal mandates. Rather, each organization's operational goals emerge as a set of constraints defining acceptable performance. Central among these constraints is organizational health, defined usually in terms of bodies assigned and dollars appropriated. The set of constraints emerges from a mix of the expectations and demands of other organizations in the government, statutory authority, demands from citizens and special interest groups, and bargaining within the organization.
\end{quote}

And, according to Wilson (1973): "executives seek chiefly to minimize organizational strain... They seek to avoid or escape situations in which there is a serious discrepancy between the tasks to be performed and the incentives available to induce that performance."

Whereas in Theory B1, Members of Congress are seen as trying to establish rail service for their Districts for political reasons, Theory C4 suggests the opposite: that AMTRAK tries to run trains through as many Congressional Districts as possible for security reasons.

As Kaufman (1971) points out, "the psychic risks of pressing for change
are substantial." If change is attempted, "the proponents are likely
to be belaboured from all sides - often by people who never thought
about the issue before." Making a mistake may lead to negative sanctions,
while success may not lead to reward (Coates, 1979). Given Congressional
control over AMTRAK funding, it is easy to see how AMTRAK could regard
it as being desirable from a risk-minimisation stance to please as
many Members of Congress as possible, and safer to do this by focusing
on the political needs of particular Congressmen, rather than by trying
to win over the body as a corps through changes based on economic and
social arguments. There is nothing to be gained from innovation, and
much to be lost.

Said L. Fletcher Prouty, Senior Director, AMTRAK Public Affairs:

We figured that the basic goal of a corporation was existence,
and the second was profit. Our business at present is to keep
rail passenger service in existence, and that's very nebulous...
We're trying to keep alive a very unusual business that was
absolutely dead when we took it over... You really have to have
service in as many places as you possibly can in order to
continue to exist.

And, commented Wilfred Leatherwood, Manager, State and Local Services,
AMTRAK Government Affairs:

Some Representatives have a little more clout than others, not
because of the population necessarily, because of individuals.
Their territories may be less than desirable, but politically
expedient. It's important to consider the support that we must
give certain powers on the Hill. We have to know which side our
bread is buttered on.

William Gallagher, Senior Director, Route and Service Planning admitted
that "obviously we run some inefficient trains only because some Members
of Congress hold certain Chairmanships." Bruce Horowitz, also of Planning,
declared that "running short-distance trains will provide more opposition
than support," and Howard Henry Director Market Planning and Forecasting warned that were AMTRAK to advance a reconstructionist view "to the point of making a public fight over it, we could cut our own throat."

If we look at AMTRAK's planning base, it appears to be poor. As early as 1972, the Michaels Report had called for "sophisticated analysis and adequate data" to "make effective use of equipment, to plan more efficient operating policies and procedures, and to analyze potential markets."

It recommended that "AMTRAK establish and allocate sufficient funds to staff and support such a program on a continuing basis." By 1975, however, such a program was not in operation. The 1977 - 81 5 Year Plan (NRPC, 1976) nonetheless had the same objective in mind, and laid particular emphasis on short-distance market research. It stressed the importance of determining "the dimensions of the actual intercity travel market" even though large resident populations might "suggest a probable origin or destination for travel."

The relevant travel market, which should not be so narrowly defined as to exclude intermodal and multi-mode travel, should then be evaluated to determine service aspects such as fare, schedule, travel time, and frequencies. Existing rail service on the route should be critically evaluated to determine competitive weaknesses, and identify desirable changes or supplements. Connectivity with the AMTRAK national system is an important consideration, as regional routes can help and be helped by the major routes. However, the specific requirements of the local or regional market must be fully reflected in service plans if corridor development is to be successful...

It is imperative to AMTRAK management to have the best understanding of the market dynamics for each route situation and in context with a systems perspective. General research, beyond but including route research, will be needed to measure the specific effectiveness of marketing programs including advertising, promotion, and service. Also, new research must be directed toward the identification of available new business and the specification of policies to cost-effectively realise the potential of new markets.

Brave words. But, in practice, wasted breath.
Paul Reistrup, ex-President of AMTRAK told me that:

Trying to get people with the qualifications is tough in this type of situation; it's not the place someone with a real corporate role in mind is going to end up. It's dead end. You don't see any railroad grabbing anybody from there, or any transportation company... There's a lot of good railroad people... Very difficult to get them. Some of them wouldn't even talk to me... There's a feeling that the Government doesn't want AMTRAK to exist. People are taking a great risk to go there. You're throwing your career, your livelihood, your family on the line.

Such analytic activity as does exist is primitive and in line with a negative and cautious attitude of "there's nothing we can do," an attitude that seems destined to ensure that nothing will ever get done. The AMTRAK Route Forecasting Model (reprinted in Hilton, 1980) is bizarrely inadequate (it is examined in APPENDIX C). But, as Bruce Horowitz said:

Moderately sophisticated predictive demand models... play a role in optimum pricing. Not much role at all in route selection... As long as we have no discontinuance authority, it doesn't have much value. AMTRAK provides a role as contract provider to Congress. It's not proper for us to be doing the policy.

Ross Capon, Executive Director, National Association of Railroad Passengers pointed out that "the good people who do the research are not in abundance, and they have to do studies at the request of the States that are interested in starting up 403b service." But, it is questionable whether AMTRAK has lacked the resources to do such work, or has mis-directed them. It has one of the largest Government Affairs departments of any US corporation and, according to Baldwin (1979), has a cumbersome and top-heavy management structure.

Further, the General Accounting Office (1978c) claimed that such power as they did have at the time had not been used well. "AMTRAK has the
authority to add or discontinue routes using Congressionally approved procedures that consider economic, social, and environmental factors; however, it has not used these procedures effectively to discontinue its most unprofitable routes." AMTRAK's criteria for deciding route changes had "taken too long to implement" and,

It has been reluctant to discontinue unprofitable routes... Although AMTRAK developed and applied economic performance standards to identify its worst performing routes for more detailed study, those standards have not been used effectively as criteria that a route must meet in order to be operated. According to AMTRAK, a decision to discontinue a route is based on substantial exercise of judgement. Under that approach, a route can be a bad performer in all aspects but still be continued if AMTRAK has adequate funding. This explains, in part, why AMTRAK's application of the route procedures has not been effective. Since the standards have not been used effectively for discontinuing routes, AMTRAK has requested funding to continue operating all routes in the system. Another example of their ineffectiveness is the time required to implement the procedures, as demonstrated by AMTRAK's 22-month study of the Floridian.

Further, Charles Hilty, Administrative Assistant to Representative Madigan (R, Illinois), felt that an analysis to examine the possibilities for realignment towards shorter-distance service "would be very relevant and they have not done enough of it" because of "lack of initiative and political considerations." And Gordy Peters, Chief for Rail Marketing, New York State Department of Transportation, criticised AMTRAK for not trying to take the lead, and for failing to study its own future. The recent F.R.A./AMTRAK (1980) corridors study had been mandated by Congress rather than inspired by AMTRAK "and AMTRAK management is not managing as well as management from the outside as far as I'm concerned."

Short-distance service that has developed since AMTRAK's inception has been closely associated with State efforts, rather than the result of
AMTRAK initiative. The prime example of this is the successful Los Angeles - San Diego service, heavily subsidised and encouraged by the State of California. The best short-distance equipment AMTRAK has - the "Turboliner" is largely associated with State-subsidised programs. And the only "railbus" type service, using Budd SPV 2000 units, is operated by AMTRAK between New Haven and Springfield using cars purchased by the State of Connecticut.

Back in 1972, the Michaels Report recommended that:

> Given the low loadings on many AMTRAK routes, particularly the shorter-haul routes, alternative equipment should be considered, especially the rail diesel car. On many routes the average loads are of the order of one or two cars per train and, at this level of traffic, the savings from such a substitution would be very substantial.

But, by 1979, the Senate Commerce Committee (US Congress, 1979c) still had reason to be "concerned that AMTRAK has not adequately explored the potential that presently available innovative rail technology offers such as the recently developed self-propelled diesel railcar capable of intercity rail service."

Howard Henry commented on the difficulties of providing low-density regional services when "our own level of service is 80 or 160 seats, whereas the buses can provide the capacity in 40 passenger increments," and this seemed to be accepted as fact, rather than the start of search for a solution.

Mr. Y. of the Federal Railroad Administration tells of the following episode:

> AMTRAK were asked to look at the possibility of using the railbus as a feeder. I jokingly said to one of the AMTRAK representatives, "have you got your complete list of why this wouldn't work?" And,
he didn't say anything, but when I arrived at the car, they had four pages. They had sat up all night with officials of the Norfolk & Western and developed a four page list of why this prospect would not work.

In many other quarters, there was also clearly an air of mistrust and frustration at AMTRAK management behavior. As Randy Mills, Press Secretary and Legislative Aide to Representative Pat Williams (D, Montana) told me: "you can never get a straight answer from them, and you can never talk to the person who really knows what's going on."

And, it was widely felt that AMTRAK's concern with politics distracted it from properly carrying out its job. Gordy Peters complained that AMTRAK could not supply data on the effect discount fares were having on individual markets: "the tools are there; they're just not using them." He accused AMTRAK of "masking" the fact that "energy efficiencies only lie in the short-distance services" because:

AMTRAK is out to perpetuate AMTRAK. What we're talking about is the possibility of some regional compacts which would just blow AMTRAK off the map. So, they're out to perpetuate this national thing which keeps them in business - National Railroad Passenger Corporation... I'd say their primary goal is survival.

Louis Rossi, Director, Rail Division, New York State Department of Transportation felt similarly:

I really don't think they know how to cost their services. They gave us that first breakdown of the estimate of the Adirondack subsidy five days after the point at which we would legally have signed the contract; they could not provide us with an estimate. Once we got the estimate, we challenged at least six of the cost components and the reaction was, now we're breaking off negotiations... I think the record is one of unwillingness to deal with the technical facts, which is true because they are a political organisation.

Mr. A., Staff Assistant to the House Appropriations Committee was yet more violent: "any agency that gets 68% of its dough from the Federal
till is a Federal agency, a Federal bureaucracy," he said:

They don't get littler; they get bigger. They protect what they have. There's no incentive for innovation when there's no reward for innovation... AMTRAK needs political muscle, so it doesn't cut back...

AMTRAK is more interested in political services than they ever were in economic sense. Most political interference is invited by AMTRAK. It's easier to testify before a committee and get millions of dollars than to go out to the marketplace and get customers' money. As long as Congress happens, AMTRAK will follow the line of least resistance to money... There is no question that AMTRAK is going to take care of those who hold the purse strings. The Senate was eager to go along with route cutting. But, AMTRAK took care of the principal player in the Senate by giving him the only new train added to the system. They took care of Harley Staggers on our side, and of Senator Byrd, the Majority leader, on the other side.

AMTRAK had not made efforts to defend logical development of rail service, but had taken advantage of the political system to remain as secure as possible. Thus, "when a powerful Member of Congress goes to AMTRAK and says "I have your budget by the balls,"" AMTRAK goes along with him:

They came up with all sorts of bizarre reasons to run those two trains through West Virginia and go along with this crazy idea of continuing to run The Pioneer for Congressman Duncan and Senator Church. Senator Church early on became one of the proponents to freeze the system in place...

Politics is the name of the game. Economic analysis is tangential, it's supplementary, it's academic. He who has the gold rules... Rather than wasting resources all over the country, AMTRAK should have said, let's find a corridor where the right of way is decent, and let's take some equipment, and let's run a well-disciplined, well-run service that's geared towards the market, and let's see if it succeeds. But, AMTRAK has frittered away all its money on its national system. I think it would have been well served by corridors.

Matthew Scocozza, Senior Minority Counsel, Senate Commerce Committee, said:

I have a great deal of problem with AMTRAK at times playing the political game up here... I don't really think that if AMTRAK was more responsive to the attitudes of Congress in terms of what its role should be, I think everybody would be a lot happier.
But, unfortunately the two never meet... There is no co-operative idea of getting rid of AMTRAK service where it wasn't viable. You know, I'd love to see an Emerging Corridor in terms of getting rid of a corresponding amount of dogs on the AMTRAK system, but that was never the thing and what I see here, and what AMTRAK saw and NARP saw was a complement, not necessarily a substitute. Now, the House envisions this as we're doing everybody a favor because we're moving to a Corridor-type operation as opposed to a national system. But, an old dog like I am, who's been around for five years of AMTRAK battles knows that we're not talking about a substitute; we're talking about a complement. Their {AMTRAK's} commitment is to railroad passenger service, and they would just think, it's just even more people they reach.

There is therefore not a little evidence to suggest that AMTRAK has primarily concerned itself with surviving, rather than with analysing and improving the product it produces. However, while it does not appear to have done all it might to resist political distortion, AMTRAK's actions cannot be divorced from the environment within which it has had to operate, one not conducive to innovation, risk taking, change.

Charles Swinburn, Deputy Assistant Secretary for Policy, US Department of Transportation felt that AMTRAK management did:

a reasonably good job, given the constraints they operate under, and the political pressures on their day-to-day operation. But, unfortunately, no matter how good a management they are, there is the overwhelming presence of up to $1 billion in Federal money waiting there each year, and that's bound to diminish some efficiencies. So, without being critical of the particular management, the system is not structured to be a for-profit system.

This view will be taken up further under Theory D1.
THEORY C4b

The Theory C4 goal - survival - is pursued vigorously by only some AMTRAK management, but reflects the *organisational* goal because, through power relationships and group dynamics, the other management have little choice but to tacitly acquiesce.

Madness is the exception in individuals, but the rule in groups.

- Nietzsche
There is a danger in regarding any organisation as a "black box," as this may conceal subtle relationships within it which can be of use in diagnosis and prescription for possible cure. Theory C4b is essentially the same as Theory C4, except that here it is suggested that the net effect of AMTRAK is to act in a protectionist, security-paranoid way. This may be a reflection on which units within AMTRAK have control, and how the various units are arranged and inter-related, rather than a statement that everyone in AMTRAK behaves in that way.

Examination of management set-ups is revealing. A crucial factor is differentiation of roles between departments, and their position in the information processing/decision making conveyor belt. As AMTRAK Congressional Affairs Officer Tom Gillespie told me: "Our operating people tend to want to get the train from point A to point B on the schedule that they think best. Our marketing people want to do it for marketing reasons; this department would probably want to do it for political reasons.

Operations is essentially given a service plan, and told to operate it. John Baesch of AMTRAK Operations measures success in "turnstiles-ridership growth." Ira Silverman, Director of Marketing, is very much a Corporation man. Referring to AMTRAK often as "The Company," it was clear what his objectives were: "In the marketing area, we try to put the stress on services which have the best payout. Whether that's what the company or DOT stresses is another question." Interestingly, Howard Henry, Director, AMTRAK Market Planning and Forecasting, said that AMTRAK's "internal goals don't recognise the non-economic, non-payable needs of various communities around the country, and the only vehicle
for funneling these goals, unless we develop some altruistic goals of our own, the only vehicle than that is through Congress and the Government." Thus, Operating strives to operate as efficiently as possible the service they are ordered to produce, and Marketing strives for most efficient service development.

The other side of the coin lies in Planning and Government Affairs. While in Marketing on got the impression that they could, and would, do better if granted greater freedom—"new services which AMTRAK management would designate... would clearly be short-distance corridor-type services," said Mr. Silverman — there was an atmosphere of cautious conservatism and self-preservation in Planning. Both William Gallagher and Bruce Horowitz defended the continuance of the long-distance trains, the purchase of the Superliners, and the need to keep a national system open to provide for future transportation alternatives. Mr. Gallagher did not feel that there was "evidence that AMTRAK, if unfetterd, would serve the public any better." Mr. Horowitz stressed the revenue-generating ability of long-distance trains (judged against short-distance trains of similar frequency, not against corridors), and the problems of serving isolated routes. He endorsed the validity of the "political concept that a truly national system provide some benefits to each region," and said that there were "mixed feelings in AMTRAK as to the viability of corridors."

Finally, we have Government Affairs. As William Thornton, Manager, Corporate Employment, told me, Government Affairs managers "must have an extremely good background in government relations, a good knowledge of the current Congress and the current Administration." I asked him what they had to know about running a railroad. "That's quite secondary
to their ability to deal with the Government," he replied. As Tom Gillespie said: "My experience is more in Government Affairs than it is in running railroads." And, commented Louis Rossi, Director, Rail Division, New York State Department of Transportation: "I think you may find internally in AMTRAK people who would say we ought to be focusing on different corridors. But, they're not a large number of people... AMTRAK is essentially an agency that receives all its money from Congress, and therefore it is in a sense a self-funding lobbying agency."

But, the "lobbying agency" is concentrated in Government Affairs. They are the people that give their allegiance to Congress, and do things for Congressmen. They are the people that convince Congress to hand over the dollars. And they are in a position to send a message down to the rest of the organisation as to what it must do in order to survive. Government Affairs is organically linked to Planning, and the two lie in contrast to Operating and Marketing. Government Affairs and Planning essentially frame the scenario because together they work out the politically expedient protocol. By the time this design reaches Marketing, however efficient and innovative-minded they may be (and there does appear to be somewhat of an "entrepreneurial" feel to the department which I did not sense elsewhere), there is little they can do because it is backed by power relationships (Government Affairs backed by Planning and, having manipulated the political system, backed by Congress) which it cannot resist. All it can do is perform its task as efficiently as possible within the constraints facing it, and pass the job down to Operating to do likewise.
The effect of these power-relationships may be further reinforced by a concept which Janis (1972) has termed "Groupthink":

A mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' striving for unanimity override their motivation to realistically appraise alternative courses of action... A dominant characteristic appears to be remaining loyal to the group by sticking with the decisions to which the group has committed itself, even when the policy is working badly and has unintended consequences that disturb the conscience of the members. In a sense, members consider loyalty to the group the highest form of morality. That loyalty requires each member to avoid raising controversial issues, questioning weak arguments, or calling a halt to softheaded thinking.

Although it is somewhat speculative to suggest that "Groupthink" operates in AMTRAK (there is more evidence from interviews to suggest the importance of intra-organisational power), given that Government Affairs and Planning are taking the lead, obtaining financial nutrition, and steering AMTRAK down a path to survival, any attempted counter-action by Marketing or Operations would seem not only inappropriate, but also disloyal. Especially given AMTRAK's highly unstable position, Marketing and Operations are unlikely to be encouraged to challenge the tone-setting position of Government Affairs and Planning. Insecurity will, if anything, tend to breed togetherness.

Thus, organisational output tends towards the dominant mode suggested by Theory C4, even if parts of the organisation would like to do differently. If we are to bring about change, knowledge of any such differentiation cannot but help tell us where to start.
AMTRAK has inherited the philosophy and operating procedures of the old railroads, and has perpetuated them.

What people call a corridor is not real railroad thinking. It's a fact that you run your trains between your maintenance depots. If it happens to be 300 miles, that's what you do.

- AMTRAK employee during interview session.
Theory C4 put forward the notion that AMTRAK management primarily concerned themselves with the preservation of the sanctity of their own necks. Here, consideration is given to the possibility that, rather than being willfully negligent, due to faulty learning systems, management had failed to advance beyond the operating procedures they had inherited.

Schön (1971) comments that: "It is a negative but by no means entirely inaccurate characterization of government agencies to say that they are memorials to old problems." The Department of Agriculture thus continued in existence past the solution of the problems of productivity it was established to remedy. And, "The Small Business Administration is a monument to Congressional nostalgia for the "little man who made it," even though his entrepreneurial role in American industry no longer has the status or importance it once had."

Similarly, AMTRAK is a memorial to an old problem, the provision of a comprehensive system of rail passenger services throughout the nation. AMTRAK inherited not only a physical structure, but also a morass of operating procedures. AMTRAK was, in many ways, a continuation of what had gone before. And, what had gone before included a recent period of decline and lack of innovation or inspiration. Many railroad traditions accumulated over past decades were bequeathed to AMTRAK; they would not disappear overnight. Thus, if the standard wisdom required national inter-connection, then the need for trains to meet and connect would be reflected in routing and scheduling.

Given a starting point of mostly long-distance, and none too healthy,
routes, it was not surprising that this was seen as a foundation upon which to build, rather than a dated monolith to be dismantled. The basis of rail passenger operations had always been national trunk lines, regional feeders joining at regional foci. Thus, no matter that the emphasis of an efficient system had changed. The long decades of neglect had left railway philosophy back in another age and the gap between the is and the ought to be, and the dearth of experience save of what was, helped mold what would happen: attempted improvement within an obsolete design, rather than reshaping of the design itself. As Tom Gillespie, AMTRAK Congressional Affairs Officer, said in explaining the lack of corridor development: "Unfortunately, we don't have enough equipment to run the service we're running now." The priority is on the now, regardless of whether the now is good. Even L. Fletcher Prouty, Senior Director of AMTRAK Public Affairs and staunch supporter of the corridor concept, set his priorities for the deployment of new equipment within this framework: "obviously, the first thing we would do is get rid of our old cars." he said. "Then we would begin to get additional cars that would go into frequency service."

There is a strong belief in some quarters at AMTRAK that major improvements based on the current orthodoxy of operation could yield substantial success, and there is a tendency for this to overshadow potentially greater success from a reconstitution of norms of operation. Tom Gillespie thus felt that old equipment is unattractive to passengers, and pointed to marked increases in patronage and decreases in complaints resultant upon the introduction of new rolling stock. Wilfred Leatherwood, Manager, State and Local Services, AMTRAK
Government Affairs, concurred. The State of Ohio was planning 160 mph rail service of their own but:

That's kind of speaking in a Star Wars type of setting. Our biggest progress this year has been because we have been able to tighten our belts and run the system as we have been given with better equipment. When we put on new service like the Superliner service, or the refurbished conventional equipment, our passenger complaints drop 85 percent."

Ohio had not subsidised 403b (ie, State-subsidised) AMTRAK service and "we have had contacts with other people who want to be more realistic about train service."

Mr. A. Staff Assistant to the House Appropriations Committee took a different perspective, blaming AMTRAK for continuously asking Congress to fund refurbishment of a defunct concept, rather than the development of a more relevant one: "AMTRAK would complain that they had 25 year-old equipment, 50 year-old stations, and 150 year-old ticket clerks," and would aim at overall renewal and emulation of what had gone before, rather than consolidation, rationalisation and development of growth areas. And, Louis Rossi, Director, Rail Division, New York State Department of Transportation agreed that:

There is a great emphasis within AMTRAK on the way it used to be. I really think it gets down to the fact that in this instance the Santa Fe was famous for running the "Super Chief" and the "El Capitan" on certain schedules, and that's what AMTRAK's staff is trying to mimic. And I use "mimic" because they can't reproduce it, and no amount of resources can... The so-called glamor trains day-by-day take their attention... and they will... take the people who could do better at running corridor services, and put them into why are our "Star Trains" running late?"

AMTRAK recently acquired luxury "Superliner" cars for operation on long-distance services west of Chicago. These units consist of low-density seating, sleeping accommodation, a buffet/lounge, restaurant car, dome
cars and a baggage car.

Mr. Leatherwood justifies the purchase, saying:

It was one way to show that we were in good faith attempting to serve the nation at large. I think it was probably an honorable way to say well we would like in good faith to run clean, comfortable, dependable and modern equipment across country, and show what can be done.

Mr. Y. sees the Superliner purchase differently. Rather than choosing to allocate resources from those which had been allocated to them:

They've taken the system as they found it, and preserved that. And, they have not chosen, for example, to rid themselves of some of the extremely high-cost long-distance service, and concentrate on short-distance traffic.

AMTRAK had resisted Executive Branch efforts to encourage this:

"Probably the most outrageous example of that has been the institutionalisation of long-distance trains by the purchase of the Superliners."

As William Druhan, Secretary, National Conference of State Rail Officials, American Association of State Highway and Transportation Officials explained: "The railroad industry in this country is plagued with tradition, and the tradition was to run the long-distance train."

AMTRAK were:

Living under an anachronism that people wanted to go from New York to California... It was based on the early days of railroading when that was the only way to travel.

We're just now trying to getting into trying to push them with the corridor concept; but, they don't really believe in it because it's not old railroading. Their concept of modernising railroads is to buy the new Pullman-type of equipment, the Superliner, which is an absolute abortion; it's ill-conceived and ill-designed. There's a basic concept of old-time railroading, and the concept that the number 1 is the national long-distance train. With the long-distance trains, you're going to need the Superliners. And that's what they thought they were going to run; that's what they thought they had to buy.

Scrutiny of AMTRAK's present short-distance markets also leads to some
interesting observations. The "Empire" service between New York and Buffalo was established by the New York Central Railroad which had reduced overnight services, and increased and speeded up daylight service from New York to Albany and Buffalo with a view to capturing business markets. Today, AMTRAK follows the pattern they established, and New York - Albany is a thriving business market.

By comparison, although a consultant's study had found that a market did exist west of Harrisburg and Buffalo on the Penn Central, but that it was for short-distance daylight coach trains. "If Penn Central had followed his advice" said Ross Capon, Executive Director, National Association of Railroad Passengers, "what you would have across Ohio and Indiana would be essentially what he recommended, because to such a large extent AMTRAK is still a reflection of what was existing in 1971."

Argyris and Schön (1978) differentiate "single-loop learning" from "double-loop learning." In the case of the former, there is a single feedback loop which connects detected outcomes of actions to organizational strategies and assumptions which are modified so as to keep organizational performance within the range set by organizational norms. The norms themselves - for product quality, sales, or task performance - remain unchanged...

Single-loop learning is sufficient where error correction can proceed by changing organizational strategies and assumptions within a constant framework of norms for performance. It is conceived primarily with effectiveness - that is with how best to keep organizational performance within the range specified by existing norms. In some cases, however, error correction requires an organizational learning system in which organizational norms themselves are modified... There is in this sort of episode a double feedback loop which connects the detection of error not only to strategies and assumptions for effective performance but to the very norms which define effective performance... We will give the name "double-loop learning" to those sorts of organizational inquiry which resolve incompatible organizational norms by setting new priorities and weightings of norms, or by restructuring the norms themselves together with associated strategies and assumptions.
For organisational learning to occur, the material in question "must be embedded in organizational memory" and "encoded in the individual images and the shared maps of organizational theory-in-use from which individual members will subsequently act."

Thus, in the case of AMTRAK, the conception of the system as national, long-distance, inter-connected, can be seen to have been embedded in organisational memory as the framework on the basis of which tasks are conceived. As a program dictates how a computer program performs a particular operation, so this image of organizational role channels activity within the organization, defines the job to be done, the questions to be asked. Thus, managers will try to improve on-time performance, luxury, and service in general within the confines of the encoded role of AMTRAK - a comprehensive, long-distance one.

To make the shift towards development of corridor services based on regionalised markets, and away from the traditional role, demands a different image; a different statement of norms and procedures is needed, one which has eluded AMTRAK. AMTRAK learning has only been single-loop learning. The double-loop learning necessary for it to modify its encoded procedure base has not occurred; solutions sought remain within an outdated frame, nothing more than a tired deus ex machina.

Argyris and Schöns explanation of failure to double-loop learn in terms of the non-discussability of an issue has already been mentioned in the context of Congressional action (see p. 74). In this context, however, an alternative view, one which regards double-loop learning as "revolutionary cognitive investment" is helpful. Allison (1971) regards
"Standard Operating Procedures" as essential elements of organisational repertoire. As he sees them, Standard Operating Procedures are grounded in the "norms of the operation or the basic attitudes and operating style of its members. The stronger the grounding, the more resistant SOPs are to change." As we have seen, the traditional operating norms for rail passenger service are exceptionally well embedded in AMTRAK. Continues Allison: "Where situations cannot be constued as standard, organizations engage in search. The style of search and its stopping point are largely determined by existing routines."

According to Steinbrunner (1974), when such search leads to apparent success, this will reinforce the procedure's validity in the eyes of the searcher:

If a decision maker attaches very general beliefs to the information which he receives in the decision process, intermittent success with specific decisions will tend to give strength to the general beliefs, quite apart from the validity of the connection in strict logical terms. This effect enables beliefs to become established and maintain themselves despite weak connections to reality or even contradictions of it.

Thus, success by AMTRAK in improving on-time performance of the San Francisco Zephyr, in improving the dining facilities on the Empire Builder, in lowering the number of customer complaints, will reassure AMTRAK that they are doing the right thing, and encourage continued operation within the established set of procedures; they will continue to produce the wrong product. Unawares that they are doing so.

This has something in common with Simon's (1947) "satisficer" concept - that search only takes place until a satisfactory solution is found. But, it is more than that. Search for search procedures only continues
until a satisfactory search procedure is found - one which produces satisfactory results.

Change requires cognitive investment. You have to be aware of the need for change. Investment implies short-run sacrifice of output (within the existing frame) to realise longer-run gains. You not only have to be aware of the need for change, but interrupt what you are doing now in order to search for it.

To combine these two concepts, we can see what might happen to someone who has lived all his life in a small town. If he is happy with his current job and lifestyle, he will likely as not stay put. If he is not completely happy, he will tend to search for alternatives within the same region, and if he finds a satisfactory one, he will tend to adopt that, quite innocent of the possibility that something considerably more to his liking exists in another region. His localised search procedure produces good enough results. It does not occur to him to do otherwise.

So it is with AMTRAK. Less people are complaining. More trains are on time more often; there is no trigger to cognitive investment. Planning continues within the same frame. And double-loop learning is further discouraged by the frying pan within which AMTRAK management find themselves. Investment is impracticable when there is no pause for breath. As Paul Molloy, Minority Counsel, Senate Commerce Committee, declared:

AMTRAK's management for the first ten years of AMTRAK's existence has been primarily concerned with keeping the system going, so they spend most of their time putting out fires, and not doing any strategic planning. It has done a number of studies, but has never had resources, or done any strategic planning that meant
that any of these studies are of any value... It's tactically oriented. In a sinking ship you bale water.

And so, only a partial and predictable attack is made on the problem.

As Steinbrunner summarises:

Cognitive modes of thinking are not likely to produce the laterally and upwardly expanding process of causal learning which the analytic paradigm expects. All of the cognitive syndromes dissect the complex problem and operate on segments of it, and the learning process produced by the operation of these syndromes is limited as a consequence. The strong tendency for the segmental patterns to stabilize themselves means that after some period of time of operating in a certain issue area both individuals and organizational entities will have learned to structure their decisions in a particular way, and changes in the established structure will be unlikely short of substantial changes in personnel.

Well, you ask, what about AMTRAK's forward-looking 1977 - 81 5 Year Plan (NRPC, 1976) and its urges towards corridor development and away from less than viable long-distance services? What about AMTRAK's forward-looking 1975 discontinuance procedures (NRPC, 1975) which took account of not only economic, but also social and environmental criteria? What about Alan Boyd's bold statements about the path to progress? Was it not he that declared that "AMTRAK's future is linked with corridor development, commuter service, intermodalism and the revitalization of the city center... One train a day anywhere can be little more than a costly curiosity, like the circus which comes to town each year?" (1980). Doesn't this prove that AMTRAK has learned what to do? Doesn't this prove Theory C4 - that it's all a conspiracy, that AMTRAK really doesn't care what it does so long as it is? Not so.

Alan Boyd's statement suggests that he has learned. The 5 Year Plan suggests that the senior management personnel that dreampt it up have learned. It does not, however, imply that the organisation has learned.
As Argyris and Schöns (1978) point out, there are cases where organisations know less than their members.

Nor does it help to think of organizational learning as the prerogative of a man at the top who learns for the organization; on large and complex organizations bosses succeed one another while the organization remains very much itself, and learns or fails to learn in ways that often have little to do with the boss.

As William Thornton told me:

Upper management, to be quite frank, I think they see it as short term, because as a government administration changes, you'll frequently find our administrative officer changes who then changes his staff. As far as upper management is concerned, there is management turnover that is more political than it is performance related.

It is the management below that maintain continuity, maintain continuity of encoding. It is their procedures and power arrangements that determine how information is really processed. And, although every single one of them may sincerely be doing his utmost to do his job as well as possible, with total honesty and complete integrity, the way in which organisational norms program them may prevent the organisation from learning.

Overcoming such deeply ingrained norms requires crisis according to Schöns (1971). And:

At the root of most innovations significant enough to precipitate a change of state, there are individuals who display irrational commitment, extraordinary energy, a combattiveness which enables them to battle with established interests over long periods of time, and a remarkable skill at guerilla warfare.

As we have seen in many earlier conservative quotations from AMTRAK management, especially in Planning, the conceivers of the 1977 - 81 5 Year Plan did not manage to educate the organisation towards adoption of the new norms it espoused; Mr. Boyd's brave statements cannot of
themselves slacken the momentum of a well-oiled machine. The real question
is whether Mr. Boyd can innoculate the organisation with a new image.
That is why I used the term revolutionary cognitive investment. Whether
he can do so remains to be seen.

Theory C5 does not invalidate Theory C4. Theory C4b is certainly
helpful in itself in identifying those parts of the organisation which
are most capable of learning. But, if these parts remain in a sub-
servient power position, then the organisation as a whole will not
learn.

Theory C4 if anything reinforces Theory C5. And yet, there is a middle
ground which we must not ignore. Individuals may all be well-intentioned,
and committed to doing good; the way they are led astray may be, as
suggested in Theory C5, because of the failure of learning systems. That
failure is not unconnected with the fear so prevalent in Theory C4. It
is a fear of loss of identity, a fear of the unknown. What people do
defines what people are. There is understandable terror at the thought
of its loss.

As Schön (1971) says:

Dynamic conservatism is by no means always attributable to the
stupidity of individuals within social systems, although their
stupidity is frequently invoked by those seeking to introduce
change. But why, then, should systems fail to reflect the
intelligence of their members? The power of social systems over
individuals becomes understandable, I think, only if we see that
social systems provide for their members not only sources of
livelihood, protection against outside threat and the promise of
economic security, but a framework of theory, values and related
technology which enables individuals to make sense of their
lives. Threats to the social system threaten this framework.
THEORIES D

Although some earlier Theories have at least contained the idea that inter-agency relationships have not been what they might have been, they have tended to espouse the at least implicit assumption that solutions might be found within the existing framework; dealing generally on the level of individuals and individual organisational units, the implication has been that if these individuals or units could do their jobs better, solutions could be found.

Theirues D, however, go beyond examination of components within the institutional structure, and show that the institutional structure itself has an imprint which programs interaction and outputs within the system towards an undesirable outcome. In Theory D1, the question of role definition and accountability is discussed; in Theory D2, in a more radical approach, the effects of centralisation of management and funding on the route and service structure is considered.
AMTRAK neither has the lines of accountability of a private corporation, nor the Executive Branch supervision of a public agency. In the absence of such direction (which the Legislative Branch has not provided), AMTRAK has not been able to properly identify with any particular goals and, confused, has had to muddle through, adjusting according to the "environment" of the day. This has not been conducive to reform.

The relationship of agencies to one another is best characterized as a conflict of rival baronies, each jealously guarding its own territory and seeking to expand that territory at the expense of other agencies. No new program moves into the Federal Government as into a neutral space but always into a field of force built out of the territorial fears and ambitions of the agencies... As a result, it sometimes appears to an outside observer that the Federal Government contains many extremely intelligent, highly dedicated, experienced individuals who work long hours over long periods of time cancelling one another out.

- Schön (1971)
The implication of Theory B1 is that if Congressmen were more altruistic and self-sacrificing, all could be well. That of B2 was that if they could learn effectively, problems might be cured. Theories C4 and C5 treated the position of management in similar vein and could suggest like needs for remedy. It is suggested here, however, that such selfishness, fear or ignorance are consequences of institutional structure, which latter must become the subject of discussion if the situation is to be properly understood.

AMTRAK is a confused organisation. Is it private? Is it public? Should it seek to maximise "profits?" To minimise losses? Should it provide as many trains as possible? Everywhere? Only where most efficient? Only where the most powerful Congressmen live? Should it lead? Be led? By whom?

Private operations must remain financially solvent, and strike out for profits, or risk going out of business. AMTRAK has, on paper, been set up to operate on this basis, but in reality has had to function in quite a different domain. AMTRAK was designated a corporation, yet has lacked corporate freedom. Yet, while lacking corporate identity, neither has it been subject to Executive Branch supervision. A failure to clearly establish what AMTRAK's goals are to be, and to set up an institutional structure capable of achieving them, has led to confusion, lack of direction, supervision, accountability. A stalemate in which the only way to go is with today's wind.

Both within AMTRAK and without, there is uncertainty as to what its purpose and goals are. Commented Ira Silverman, Director of Marketing: "I don't think there's a role that's clear cut. I think there's a role
that has come out to develop inter-city passenger service at some level...
If you ask what's best for the country, or what's best for AMTRAK, I really don't know. I don't think that's ever been clearly stated." He feels that it is for AMTRAK, while advocating short-distance routes, to operate on a "business-like basis" within the politically-defined route structure, meeting financial targets.

Howard Henry, Director Market Planning and Forecasting, while feeling that AMTRAK was "a sort of social service," saw its definition as a corporation as a "perfectly reasonable organisational entity" where "the need for profit translates into a need to minimise losses." Revenue/expense ratios "gives us some framework for decision-making, and some goal for optimisation internally." John Baesch of Operations, though, felt that apart from profit, it was the "public good" which motivated management, given that "public acceptance must be our measurement," and William Thornton, Manager, Corporate Employment, claimed that motivation lay in "seeing a passenger getting off a train smiling... We're not organised to make money; we're organised first to serve the passenger."

Outside of AMTRAK, there were a variety of interpretations of its goals, ranging in most cases from the ill-at-ease to the cynical. Deborah Swartz, Special Assistant to the House Transportation sub-committee, while stressing the lack of clarity in objectives implied by the original law, saw AMTRAK decisions as "oriented towards balancing profit maximisation with serving the public." A number of others shared this ground. Several interviewees, however, cited combinations of ridership levels, reduction in number of complaints and, above all, ability to secure appropriations from Congress, as AMTRAK's performance measure.
Mr. A, Staff Assistant to the House Appropriations Committee, was particularly assertive that AMTRAK did not respond to signals of profit: "When the bills are paid, AMTRAK knows they've succeeded," he said. "As long as you have that appropriations dope in your veins, you won't have to sober up." Mr. Y. of the F.R.A. told me that AMTRAK "knows it's succeeded by periodically saying it's succeeded. There's no measure of success or failure." For a sardonic ex-President of AMTRAK, Paul Reistrup, AMTRAK "knows it's succeeded by surviving another year."

Risk is an important element of corporate life. But, although Charles Hilty, Administrative Assistant to Representative Madigan (R, Illinois) told me that AMTRAK "risks going broke politically," Charles Swinburn, Deputy Assistant Secretary for Policy, US Department of Transportation, maintained that "there's always that Federal cushion behind them. If they screw up, then they have no bottom line to worry about." Many commentators agreed that AMTRAK risked "nothing."

Thus, AMTRAK as a profit-seeking corporation is a pretty unusual entity. Though Tom Gillespie, AMTRAK Congressional Affairs Officer, said that "Congress created us to be operated for profit because they wanted to keep the politics out of it," this has been far from true. But, although Larry Sabbath, Legislative Aide to Representative Santini (D, Nevada), felt that AMTRAK "the corporation" was a "facade," Amy Dunbar, Legislative Aide to Senator Tsongas (D, Massachusetts), felt that "the more they stay around the idea of the private corporation, the more efficient they can try to be, and Mr. B., House Commerce Committee staffer, balked at the idea of having AMTRAK as a government department: "I think we want to get the incentive in there to manage it as
efficiently as we can." Paul Molloy, Minority Counsel, Senate Commerce Committee, on the other hand, insisted that there could not be management initiative from within AMTRAK "because of the dependence that is caused by subsidy."

It is to be doubted, however, whether it is the subsidy per se that is causing the trouble, or whether responsibility lies in the way in which it is administered, coupled with only a vague conception of purpose, bereft of any connection to reality, and a severe identity crisis. It is not necessary to look very far to find evidence of that.

The original AMTRAK law, the Rail Passenger Service Act of 1970 (US Congress, 1970), stated that:

If at any time after July 1, 1973, the Corporation determined that any train or trains in the basic system in whole or in part are not required by public convenience and necessity, or will impair the ability of the Corporation to adequately provide other services, such train or trains may be discontinued under the procedures of Section 13a of the Interstate Commerce Act.

When AMTRAK, at the behest of the Congress (US Congress, 1975) developed and sought to apply criteria for discontinuance of routes, in 1975, they clearly thought that in accord with the independent corporate identity Congress had prescribed for them, and in line with the precepts of the original Act, it would be for them to reach decisions on such affairs. As the Criteria report (NRPC, 1975) declared:

AMTRAK's Board of Directors will provide the guidance to be used by AMTRAK's management in carrying out route and service evaluations, and will have authority for final route and service decisions.

AMTRAK's President will suggest route and service evaluation guidance to the Board, will lead AMTRAK's staff in analyses, and will develop recommendations on routes and services for Board approval. AMTRAK's staff will carry out the fact-gathering and analyses necessary to develop route and service evaluations and will implement the Board's recommendations.
The public will offer information and comment on proposed route and service decisions to be considered by the Board in making its decisions.

This is as clear a statement as one is likely to find that the ball was in AMTRAK's camp. But, the reality is that the AMTRAK Board has been irrelevant because, although on paper, it is the controlling instrument for AMTRAK, in actuality, it has not had the necessary powers to maintain control. As a result, it cannot be held accountable for errors.

In its final report on the route restructuring (DOT, 1979), DOT stated that:

The Executive Branch and the Congress, together, with expert advice from AMTRAK and input from the public, should designate which basic intercity rail passenger services AMTRAK should provide and the amount of public resources that are to be made available to support them. AMTRAK, on the other hand, should concentrate principally on operating the designated intercity rail passenger system as efficiently and cost-effectively as possible. Within budget ceilings, AMTRAK should be able to make incremental changes to the designated system of routes and services that make the system more efficient.

By 1979, AMTRAK for its part had been disabused of any idea that it could act unilaterally, and had changed its stance. Although Alan Boyd still insisted, as he testified before the House Transportation subcommittee Hearings (US Congress, 1979b) that "We are not a government agency; we are a private corporation, supported to a very large degree by public funds," he continued: "We are acting under the behest of the Congress and the Administration and we want to provide whatever service - we will provide whatever service the Congress and Administration ask us to provide." Notice that he refers to provision of service rather than satisfaction of goals - a degree of direction clearly at odds with the notion of private corporate identity.
Also, while back in 1975 the AMTRAK criteria had included social criteria, in 1979 Boyd was to state that: "It is not our function, and we don't have the basis for establishing the relative values of the social criteria." Another about-turn.

PL 97-73, The AMTRAK Reorganization Act of 1979 (US Congress, 1979d), acknowledged that:

1. Inadequately defined goals for the Corporation have denied its board of directors an effective role in guiding the Corporation or in promoting and increasing the number of intercity rail passengers;
2. Uncertain goals and financial commitments have discouraged the development of effective corporate management;
3. Uncertainty arising from the lack of specific goals has made the achievement of high employee morale difficult.

Having diagnosed the disease as such, specific goals were set. They included improvement of on-time performance by at least 50 percent within three years, implementation of schedules which provide a systemwide average speed of 55 mph, and improvement of the ratios of revenues to operating expenses, with the goal of coverage of at least 44 percent of operating expenses, excluding depreciation, from revenues by the end of fiscal year 1982, and 50 percent by the end of fiscal year 1985. Performance standards in terms of passenger miles per train mile (150 minimum for long-distance, 80 for short-distance) and avoidable loss per passenger mile (7¢ maximum for short-distance, 9¢ for short-distance) were also set.

Alan Boyd had strongly urged that "the resources be made available for the obligations that are imposed on us," (US Congress, 1979b). Requirements had been designated, nonetheless, quite independently of the financial requirements - notably investment - necessary to
achieve them. They were also somewhat arbitrary - the 55 mph minimum, for example, was selected merely because it happened to be the maximum highway speed limit, and not because it had anything to do with the problems of rail passenger service, or with the setting of realistic targets to be aimed at in their elimination. Indeed, because the new goals set treat AMTRAK in a global sense (other than distinguishing broadly between long-distance and short-distance in the "criteria"), they make it more difficult to hold AMTRAK accountable.

Costing of particular services and negotiation of an arrangement "whereby the Government would purchase a stated amount of service at a stated price, and the Company would be obligated to provide that service at that price" (Alan Boyd in US Congress, 1979b) might have clarified accountability. It lessens AMTRAK's viability as a corporation when it knows it will be blamed for failing to meet unrealistic standards.

A private corporation is controlled by its Board of Directors which is responsible to its shareholders. In the case of AMTRAK, it has been the Congress - as a private company's "shareholders" - that has made the decisions (or perhaps, one might more aptly say, the non-decisions). It is analogous to a situation in which all the individual shareholders of, say, General Electric, were to directly instruct management on their task; quite simply, an unworkable proposition.

Without a defined role, unrealistic, sometimes conflicting, frequently changing directions and direction by the Congress, it is hard to classify AMTRAK as a corporation. However, it is also different from any other public transportation agency in that it is not under proper Executive Branch supervision.
The Secretary was supposedly to designate the Basic System, and keep tabs on it thereafter but, due to Congressional intervention, this has not happened.

DOT is regarded with suspicion, if not fear, by AMTRAK. L. Fletcher Prouty, Senior Director, AMTRAK Public Affairs, reflected other management feelings in stating that:

The Administration has viewed AMTRAK ever since its beginning as a necessary evil. Congress, being a little closer to the people... has generously supported AMTRAK even to the point of almost over-riding the Administration at times... Last year we darn near went bust because the Secretary of Transportation decided to put us out of business... I would cut it {AMTRAK} completely from the interface with DOT. That's nothing but a drag.

Several non-AMTRAK interviewees also criticised DOT for its hostile attitudes.

To move to the other side of the ring, however, there was no shortage of bile to be had from the F.R.A.'s Mr. Y. "I often think that the best thing for the Department to do would be to take a position that all AMTRAK services ought to operate trans-continentially with the highest possible level of luxury," he said.

And, since they always do precisely the opposite of what we recommend, they might do something rational... The Executive has been schizophrenic with AMTRAK. Internally, it has for the most part been anti-AMTRAK. I think part of that has been a reaction to the role AMTRAK has taken.

The interface between AMTRAK and DOT was described by Mr. Y. as:

Conducted largely by lobbing bombs at each other. AMTRAK refuses even to come here for the budget process. The Department makes up the budget numbers for AMTRAK to put in the President's budget' they don't come from AMTRAK.

All those interviewed were asked to whom AMTRAK was responsible, and most replied that it was to Congress. As Howard Henry, Director AMTRAK Market
Planning and Forecasting, said: "it's responsible to its customers. And its biggest customer of all is the Congress which provides 1/2 to 2/3 of its revenues. And, to a much lesser extent the Administration, or anyone else who might be interested."

Weren't they responsible to DOT, I asked Mr. Y? "They claim not to be," he replied,

But we claim they are, and that's the conflict. AMTRAK has made it clear for quite some time that they would prefer to be responsible to the Congress which has a great deal less staff, and a great deal less expertise to oversee them, than to us...

AMTRAK has been very jealous in guarding its route selection from the Executive Branch; well, it's been very jealous in guarding all its operations from the Executive Branch because they fancy themselves to be a private corporation...

I don't think it should be our job to do the AMTRAK route system for them. AMTRAK ought to determine the route system, and they ought to come to us and justify a budget. The Department has no interest at all in getting involved in selecting routes...

The organisation chart very clearly mimics a corporation. They behave as a typical government entity: make sure it spends its budget; get more next year.

While Ross Capon, Executive Director, National Association of Railroad Passengers, feels that "the Corporate structure is a good thing" because it "has given it a certain degree of independence from the Department" which is "violently opposed to inter-city passenger service, except in the Northeast Corridor," Charles Swinburn felt that "as long as they've got Federal funds, I think they've got to be responsible to someone who's worried primarily about the integrity of spending those Federal funds... There should be more control of the Corporation's activities than there has been."

As Bruce Horowitz, AMTRAK Planning, said: "F.R.A. is nominally an oversight organisation, but they have no direct control. F.R.A.'s role is
spurious, and they're very frustrated as such." And, commented Roy Neel, Legislative Assistant to Representative Gore (D, Tennessee): "It's a power struggle between the Executive and Legislative Branches; there's no doubt about that." But, it is a power struggle in which the Legislative Branch has the upper hand. Representative Florio (D, New Jersey), Chairman, House Transportation sub-committee, said: "What we've done is try to intrude ourselves, specifically my committee, as kind of mediator between those two parties, and I think it's an appropriate role."

It is essentially a relationship, though, that gets between AMTRAK and DOT, and which has had the effect of leaving the latter impotent. Feeling very much like a jilted suitor, it tries to exercise authority in the only way it can to achieve what it sees as desirable results.

Nat Simon, Executive Director, Ohio Rail Transportation Authority, criticised the 1979 DOT restructuring report because "the relative efficiency of long-distance versus short-distance routes was not evaluated," (US Congress, 1979b). Gerald Pieri, Massachusetts Assistant Secretary of Transportation was similarly unimpressed by the report's failure to "even look at" the potential for new short-distance routes.

Rather, the DOT report right now merely keeps us with a skeleton of the structure which was designed in another age, 7 or 8 years ago, and it merely postpones by perhaps three years, the inevitable of AMTRAK's budget becoming so high that you people will not be able to fund it. (US Congress, 1979b).

However, although DOT might support the corridor concept in secret, there would be no point in advocating it, as funding for corridors might go through without any assurance that such new (good) developments would be accompanied by parallel reductions in less efficient services; it is difficult for DOT to reallocate without increasing costs. Thus,
DOT is pushed into the opposite corner from AMTRAK, and enters an adversarial relationship in which the prime effort is to prune.

This the restructuring proposal from DOT (1979) was purely the work of the axeman - a 43 percent reduction was demanded; a little under half of this was eventually won after Congressional debate.

DOT has thus had some effect in getting reductions in long-distance mileage, but not promoted corridor service other than in the Northeast. It has taken an openly offensive stance but has been on the edge of the arena, rather than center-stage. DOT's relationship with AMTRAK has promoted the status-quo, or perhaps gone for reduction of a poor pattern, but not for its reappraisal and revision.

A failure to establish goals and supervision has led to chaos. Because AMTRAK was seen as a corporation, it was given independent status and was clearly not understood to be a sub-unit of DOT. Yet, when it became more than obvious that profitability was hors du camp, it remained - in name only - independent, real direct control passing to the Congress, a highly fragmented legislative body clearly incapable of maintaining continuous and consistent effective supervision. While the Congress carried on the pretence of "AMTRAK the corporation," it gave it no corporate freedom, nor allowed it to develop corporate identity. Congress has never been able to tell AMTRAK what it wants of it, nor set realistic targets for its achievement.

In the meantime, an emasculated DOT has been struggling to maintain a role which the other parties do not acknowledge it to have. Seeing itself as the only body capable of supervising, it tries to supervise, but
is rejected. Knowing that it cannot be positive and effective, it piles on the negative attack as the only way to reduce fat. Conflict results; little is achieved.

In Britain and Japan, Paul Reistrup pointed out, "you have a parliamentary form of government where the Parliament and the Minister are headed in the same direction. Here, I don't know where they're headed. But I've never seen them headed in the same direction." In the British and Japanese case, the unison of Legislature and Executive has enabled a clear definition of goals to be formulated and, paradoxically, the stricter control thus made possible, has allowed management more independence, opportunities to show initiative and the spirit of the entrepreneur.

In the case of AMTRAK, failure to define realistic goals and establish firm lines of accountability has left the organisation muddled and, unable to identify with any particular goals; it has had to follow the wind, basing its task definition on whatever today's environment allows. Up until now, the environment has allowed little other than the status quo.

As Theory D1 sees it, the problem is not selfish Congressmen or weak management per se, but a system of inter-organisational relationships which permits the former to interfere and the latter ignorant, subversive, or selectively sycophantic. We take one vital step further along this road in Theory E.
AMTRAK's centralised management and funding base orients it towards provision of a "national"-type system. All planning occurs in Washington, and there is little contact with state or local government bodies save over 403b service which is itself regarded as supplementary to, rather than part of AMTRAK's main task. This leads to priority being accorded to inter-state long-distance services over more regionalised short-distance service.

The very fact that I am working for the Federal Government clearly influences my feeling that the Federal Government should have more say over the state. And I've never even considered breaking up the passenger rail system into state or regional management systems, and I would think that would be very hard for Congressmen and Congressional staff to deal with the idea of giving up all this partying.

- Michael Gessel, Legislative Assistant to Representative Matsui (D, California)

Government cannot play the role of "experimenter for the nation," seeking first to identify the correct solution, then to train society at large in its adoption. The opportunity for learning is primarily in discovered systems at the periphery, not in the nexus of official policies at the center. Central's role is to detect significant shifts at the periphery, to pay explicit attention to the emergence of ideas in good currency, and to derive theories of policy by induction... Central comes to function as facilitator of society's learning, rather than as society's trainer.

Schön (1971)
AMTRAK is very much a centralised organisation. Its main funding base is Federal, and reporting responsibilities are to Federal bodies. And, although there is a move towards delegation of some operational functions to regional offices, planning is concentrated in Washington, D.C., a city with a quintessentially national perspective.

The centralised management approach gives rise to a total systems perspective that sees AMTRAK in its totality as a "symbiotically" interconnecting nationwide system. This pervades the whole operation. Advertising, for example, has tended to be nationally based, rather than tailored towards specific corridors. "As a result, AMTRAK has not been able to fully exploit the ridership potential in the corridors." (GAO, 1978b).

AMTRAK's dependence on Congress means that its daily contact is with this body rather than with State agencies. And, while Members of Congress may be contented simply by the fact that some service is going through their Districts, it will be the local-level organisations that will be concerned most with the promotion of regional needs. And yet, AMTRAK has little responsibility towards them. They rarely form part of the decision-making process unless their state is part-funding service under Section 403b of the Rail Passenger Service Act (US Congress, 1970 — see APPENDIX D), and even then, complained New York State officials, the requirements of regional services have been regarded as subservient to the needs of "Basic" long-distance trains. State officials are made to realise that such provision is in addition to the "Basic System," supplemental rather than integrally a part of the main AMTRAK brief. The effect of both centralised control and
accountability, then, is to put regional priorities beneath those which are either perceived to be in the public interest, or seen as most likely to satisfy AMTRAK's paymaster.

As Ira Silverman, AMTRAK Director of Marketing told me, state enthusiasm for encouraging trains varies. "California is very aggressive," he said. "Unfortunately, the States for which it would be nice to have more service to, like Ohio, are very non-committed." Participation in 403b service has been restricted to 8 States, though on 13 routes. The most successful of these has been from Los Angeles to San Diego on which half of the six daily round-trip trains are paid for by the State of California (see p.37). California also subsidises two daily round-trips between Oakland and Bakersfield.

A second major effort is in New York State's New York - Niagara Falls "Empire Corridor" where, in addition to funding particular trains, the state has involved itself in a $43 million track improvement program. Michigan adds a daily train each way between Chicago and Port Huron, and between Jackson and Detroit, to the Chicago - Detroit service, and Illinois subsidises five trains in each direction on routes radiating from Chicago. Other 403b service operates in Minnesota, Pennsylvania, and Oregon. All 403b service together accounts for less than 8% of AMTRAK's total ridership, however, and only Los Angeles to San Diego and New York to Albany could be described as approaching corridor service. 403b service has not resulted in any massive reorientation in rail passenger service because it seeks to supplement rather than to replace.

Roy Neel, Legislative Assistant to Representative Gore (D, Tennessee),
describes Tennessee's position as being "typical of many States which do not have much passenger service; it's complacent. It's we would love to have it, but not to the point where we would make any funds available to it." And Wisconsin produced a study which concluded, said Doug Haist, Administrator, Wisconsin Department of Transportation, that "some were better than others, but none were worth the investment of State funds."

If Tennessee's attitude is "complacent" though, Wisconsin's is hard-headed and represents a noteworthy departure from basic AMTRAK philosophy. While the primary goal of AMTRAK may be to provide some rail service to as many places as possible, the task from the Wisconsin vantage is simply to provide for the most efficient transportation system, whatever modes form a part of it. Thus, while AMTRAK finds it justified to provide at least some minimum level of service to the State under its rationale, Wisconsin feels that, having considered the worth of rail relative to other modes, transportation resources are better spent elsewhere. As the report (Wisconsin Department of Transportation, 1975) declares:

The problems of intercity passenger transport cannot be solved by dealing with only one mode at a time. It is precisely this narrow approach that led to the present problems... The benefits of increased reliance on intercity rail come to society only when large numbers of travelers find reason to rely on that mode {note the similarity to Alan Boyd's statement on p.38} Merely providing rail service, without simultaneously dealing with the underlying preferences of the traveling public will not necessarily produce any social benefits.

It would be all too easy to conclude here that various short-distance corridors have not been developed because the states involved have not felt that the benefits would justify the costs but, when pitting some non-served routes against parts of the existing "Basic System" network,
a curious paradox emerges.

The result of the dichotomy in attitudes and responsibilities has been that several markets which might have been good for rail passenger service, but which are of solely regional significance and which the States have not felt valued funding themselves, have not been exploited at all. At the same time, other less good markets in those very states have been served because they form part of the "Basic System."

In Ohio, the effects of non-involvement by the State are clear: AMTRAK currently provides daily long-distance service across the top and bottom of the State, neither of which provide regional service because they do not link the major centers, are infrequent, slow, inconvenient, and unreliable. Columbus, through which the now defunct National Limited used to pass at 3 in the morning, currently has no service; Ohio's major cities, some of the largest in the country, and in a State where population density averages 261 persons per square mile (greater than the figure of 252 for France where high-speed passenger rail is in an advanced stage of development), are not in any real sense connected by rail.

The situation derives in part from Ohio's constitutional provision prohibiting the subsidisation of private enterprise (of which AMTRAK is, ironically, considered a part); two attempts to amend the restriction were rejected by Ohio voters. But, it equally derives from an impression that AMTRAK cannot best serve the State's inter-city rail transportation needs because this is not where the AMTRAK organisation's focus of attention lies. Said Mark Randell of the Ohio Rail Transportation Authority (ORTA): "they basically provide service on a national basis,
and we want to make sure the efforts, the expertise, is concentrated here in Ohio if Ohio's going to be paying money to foot the bill."

An article by Vranich (1980) reports that:

While Ohio has a number of strategically placed railroad routes connecting major population centers, there is no evidence AMTRAK service would be forthcoming any time soon.

Several AMTRAK five-year plans have called for more service or new routes, but none has ever been fully approved or implemented. Officials in the Buckeye State say AMTRAK's goals for Ohio, even if approved, were so modest that a good train system still would not have resulted. Many in Ohio are not optimistic about AMTRAK's "emerging corridors" proposal, another study of AMTRAK's potential.

Ohio's skepticism may not be unreasonable. AMTRAK's board of directors has never championed a high-speed system for that populous state as they have done for the Northeast.

Accordingly, Ohio has set in motion its own studies in what promises to be the most adventurous approach to inter-city rail passenger service in the US yet. Three major corridors were identified as having greatest potential for development: Cleveland - Columbus - Cincinatti; Toledo - Cleveland - Youngstown; and Toledo - Columbus (See MAP 1). Other possibilities include extensions to Pittsburg, Detroit and Louisville.

The Ohio plan includes the construction of dedicated right-of-way for the passenger trains, and speeds of 150 mph. The service, projected to carry between 9 and 12 million passengers by 2000 (depending on whether inter-state connections are included or not), would be operated by ORTA, and not by AMTRAK.

Arthur Wilkowski, a State representative from Toledo conceived the high-speed rail concept during the first energy crisis, and has been a heavy promoter of the ORTA plan. He wants nothing to do with AMTRAK. Quoted in the November, 1979, issue of Ohio Magazine, he said:
Three High-Speed Corridors Identified

Proposed High-Speed Rail Corridors

MAP 1 (from Dalton, Dalton, Newport, 1980)
The AMTRAK system would not work in Ohio. We will build this system on the ashes of AMTRAK. We must build a system designed for the year 2000, not try to reestablish a system that died in the Forties.

There does, however, remain some support for further co-operation with AMTRAK, particularly from the traditional railroad lobby. As Vranich put it:

Some NARP members would share an AMTRAK concern that a potentially superior system would make AMTRAK look antiquated. They believe their strength lies in a unified national system run by AMTRAK, and would worry that independent programs would weaken an already frail political base in Congress.

AMTRAK, in short, is not serving the regional needs of Ohio, and the moves being made in that state suggest that for this to happen finance and control need to be at the state level.

AMTRAK’s organisation is itself very centralised in comparison to the bus industry which differs from it in a number of important ways. The bus industry is dominated by Greyhound and Trailways, but also contains a plethora of smaller operators, serving mainly intra-regional markets.

Harold Morgan, Manager of Revenue Economics, American Bus Association felt that a decentralised operation was necessary to properly serve the regions. It "wouldn't work out" if all planning were to be done in Washington "because you wouldn't know what the local needs are."

The bus giants depend heavily on regional inputs for decision making.

E. W. Simmons, Director of Transportation, Greyhound Lines, Phoenix, explained how Greyhound was broken down into regional territories and regional Vice Presidents, District Managers reporting to these latter at yet one level beneath. Technical co-ordination was carried out in
Phoenix based on input from field officers at regional, district, and even individual city level.

Charles Loman, Assistant to Regional Vice-President, New York, further confirmed the importance of regional influence:

Within New York each area is broken down under the supervision of another person. All their ideas are gathered, and each one is familiar with his region whereas a man say in Phoenix wouldn't know some of the smaller towns and how the schedules are and, depending on the type of competition, the people you have. So, the input is given from the New York region. It is taken, more or less, by Phoenix; the decisions are made here, in the region.

Superimposed on this already regionally-responsive system are the small operators who, with lean overhead and high area identification, can meet intra-regional needs. As Mr. Morgan said: "I think the smaller regional companies do offer a service that the national companies don't offer, in terms of localised service, more personalised service." Mr. Simmons did "think it's healthy that we do have a lot of independents," while Ted Knappen, Senior Vice-President, Continental Trailways, felt that their existence was in the interests of providing good regional service.

Walter Scrobott, Vice-President and Comptroller, Peter Pan Bus Lines, a small and mainly in-state Massachusetts carrier maintained that his company was doing a better job on the routes they served than Greyhound or Trailways would:

An advantage that comes to mind is the ability of the smaller company to be more familiar with its market because of its direct association with it, whereas when you're dealing with a national company... that company is not really in a position to be as close to the market in a small geographic area such as this, and therefore is not as readily able to meet the needs and changing requirements of that particular market... Certain broad policies can be implemented in a central location, but in order to fine-tune and adapt those policies, a certain amount of decentralisation is necessary.
Further, it should not be overlooked that the bus industry is regulated at both Federal and state levels. State control varies, but in general sets out to ensure that adequate bus service is provided for that state. This mechanism provides for direct state-level influence over both routes and fares. AMTRAK, by contrast, is not subject to any state-level regulation other than as may be contained in contractual agreements for 403b service.

Although it is perhaps not fair to make too direct a comparison between AMTRAK and the bus industry because of basic differences in size, scope and role, it is clear that the bus industry is organisationally well-structured to meet regional needs while AMTRAK, with its entirely centralised planning function, is more distant from purely local concerns.

The scheme under discussion in Ohio, and efforts on the scale of New York State and California's suggest that an alternative, regionally-based configuration of AMTRAK might have been more successful in exploiting the inherent advantage of rail passenger service and serving regional needs. Consideration of some alternative helps further evaluate the effects of the present centralisation.

One possibility might be the operation of AMTRAK on a "federated" basis - regional AMTRAK territories would report to a central body whose main function would be co-ordination and broad policy setting. To reinforce this, funding might be channeled through the states, rather than through the Congress, to ensure greater regional accountability.

Greisman (1980) strongly favors a re-organisation of AMTRAK's territorial arrangements: "To succeed, AMTRAK cannot administer the entire country.
Rather, it should enter into partnerships with state, city and regional transportation agencies. "Mr. A., Staff Assistant to the House Appropriations Committee, felt likewise: "AMTRAK only makes sense in a regional context," he said,

It is easier for the regional governing body to see growth and development possibilities of rail where all transportation modes are getting clogged, easier to look at rail and say here's an alternative at an opportunity cost cheaper than a new jetport. It is easier for them to see than Congress... I'd organise AMTRAK into about 15 separate companies... A federal structure of AMTRAK would clearly be better than now. It would be a way of achieving the inherent advantages associated with the corridor idea. The states are more qualified to think of the relationships of rail to road to air than we are here in Washington.

Louis Rossi, Director, Rail Division, New York State Department of Transportation, strongly favors devolution of planning to the regions. Though he would prefer operation by a regional transportation authority over provision of service by AMTRAK, he was not unenthusiastic about regionalising the existing management structure:

I think the Washington AMTRAK office in the future should be much, much smaller... They should do only the things that need doing at the corporate level which is the ultimate financing and reservation systems... The first thing that I would try to do would be to create at the executive level a regional V.P. Have a V.P. for three different territories, maybe four... He in a sense should be a full-blown President in effect of his own territory.

Meanwhile, Barbara Beatty, Legislative Assistant to Representative Rousselot (R, California) said: "we feel states can more efficiently and without as much abuse or waste handle Federal funding, so if there is going to be Federal subsidy give a block grant to the states, and let the states handle it."

Opposition to decentralisation was evident amongst many of the AMTRAK management questioned, and from several Congressional staff. Wilfred
Leatherwood, Manager State and Local Services, AMTRAK Government Affairs, regarded centralised control as being most efficient; in his view, decentralisation would merely add superfluous layers of bureaucracy.

Representative Florio (D, New Jersey) Chairman, House Transportation sub-committee, "would just be apprehensive of regional planning being done without an appreciation of the whole." And while some Congressional staff did favor greater devolution of control, others felt that state participation should be increased through expansion of the 403b program. Some of them feared that if the states were to be given greater power, the system would become so fragmented that even short-distance services which should logically cross state lines would fail to do so. Said Ira Silverman: "Let's take, for instance, Pittsburgh to Cleveland. It's short-distance, very high-density; however, the fact that there are two states involved decreases the probability of it ever happening." And Howard Henry, Director, AMTRAK Market Planning and Forecasting, commented that Ohio would be more likely to provide only in-state service than to link up with other states.

This, however, goes against the evidence of the ORTA plans which include proposed links to three other states, and against the enthusiasm shown by neighboring states to join ORTA in a compact. The Pennsylvania Legislature has already indicated its approval; Michigan has already signed an agreement with Ohio. Illinois, Indiana, Kentucky, West Virginia and Missouri have also shown interest. Elsewhere, the New England Regional Commission is studying Boston to Portland and Montreal routes.

Other states are considering providing service without AMTRAK. Michigan has begun a $350,000 study of ways to provide rail service between
Detroit, Lansing and Grand Rapids; Japanese National Railways has proposed that Shinkansen-type service be established between Dallas and Houston, and the French Compagnie Générale d'Electricité has suggested that 125 mph trains link Atlantic City with Philadelphia.

There are really two questions here. The first concerns what AMTRAK would look like given a decentralised management structure, but the same accountability — to Congress in effect — as at present. The second concerns what would happen were control over the funding mechanism to also be sent down to the states. To answer the first, it could be argued that decentralised management alone would change little if Congress continued to wield the whip. It would, however, inevitably lead to greater contact with state-level interests and greater exposure to regional environment. As Charles Hilty, Administrative Assistant to Representative Madigan (R, Illinois), pointed out, such decentralisation would almost certainly increase "local and regional service because local and regional political pressures could be put into play." This could in turn influence Congressional regional delegations, and changed constituency-level perceptions, attitudes and support could filter back to Members of Congress, and influence them. Above all, to the regionally-based planner the policy domain, the job identification, would be centered on his region, and the pressure on him to maximise service for that region. Were the sort of management plan suggested by Mr. Rossi to be pursued, were the power base to be truly devolved, then AMTRAK's orientation would very likely be less nationalistic than under the present organisational regime.

The second question begs a third. Suppose that the funding mechanism
were sent down to state-level, would the states wish to continue with AMTRAK? John Ingram, Federal Representative, California Department of Transportation, would favor a national tax allocated to state treasuries for Transportation. And, as Roy Neel said: "if the money were to be turned over to the states, they would have natural provincial interests in serving cities within their states" but possibly "states would say we don't need the luxury of rail passenger service; what we need is to be able to but more buses." As seen above, Wisconsin has already demonstrated this thinking. And, should states opt for rail, they might opt for an ORTA-type arrangement, rather than use AMTRAK. This could lead to a radical change in AMTRAK's function and even, as Clarence Siegler, Supervisor Auditor, US General Accounting Office, suggested, destroy it. But, in the process, a more efficient and relevant transportation system could be provided.

The present centralised management and funding base does lead to a national identity, rather than regional identities one which may, moreover, be meaningless in the context of meeting the transportation needs of the nation. Structure of organisation and funding align task definition towards some "national" vision, which is further enhanced by the exclusion of regional political and information bases. The 403b program, being regarded as additional to, rather than part of the main task, has not stimulated a change in overall orientation which remains towards provision of a nationally-conceived whole which is inevitably less than the sum of the parts.
There has never been any examination of the values which underlie the concept of AMTRAK. When created, it simply perpetuated the mores of a dated concept, but these became deeply entrenched, and have programmed AMTRAK ever since.

The more fundamental a law is to our conceptual scheme, the less likely we are to choose it for revision. When some revision of our system of statements is called for, we prefer, other things being equal, a revision which disturbs the system least.

- Quine (1950)
Included in Parkinson's Law (1957) is the "Law of Triviality" which "means that the time spent on any item on the agenda will be in inverse proportion to the sum involved." It is illustrated by observation of a committee in action. The committee first approves a £10 million nuclear reactor in only two and a half minutes since most members of the committee neither know what a reactor is, nor what it is for.

A bicycle shed, cost of £350 comes up next for consideration. "A sum of £350 is well within everybody's comprehension. Everyone can visualise a bicycle shed. Discussion goes on, therefore, for forty-five minutes, with the possible result of saving some £50. Members at length sit back with a feeling of achievement."

The final discussion revolves around the monthly expenditure of £1.75 on coffee for meetings of the Joint Welfare Committee. This leads to "an even more acrimonious debate. There may be members of the Committee who fail to distinguish between asbestos and galvanised iron, but every man there knows about coffee - what it is, how it should be made, where it should be bought - and whether indeed it should be bought at all." The item occupies an hour and a half, after which it is still not resolved.

The world of AMTRAK is not so different; the bigger questions are more abstract, more difficult to confront and analyse, and therefore often receive little attention, or are ignored altogether. Everyone can visualise a train entering his home town; it is quite another matter to conceive of inter-organisational relationships, yet another to start thinking in terms of "nationalism" versus "regionalism" or to go to basic values such as "mobility" and "equality of opportunity" in attaining it.
Theory E is the theory of the Original Sin. It suggests that the long-distance route structure is a result of failure to identify values and provide for their satisfaction in the initial plan. That initial plan then became a blueprint for AMTRAK which has been reinforced by subsequent change only seen within the bounds of the given design.

The steady rate of decline of rail passenger service, a continuing trend broken only by the 1942-45 war years, continued into the 1960s. Mild optimism by some railroads, notably the Penn Central which became involved in upgrading Northeast Corridor service, proved to be false and short-lived. Regulation obliged the private railroads to continue operating unless the Interstate Commerce Commission permitted termination; such discontinuances were permitted at a liberal rate. It had become apparent that it was no longer feasible for private railroads to provide passenger service under the existing circumstances, and that some changes in policy would be necessary if the pattern of decline in service was to be halted. As Ira Silverman, Director of AMTRAK Marketing, put it: "without government intervention, the rail passenger train would disappear completely by 1980."

There are different interpretations of why the government needed to act. An argument in wide circulation at the time was that the railroads had deliberately discouraged passenger operation. As Ross Capon, Executive Director, National Association of Railroad Passengers, said:

There was a widespread belief that the train had been mismanaged by the private companies; there were some rather dramatic examples such as the Southern Pacific where they'd do things like close the ticket window an hour before train departure. If it was run by a company which believed in its mission to carry passengers, things would be better.
Conversely, the "free-market" argument stated that rail passenger service was on the decline because it was unprofitable, and could not become financially viable. As Bruce Horowitz of the AMTRAK Planning department said, there was a "recognition of the necessary extinction under free-market forces of virtually all long-distance services." A staff member of the House Appropriations Committee, Mr. A., agreed with this explanation: "our experience over the previous ten years showed that railroads wanted to get rid of rail passenger service because it was losing them money," he said. While recognising the premise that "private railroads were not interested in providing rail passenger service;" he is sharply critical of the "myth that this could be done at break-even or profit."

A crisis was occurring; the crash of the Penn Central, a major carrier of passengers in the east, did not inspire confidence, and the plight of the passenger train came into the public limelight.

Congress was under pressure. It was under pressure from the railroads which wanted to be relieved of the duty of operating passenger trains. It was under pressure from the rail passenger lobby which sought to keep things as they were. And labor, anxious to minimise job losses, was also keen to preserve the status quo. At the same time, the anti-government spending lobby talked in generalisations rather than specifics, and had little constituency support.

The resulting legislation (US Congress, 1970) was very much a compromise. It brought relief to the railroads, though perhaps not as much as they would have liked. It satisfied a nationwide rail passenger lobby. It preserved many jobs (and, as the railroads would continue to operate the
service, existing contract agreements on manning levels and pay would be retained). It also aimed at appeasing the "free-market" adherents but it did this, strangely enough, by implicitly proceeding under the assumptions of the "discouragement" hypothesis which the free-marketeers so strongly contested. It established AMTRAK as a "for profit" corporation; it was to be government-aided for an initial two year period; if it proved to be unsuccessful (financially), the theory was that the project would then be scrapped. With hindsight, the final twinge of irony was the feeling that the corporate structure being given to AMTRAK would help give it an independent identity, and free it from Congressional interference.

Secretary of Transportation John Volpe had the job of designating the end-points that were to be served. His initial plan consisted of a pattern of routes emanating from New York and Chicago which, though they radiated through the country, were criticised for failing to constitute a complete network. In line with provision of a full nationwide system, further routes were therefore added between Seattle and San Diego, Los Angeles and New Orleans, and Norfolk and Cincinatti. Many trains were justified on the basis of inadequacy of other public transport, rather than on the grounds that, compared to the potential of other modes, they could provide the best service to the areas concerned.

Once the end-points had been designated, it fell to the Incorporators of the Corporation to map out the precise line of the routes. As Roy Neel, Legislative Assistant to Representative Gore (D, Tennessee), put it:

The AMTRAK scheme was put together in a couple of nights in a hotel room. They just took out a route map and figured out where they could go, where they'd have the fewest political and legal problems with the railroads and with Congressmen, and that was the system, and that remained intact for almost eight years.
How we understand a problem depends largely on how we analyse it; yet, how we analyse a problem depends on how we define it. The wrong questions have been asked about AMTRAK since before its birth, the misconduct of inquiry perpetuating the Original Sin; the real issues have never been confronted.

As Simon (1957) said: "the capacity of the human mind for formulating and solving complex problems is very small compared to the size of the problems whose solution is required for objectively rational behavior in the real world - or even for a reasonable approximation to such objective rationality." Despite this - maybe because of it - people are prone to simplify, yet to feel that on such a basis they have an "objective" and considered opinion.

As Coates (1979) sees the situation, however, the fact that "any significant public policy matter is an interlocking and nesting collection of subissues" makes it difficult to "come to grips" with the key issue, which is not usually:

Presented in a clear, cogent or neutral way by any of the parties concerned...

Most people operate in ordinary discourse under the general assumption that they understand the issues, and that the people with public responsibilities also understand the issues. It is important to test that hypothesis. It is my belief that quite to the contrary, even those most intimately associated with issues, public officials, bureaucrats, public interest groups, lobbyists, various stakeholders often find it to their advantage not to confront the issues, not to define them, not to state them clearly, and not to use them as a basis for discourse, analysis, evaluation and decision making. Take for example any of the current favorite areas of public concern, "oil spills in the Atlantic," "crime in the streets," "housing policy," "energy policy" or whatever, and make the following Gendanken (thought) experiment. State the issue as you understand it. The chances are, from my experience, that what you come up with is a phrase, or a question or a platitude. It is unlikely that your issue statement will explicitly be framed in terms of structural conflict. Getting it
right is a challenge to one's perspicacity, accuracy, precision, and judgement. It is easier to be vague. Most issues definition is conducted at the level of a teenager, whose favorite recourse in the face of his imprecise and vague understanding is "like, you know."

In the emotion-inspired, uninformed generalisations of many Members of Congress we have already seen in earlier Theories, we have seen many platitudes, many vaguenesses, many failures to define central issues.

A look into any book of Congressional discussion gives a vivid impression of how problems are actually tackled. Maybe the point is most firmly brought home by quoting this typical statement before a Congressional committee, in this case Representative Marlenee (D, Montana) before the 1979 House Transportation sub-committee Hearings. "Mr. Chairman," he said:

I have personally slept in pullmans so filthy that I could not get my son to undress and go to bed in that pullman car. Of course, I think this points up something about the ridership. People will not patronise a flophouse. Of course, people will not put up with waiting in a depot that resembles the corner hangout in the slums where the muggers and pimps hang out...

Mr. Chairman, only the funeral industry can be allowed the luxury of making sure its customers don't come back.

Actually, buried in the rhetoric, the old "discouragement" hypothesis yet once more emerges. Not that the speaker thinks of what he is saying specifically in such terms. Not that he has reflected on alternative reasons why AMTRAK was not being so well used. Not that he has asked himself whether there should be an AMTRAK and if so, what is should look like. We are caught in the world of Parkinson where the trivial is the talking point. Not only do dirty Pullman cars attract Congressional attention; there seems to be a particular fascination with malfunctioning toilets, a problem more easily contemplated than one questioning the
ancestral privilege of the mobile sanitary appliance - along with the train transporting it - to be in existence at all.

Hart (1976) cogently criticises the idea of "policy-making as a product of rational analysis," his definition of which, on p.31, introduced Theories A:

In fact on closer examination imagination and intuition often play a larger role than rational analysis as it is described above. Rather than systematically considering alternatives many plans are based on a single concept, or in Sir Geoffrey Vicker's phrase, "appreciation" of the city. Applied imagination therefore is an extremely important, if often little mentioned, method underlying plan making and policy formulation.

This does indeed nicely describe the "system" of "visionary" Congressmen who have transported images of AMTRAK to their psyche as a revered idée fixe, who have an "appreciation" of the problem, rather than an "understanding."

Lindblom (1980) attacks the reality of the rational ideal from a different direction: "because policies follow from political interaction rather than from analytical conclusions, the process does not correspond to conventionally conceived rational problem solving, which is an intellectual process." We have here, in essence, the "political" argument which has surfaced so often above. Yet, in many ways, political and learning theories are not disparate, but symbiotic. The immediacy of a particular political situation may cloud the information field and inhibit full concept formulation and learning processes. On the other hand, a poor and biased information base may make the holder more susceptible to an attractive political argument in line with its tenets which, though unsubstantiated in an information sense, can then gain the political hallmark of approval; in this way ideas conceived in a
visionary sense may gain validation.

The vision thus gains in definition, and leads to what Kaplan (1964) refers to as the "premature closure of our ideas," a result of convincing ourselves that a situation is well-structured when, in fact it indeed is not.

Given this view, it is somewhat disturbing to hear John Hoyt, Legislative Assistant to Congressman Devine (R, Ohio) say that: "It appeared the Congress felt that {AMTRAK} was the best alternative at the time." It is yet more worrying to think of the implications of the statement of Matthew Scocozza, Senior Minority Counsel, Senate Commerce Committee, to the effect that: "Congress made the policy decision that passenger ridership was in the public interest; it provided an important alternative." This implies that Congress had evaluated the whole range of possible plans in light of stated goals which, as we are discovering, is rather far removed from the reality of the affair.

As Simon (1958) suggested, decision making often reduces to a choice between "doing x" or "not doing x." Comments Rondinelli (1973): "not doing x" may represent the whole set of possible alternatives that decision makers lack the resources, interest, information, or power to evaluate... If "doing x" is considered satisfactory to the participating interest groups, alternatives may never be explicated."

To take Roy Neel's encapsulation of the mood of the day, this appears to be just what happened. The question was "whether to retain what had become bankrupt passenger service, or allow the market place to take its toll and let the passenger train go the way of the trolley car," and the
answer having been the selection of the former.

Notice how the problem becomes defined in terms of an already existing service, rather than in terms of user needs, a point taken up by Levine (1978) who points out that questions have been generated by:

Carrier financial instability (e.g. bankrupt railroads, insolvent airlines, deficit transit operators etc.), and focus on alternative means of federal assistance to "solve" the problem... Carrier desires become synonymous with transportation problems, issues and/or national interest. Obviously, since carriers cannot alleviate their own problems (that is why they have needs), the federal government is viewed as the logical candidate for rescuing the various modes.

In effect, the carrier need is seen in concrete terms, but alleviating it is seen in relation to providing for transportation needs. The information base relates to the problems of the carriers, and is enhanced by the enactment of a politically-distributive "solution," which, though only satisfactory to the "user" constituency (which functions as a "constraint" and is, essentially, served as a by-product) may mistakenly, in the absence of further consideration, be regarded as "optimal."

Once established, the danger is great that such a solution carries forward because, though it is only the result of a partial view, it has the appearance of solidity - of structure. Thenceforth, as Schön (1971) suggests, "the issues around which policy and program must be shaped" are accepted "as mysteriously given." The frame is not challenged, only the sub-units within it. Rein (1976) elucidates further:

Man is, after all, interested not only in controlling, manipulating and predicting the consequences for his environment so that it falls in with his purposes, but also in creating and maintaining a sense of order, continuity and meaning in life. Our concern for order, both in nature and in human affairs, derives from a fundamental inability to tolerate too much confusion and disarray. Structure and meaning are essential to our existence. Therefore, when objective facts threaten the orderly framework which assigns meaning to events, we tend to repudiate the facts rather than
abandon the framework. In fact, the quest for order and meaning may be more compelling than the search for truth, which can threaten the order we have created.

Authors such as Zwerling (1974) and Hart (1976) have criticised prescriptive policies which mold the future and leave little scope for change. The BART (Bay Area Rapid Transit) system was the target for Zwerling's analysis, while Hart looked at road-building policies in London. The subjects of both works reflect hugely expensive and controversial immovable physical structures.

Zwerling contrasts the "comprehensive" strategy which creates such immortal monuments to an "incremental" strategy "suitable to a situation in which the future is uncertain and the appropriate method of coping with it is trial-and-error... Lacking a commitment to a specific vision of the future," the decision-maker "attempts to maximise his chances of being able to meet whatever possibilities the future may hold. Tactically, the decision-maker tries to avoid restrictive commitments, to minimise the risk of being wrong."

AMTRAK could technically be said to have been intended as an example of this latter strategy, set up only as an experiment, to be terminated should it fail. As Arthur Lewis, President of the American Bus Association, and one of the Incorporators of AMTRAK, said in 1979 (US Congress, 1979b):

As an incorporator, we took on the position of putting in some long-haul trains that were mandated in the Act the idea being that after 2 years and 2 months AMTRAK if it was not able to generate a profit on those long haul routes, that AMTRAK would be able to discontinue that service.

I frankly took a very active role as an incorporator, one, believing that I was making a major contribution to this country and trying to do something about rail service. But at that time I did not expect the long-haul trains to survive July 1, 1973. I fully expected the the corridors to survive, and I expected the corridor to be made possible.
Yet, as we have seen, this was not to happen, and the AMTRAK scheme became a prescription to mold the future, not by creating an immovable physical structure, nor necessarily by creating sunken capital investment, but by creating above all a system of perception of worth and evaluation - a value frame if you will - which caused future valuations to occur only under the assumption of a creation which already was.

In Theory B2, cognitive learning processes which acted to reinforce existing information bases or ideologies or interests of concern to Members of Congress were examined. Yet, above individual perceptions, there widely exists a yet more deeply rooted conceptual framework setting up norms as to what AMTRAK is here to do, and that framework not only leads to filtering of information received, but also to selection of only certain processes of learning in accord with, and which will reinforce the framework.

With the establishment of AMTRAK in 1970, the concept of the National Railroad Passenger Corporation became firmly embedded in the minds of many Members of Congress, interpreted as meaning that AMTRAK should serve all the nation. It is thus easy to see the logic of concluding that as their District is part of the nation, it should be served. It also paved the way for political pressures to further reinforce such beliefs.

Learning only occurred selectively in accord with the dictates of the original plan. Ideas involving "regionalism" and "inter-modalism" for example, have not been developed because they do not form a part of it. As Rein suggests might happen, signals of changed purpose are ignored as noise if they don't accord with it, not necessarily deliberately, but
as a sub-conscious cognitive selection process further encouraged by the political milieu.

Thus, as Charles Hilty, Administrative Assistant to Representative Madigan (R, Illinois) said, there was a "perception that a national system should continue to be provided. I think there is a strong desire to maintain a system such as it was when AMTRAK started." And Michael Gessel, Legislative Assistant to Representative Matsui (D, California) implicitly referred to the inhibiting effect of the original frame. As he sees it, trains are symbols of the past, and when Congressmen:

Think of passenger railroads they think of the long-distance trains, and they think of those old codgers because they're trying to relive the joys of their youth, and they don't think of rail corridors, and if they do think of rail corridors, they think of them in the same terms that they think of the long-distance passenger routes.

Perhaps the best example of how the original conception of AMTRAK, ill-attuned to today's needs though it may be, continues to program policy, concerns the criteria for evaluating service improvements set up under the AMTRAK Reorganization Act of 1979 (US Congress, 1979d). The standards set were in terms of Passenger Miles per Train Mile (150 minimum for long-distance, 80 for short-distance) and Avoidable Loss per Passenger Mile (7¢ maximum for long-distance, 9¢ for short-distance).

Said Representative James Florio (D, New Jersey), Chairman House Transportation sub-committee:

Political benefits should have really no consideration, and that's in fact what we've done in this last legislation. We have provided for an objective determination - it's 150 PM/TM and then a cost ratio, and a train or a route has to fit within that criteria, or it goes.
"Objective" though this measure may seem, however, it effectively dictates the continuance of the present system, for it merely sets a minimal standard which a large part of the present network can meet. Instead of directing attention to how assets might be reallocated towards a more relevant and efficient system, the criteria simply perpetuate an imperfect and dated original conception. Because the criteria appear to be respectable and objective, Members of Congress will tend to conclude that any train which meets them, meets a certain and legitimate standard, and this will deflect attention away from the consideration of possible alternative arrangements. The criteria thus reinforce the existing image of AMTRAK as a "national" system, and form part of the conceptual filtering system through which information - albeit unknowingly - is channeled and learning conducted.

A useful way of putting this problem in perspective is through the type of "value-hierarchy" developed by Wachs and Schofer (1969). In this structure, they define five levels. At the top are values "extremely high-level abstractions," beneath which are goals:

Idealized end-states of the environment... Goals are generalised statements which broadly relate the physical environment to values but to which, because they are also high-level abstractions, no test for fulfilment may readily be applied... An "objective" is a specific statement which is the outgrowth of a goal, and which is truly attainable because of its reference to the physical world. In addition, an objective is stated in such a way as to allow some form of measurement of the degree to which it has been attained.

"Criteria" are the specific measures or tests which reflect the degree of attainment of particular objectives... The minimum acceptable level of the criterion... is known as a "standard."... The existence of meaningful standards and criteria... implies the existence of objectives. Objectives, in turn, are valid, if they are an outgrowth of goals, which depend upon the values of society.

The lower levels of the hierarchy are, however, easiest to grapple with
and, as Braybrooke and Lindblom (1963) say, decision-makers "often rule out of bounds the uninteresting (to them), the remote, the imponderable, and the poorly understood, no matter how important." Higher level abstractions thus tend to get ignored, as lower-order ones are more readily accessible. As Wachs and Schofer comment:

The evaluation of alternative transportation plans has seldom, if ever, been based upon a rational inquiry into appropriate goals, meaningful objectives, and logical criteria which result from the chain of dependence relating these to the societal values. Objectives and criteria, rather, have been narrow in scope and have reflected the intuition and biases of planners who usually did not have explicit statements of goals and objectives toward which to work.

In executing lower level work, however, implied weights are given to the higher level orders, and these may well be different from were goals or values to be considered directly - in other words, the results may not meet the needs of society. "Many current planning efforts have not established comprehensive and specific objectives, and, consequently plan design has become the process of merely extending and expanding existing physical facilities." (Wachs and Schofer).

This is, indeed, the story of the 1979 "restructuring" which merely set narrowly defined criteria and standards which made no reference to goals and values. By failing to look goals and values head-on - and hence address the central question of the transportation wants of society - the past was allowed to continue programming the future. The imputed values and goals implied by the "criteria" were not consonant with best meeting the transportation needs of society, but on minimising the cost of an existing bête noire, the value of which had not been considered.
We see as typical symptoms of the malaise, a failure to define the values of particular services. In Theory D1 it was suggested that a failure to properly consider costs of particular routes made it extremely difficult to meaningfully evaluate AMTRAK management performance. More important, however, is that no attention was paid to the other side of the equation – benefits. With social benefits ignored, a train producing no social benefits may continue if it meets the criteria set; conversely, a worthwhile service would technically (though not necessarily politically) be inviable if it fails to meet them.

In an interview with US News and World Report in February, 1972 (USNWR, 1972), then AMTRAK President Roger Lewis cited the British subsidy scheme as a good one. This system specifically identifies socially desirable service and, if the social value is greater than the loss, pays a "social fare" on loss-making services, a payment for which the railroad agrees to operate the service. Lewis clearly felt that American socially desirable services would be identified, evaluated and subsidised accordingly, but this was not to happen.

If we trace the criteria back, we come to the Department of Transportation, The Rail Services Planning Office of the Interstate Commerce Commission (ICC, 1978) had criticised DOT's preliminary report (US DOT, 1978) and said that: "The Secretary's final route structure recommendations should be based on the social criteria set forth in the AMTRAK Improvement Act of 1978, rather than on the criteria used in the development of the preliminary recommendations."

The DOT had retorted that:
The statute manifestly did not require nor favor replacement of quantitative financial performance factors with the abstract notion of social needs. Instead, the Congress expressly declared that AMTRAK should be operated and managed as though it were a profit making business. (US DOT, 1979).

We once more come back to the faults of the original conception.

It would be mistaken, though, to assume that we would be confronting the top of the "value-hierarchy" by merely carrying out a cost-benefit analysis, and retaining those routes for which benefits were seen to exceed costs. The value-hierarchy implies starting at the top with a value, and working down to a result. Looking for meeting needs. And not necessarily using a particular mode.

Such an approach might have started by the definition of values such as "mobility" and "equity." Search for information and goal setting might then have proceeded directed by such concepts, and possible solutions (by which - as will be explained in greater depth later - I mean both outputs and processes which produce them) tested in the light of their ability to reflect the values to be espoused. Such an approach would have required the devotion of thought to consideration of what the role of passenger service in the modern economy might be in the light of all its attributes, its virtues, its disadvantages, and all these in the light of those pertaining to other forms of transportation. Thus, evaluation would have started with a wide net, and worked down to the solution to be adopted.

But all this should have been done back in 1969 and 1970, before AMTRAK was ever born. At that time, the real issues of values and consequent wants were ignored. Discussion did not center around how those wants might be satisfied, around which piece of machinery in which situation
might best enable us to achieve our desires. Instead, it started with the machinery itself; in beginning discussion having already blindly progressed far up the decision tree, many alternative branches were inevitably ignored.

Such mistakes then made it likely that in 1979 the same errors would be repeated, given that they had become enshrined as accepted orthodoxy. The structure of AMTRAK routes had become, in the terms of the Quine (1950) quotation which headed this section, a "fundamental law."

Under such circumstances it was the yet more essential that a return to basic values be made. Yet, the false path already established, it was the yet more unlikely that steps would be re-trod, thinking started anew. The Original Sin had been committed; now the consequences had to be borne.
There are those who think these sorts of things (e.g. economic development of the central city, pollution, problems of the handicapped) can be quantified and there are consultants more than willing to try. No doubt the effort should be made, and it may help sharpen the choices. No one can argue against rationality. But it may be doubted that any problem that is as complicated a mixture as America's total transportation system, embedded in and integral to an even more complicated society, can ever be made to fit in a two-pan balance.

- NRPC (1976)
As indicated in the introduction, this work not only sets out to explain the existence of a certain structure - a long-distance, inter-connected, rail-passenger network; it also seeks to examine the way we are prone to understand phenomena, and critique it. This section focuses on the work of the analyst, particularly the supposedly value-neutral "outside" observer, and shows that similar problems to those distorting the output of decision-makers afflict his work.

Levine (1978) is strongly critical of six "national" transportation studies which, though purporting to be comprehensive and value-neutral, were in fact narrow and partial. He finds that:

Government studies have tended to ask all the wrong questions so that even "good" and responsive answers result in obvious and somewhat irrelevant conclusions. Wrong questions are ones which do not consider the role of government in planning, organising and controlling the transportation system.

He is particularly critical of the studies for ignoring:

The ubiquitous problem of national versus regional needs... Assuming the need for national policy in all areas of transportation is a disservice to national goals and public interest... Ignoring the possibility that regional policy might be the best form of national policy undermines research, and limits the options available to policymakers...

What may be most disturbing about the subject of issue classification is that past research efforts have not attempted to organise and interrelate alleged transportation problems... Determination of trade-offs among various goals cannot be undertaken unless all national objectives, contradictory as they may be, are identified and assigned relative priorities... A classification scheme which locates issues within a comprehensive and interrelated network (that is, system) is prerequisite to meaningful transportation research and the development of effective national transportation policy...

The sample, as with the universe it represents, is characterised by a list of issues where identification required little research. Identified issues tended to be those questions raising from the criteria (or lack of criteria) the federal government applied to regulate or promote transportation, as well as carrier needs relative to the availability of subsequent public aid...

In conclusion, a review of historic research studies indicates that much research is not research in its precise and technical
interpretation. Rather, it is unimaginative, similarly structured, predictably formed, and redundant discussion of popular issues, begging the root problem which is causing increased federal involvement in transportation.

How then does this come about? My feeling is that it is related to the search for structure and the basic desire for accomplishment. The most obvious, the least abstract, are the easiest to tackle because they are the most sharply defined. It is easier to be conclusive when everything is laid before you. The temptation is to take everything that can be readily perceived, but erroneously assume that it represents the total field of inquiry.

Such error is closely allied with a misconceived desire for a "rational" analysis. The idea of rationality forms the mainstay of classical economics, for it provides a clean framework of analysis. As Harsanyi (1966) said:

"The concept of rational behavior is often a very powerful explanatory principle, because it can account for a very large amount of empirical facts about people's behavior in terms of a few simple assumptions about the goals (or ends) people are trying to achieve."

It provides for solidity and clarity, avoids the confusion of allowing for every little variable, provides explanation, prediction, and sure standards against which to compare reality. The results of "rational" analysis exude confidence and make it an ideal for the professional; it is seen as the means to the objective, value-neutral analysis it is for him to produce. The concept of rationality is thus a warm and welcome Linus blanket: it gives us faith in organisations; it gives us a feeling of being in control because of the powerful and certain analytic ability it engenders.
There are, herein, two crucial aspects. The first is that we are assuming rational behavior on the part of the actors, the product of whose behavior we are analyzing. But, the second is that we ourselves are torn towards executing our analysis in what we conceive of as a "rational" frame, one in which we see the world as an equation calibrated according to our understanding of goals and objectives, and solved through the introduction of the measurable inputs and outputs which we perceive to act in furtherance of them. In doing this, we tend to neglect the unmeasurable, although it may be just such phenomena which contain the encoding which, like the DNA of organic life, must be identified if a real understanding of cause is to be had, and if the analysis is to have any meaning.

Often actual outcomes do not match the analyst's ideal predicted outcome (narrowly defined and the result of partial analysis that it is). When this happens, the natural inclination is to recommend additions or subtractions of components from the faulty system, rather than consider the need for modifications to the framework supplying those parts. Thus, in the case of AMTRAK, the analyst will first assume that there are actual goals (without necessarily defining them) and that the actors at play are attempting to maximise their achievement. Having done this, if he finds a fault, the question will not be so much one of the need to understand concepts behind network development, and reconfigure political, managerial, or other "infrastructural" components; rather, it will be for the analyst to find that certain routes are not energy efficient, and others lose too much money. Surgery can then be recommended.

But this will only be a partial view, and herein lies the danger. For,
it may be used to falsely present a particular view as fully justified and explained by analysis. As Greenberger et al (1976) point out, while:

The growth in the useful application of policy models to the problems facing government decision makers is not keeping up with the increase in either the number or complexity of these problems... at the same time, the use of models to dramatize or publicise particular points of view is overshadowing their use for the enlightenment of policy makers.

Kramer (1975) neatly explains how this happens:

Although public policy analysis is only partial, not comprehensive, analysis, the techniques used and the emphasis on quantification give the results of analysis a "scientific" appearance - an appearance of value-free rationality at work. Non-analysts, whether administrative generalists, Congressmen, or ordinary citizens, disregard these scientific results of analysis at their peril. How can people in this "post-industrial age" disregard science? If they do, they must be acting on ideological, not scientific grounds. Nonanalysts who wish to set aside a given piece of analytic work must be able to raise the questions that are of necessity, left out of partial analysis. To avoid the castigation of the analyst, who has staked out the claim to science, the nonanalyst decision maker must be able to see that the scientific results of analysis are in fact the results of an ideology. This ideology leads the analyst to direct his or her inquiry to certain sources and ignore others, or alter the weights of various factors according to perceptions of reality reflected in his or her models.

The dangers of the partial appearing scientific are most immediate in the CBO (1979) energy report, used as evidence during House Appropriations Committee Hearings (US Congress, 1979a), yet which - as is shown in APPENDIX B - is a worthless document constructed on brash and unjustified assumptions.

GAO studies have invariably been cost oriented, and have once more possessed an ability to blind based on hard numbers although, as Levine points out, even costing is really an art, rather than a science.

DOT, as we have seen in bounty, also has a remarkable penchant to use science to its own end. The Secretary's 1979 study was a particularly
insidious example, reflecting as it did a pure reductionist effort.

It is interesting that Nat Simon, Executive Director, Ohio Rail Transportation Authority, reached the conclusion that "the US DOT assumed that AMTRAK should provide long-distance service" because "the report ignored the value of regional rail corridors outside the Northeast." (US Congress, 1979b). This is certainly not the view of the DOT, but became imputed as a goal because, in failing to confront values and goals directly, the existing framework became automatically perpetuated.

While, however, the average cynic will not be too surprised to find such phenomena in government agency output, it is particularly sickening to find it in the apparently objective analysis of an academic. Coates (1979) however, is not surprised:

The academic tends to divide the problem along disciplinary categories rather than treat it holistically. After all, to undertake a holistic treatment of any subject whether it be crime, public transportation, war, or forest management, would require the expert to step outside his expertise and make himself vulnerable personally, psychologically, and intellectually. That learning experience hits very hard at the ego of a forty-five year old senior professor who is used to guaranteed accomplishment in a narrow area sustained and supported by a covey of graduate students often treating him as a minor deity.

The academic tends to opt for repeating the narrow, the prosaic, the certifiable, the pedestrian, and the safe rather than engaging the policy issue and going past the fact to generate public wisdom... The conflict between being right and being useful is not a conflict of right and wrong, but one of vanity and self-interest versus vulnerability and public service... The bureaucrat and the expert also has a penchant for wanting to convert issues into problems since that provides something he can safely sink his teeth into.

The purpose of the American Enterprise Institute for Public Policy Research, we are told inside the cover of Hilton (1980) "is to assist policy makers, scholars, businessmen, the press, and the public by
providing objective analysis of national and international issues."

Yet, the Hilton analysis, "rational" though it may appear, is anything but objective. It is nothing but an attempt to validate - in a quantitative cookbook style - a firmly pre-established opinion (see, for example, Hilton, 1958) by the use of a series of carefully selected and narrow facts. Although Hilton makes the good point that the "discouragement" hypothesis upon which AMTRAK was based was fallacious, his "analysis" is entirely conceived within the assumption of this faulty framework. Performance is thus judged in the light of the present system, rather than under some possibly better arrangement. The results of this partial analysis are then used to form the general conclusion that AMTRAK serves no useful function in the national transport network, and should be dissolved. Because he, by default, imputes a dated image into the concept of the passenger train, it is not surprising that it is beyond him to see a modern role for passenger service, and for him to confidently arrive at his findings.

Hilton's approach is, moreover, entirely "black-box" failing to give consideration to political and management processes, let alone to the original AMTRAK conceptualisation. As such, it is incapable of leading us to cause, diagnosis and possible cure. In total, the work contains no more than the twisted statement of a self-evident half-truth, and is really of no use to anyone.

Mulvey (1978) is also confident about his conclusion. He declares that his report "has examined the AMTRAK experiment in light of the transportation objectives that it was designed to fulfil," finds that "long-haul trains make little sense except for limited amounts of
recreational travel," and recommends that such service be reduced or eliminated, such as remains being priced at cost, and that short-distance markets be re-examined.

Mulvey's is certainly a more worthwhile contribution to the subject than Hilton's. He does discuss different kinds of rail passenger routes and service, and he does recommend change. But, although he discusses problems in the early AMTRAK legislation, this is not developed with respect to change scenarios and his product, lacking discussion of the processes at work causing the problems he identifies, is more description than analysis.

His recommendations may have validity but, because he ignores the value, political and organisational frameworks within which AMTRAK operates, the given frameworks are implicitly assumed to be capable of providing for the change he suggests. By ignoring this base, credence is given - in effect tacitly and unknowingly - to the idea of rationality as being built into the machine that has produced the outputs. Which we know by now is unfortunately untrue. It is like trying to solve a problem on a computer which has the wrong program in. You can try feeding in the data as may times as you like, but you will not get an answer unless the program is changed. In similar fashion, the wrong values have been inputed into the system; a new arrangement which itself has (different) inputed values is recommended, but no connection is made between the two sets of inputed values which lie behind the goals, and between the inputed values and the processes they signify and induce.

A useful metaphor for the analyst's thought processes lies in the working of an electromagnet. Imagine such a device, and an object in its
field which is attracted when the current flows. We cannot see the magnetic field which attracts the object, and we therefore tend to think of the magnet itself attracting the object, rather than the field. Yet, that field is the essential medium through which the force of attraction is exercised, unseen though it may be. Finally, there is the electricity without which the unit cannot function at all. Though we cannot see it, the power of the electricity determines, through the magnetic field, the degree of attraction. Though it may be thought of as external to the magnet-attraction-object system, it is always present when the system is operating, and in fact completely controls it.

Similarly, a value system (the electricity) creates a visible object such as AMTRAK (the magnet) through which organisational and political structures (the magnetic field) implied by the value system, act to create the output of a structure of routes and services thereupon (the object).

Rein (1976) looks for an alternative:

If we wish to reject the value-decisionistic view of the positivists, which holds that values must be accepted as given since they are established by the will or by passion; that we must distinguish between grounded fact statements and ungrounded value statements; and that the gulf between goals and value judgements and the universe of facts can be best bridged by an applied science model.

He suggests as competing framework a:

value critical approach. According to this view, pure science requires analytic procedures that cannot be applied to the study of society. Moreover, we are not even interested in "pure" social science - a social science divorced from action - since the meaning of social events is inextricably bound up with the values we attach to them...

A primary function of analysis is to submit goals to critical review rather than merely treating them as given... The value-critical approach takes the line that values are not simply wishes and desires but are grounded in a fundamental structure
which is central to real processes, and they can therefore become a meaningful subject of debate...

When I affirm equality as a value, I want further to inquire what this means and why it is worthwhile, and not simply how one can reach this end or how one can catalogue the views of those who support, repudiate or are indifferent to it... End-values, societal goals, etc., are inherently controversial. They cannot be treated "scientifically" along positivist lines.

A value-critical approach tries to understand the logic, meaning and consistency of ends, and it attempts to make a critique of values at every stage of analysis. Every F{act} statement can be regarded as demonstrating some truth within a framework of values and assumptions. Analytic procedures themselves imply values. For example, it is the very nature of measurement that we agree to neglect factors which may be of major importance but are not susceptible to measurement...

Policy analysis is not invalidated by the close relationship between values and modes of analysis, but it does seem that there will never be one "true analysis." We cannot conclude that every analysis must simply be judged good or bad within the framework of its value assumptions. On the contrary, the study of policy can be most perceptive when it examines afresh the critical values assumption on which action proceeds. And the assumption about the context within which the analysis is framed is often most important, including the definition and the choices between constraints and options which are typically based on belief or opportunity or both.

Rein is recommending going straight to the electricity. Yet that electricity is so invisible, so unfathomable that it is almost beyond our grasp.

It is easiest, most obvious, to ignore the process altogether and to concentrate on the output itself and, on the basis of its perceived benefits (or lack thereof) conclude that more or less of it is needed. Under such circumstances value systems are ignored, as are the processes which translate them into the output. Yet this is the way Hilton (and much of Congress) conceives the problem.

It is one up to examine the outputs and, in the light of their nature, to recommend their reconfiguration. Yet, there is the temptation to base
such analysis on existing outputs, rather than returning to basic values, and proceeding down the value-hierarchy to the end result which the values-to-be-espoused imply. Without such soul-searching, the new result produced may itself fail to reflect the desired value structure.
CONCLUSION – THAT THOU SHALT SIN
NO LONGER

The terrible responsibility of the planner is that... he creates monuments that survive.

- Hall (1970)

Please could you tell me how I might recognise a moral good when I see one on the shelf.

- Harvard Business School student during class on "Ethical Aspects of Corporate Policy."
This final section reviews the theories put forward in this text, particularly in the light of the previous section, and presents the conclusions of the work as a whole.

This inquiry started by asking the seemingly innocent question as to why AMTRAK was dominated by a long-distance inter-connected national network, rather than a series of short-distance regional rail systems.

Theories A consisted of a series of propositions as to why the observed pattern was most logical. Each proposition nested in the theory that the pattern had been arrived at as a result of "rational" analysis targeted at best addressing the value, be it mobility, equity, energy saving, or even nostalgia satisfaction, implied by the goals assumed by the proposition. It would be fair to say that the overall value frame within which I worked in testing Theories A was one which implied that AMTRAK's job was to provide transportation services where it had the greatest relative inherent advantage with respect to the total transportation needs of the community and to the total transportation system, comprised as it is of the various modes. The precepts of Theories A were found to be deficient on these and on their particular counts.

I shall not pretend that Theories A were in any way an attempt to find "the answer:" they were at best a critique of the response to a certain set of goals (with associated imputed values) in the light of a certain value frame. It would be pointless to simply declare: "ALL CHANGE!" (as Mulvey does), because we have not done a full value-critical appraisal: particularly because, at this stage, we have no concept of "process" (a concept Mulvey does not develop) - of what to change.

This work was not intended to find a solution, but to gain an
understanding of the processes at work; accordingly, output evaluation does not continue past Theories A, the emphasis being placed on process.

It is at this stage that I must mention what I consider to be a rather significant omission from Rein (1976)'s otherwise impressive value-critical scheme. It is, at heart, a scheme that focuses on output, but tends to ignore process. Yet value-critical analysis of process is essential to provide explanation of a result which we may not like and is equally, if not more, important in developing the means by which a value-critically approved output may be obtained.

Theory B1 (a tale of philandering, risk-averse Congressmen) is a very attractive theory because it is readily understandable, and because there is so much immediate evidence of the Theory-in-operation. We may learn something of poor political process, We see how — to our mind — Members of Congress pervert the process by each automatically demanding service through his District. Such analysis (which in effect compares the "magnetic field" to the "object") will, however, give little power to explain or effect change by itself. An exhortation to the effect that Congressmen should become more "moral" is unlikely to achieve much if the environment and structuring of component units within it remain unaltered.

Theory B2 goes more deeply into the micro-structure of cause and effect. It helps demonstrate how Members of Congress learn, and shows how information sources are not randomly searched, but tapped in a way likely to create a biased picture. From such knowledge, the normative investigator might set about looking for ways to improve learning
processes. But he will not get very far if he considers such processes in a vacuum, for the basis of learning is not merely the information received on a day-to-day basis, important though it can be in preventing learning, but the underlying value frame which serves as the information base for that learning, often quite sub-consciously. As was shown in Theory E, it is that frame which defines the environment within which learning takes place. It is only by seeking out the encoded values that we can understand why, for example, the 1979 criteria cannot generate change, even though they may have been genuinely designed for that purpose.

The first section of Theory B2 is in many ways a bridge between Theories B1 and B2. It helps tell us why constituents are likely to be pleased by Members of Congress voting for AMTRAK routes through their home town; it helps expose their misconceived value-frame which in turn "informs" Congressmen as to the action they must take in order to satisfy their constituency.

The actions of Members seen through the self-preservationist B1 process are equally consistent with a value program which encodes in the process the notion that all the nation should have rail passenger service except, in this case, it is the constituents mis-programmed value frame which acts on the risk-averse Congressmen who accept it not because they believe in it, but because it is a risk-minimising strategy. Constituency expectations which Members try to satisfy, whether efficient or not, are in turn based upon a basis of entitlement of the 1970 Act, the Original Sin.

Theories C, like Theories B, are also useful, but are only of real
explanatory ability when referred to the underlying value program.

Further, they are in many ways filtrates of Theories B, D and ultimately E in that it is the political process, and its reaction to value programming that generates the milieu in which the subject of Theories C - management - operates. This is most obvious in the cases of Theories C1, C2 and C3, but is so in all cases.

C3 is included, although it may appear to be a restatment of B1, because it demonstrates a different approach; it is subtly different. B1 and B2 assume that Members of Congress behave in a risk-averse or misinformed way; they do not necessarily hold that they over-rule management.

It is important to differentiate between Theories C3, C4, C5 and D1. C3 claims that management has no power, and simply has to obey Congressional instruction; C4 maintains that AMTRAK does have some discretion, but abuses it, C5 also that a degree of discretion exists, but organisational norms and learning processes are inadequate. All three assume that there is some identification of role and purpose. Theory D1, however, proposes that confusion arises from non-definition of goals and objectives: it is not, in this case, that AMTRAK is necessarily powerless or evil or stupid. It is that they don't know what to do.

An easy trap into which the unwary may fall is to relate but a black-box view of the institutions which represent process (the "magnet") directly to output. In this way, there is great danger in misinterpreting a theory such as Theory C4, and "blaming" management for doing a "bad job" without considering the constraints under which they must operate, and the implicit value frame imposed by both their organisational configuration and relationship to the (and within the) political system.
Effect is often easy to discuss, and an excellent base for facile scapegoating. For real understanding - and the possibility for change - to be on the agenda, we must go beyond effect to cause.

Theory C5 does consider the historic railroad procedures and implied values which it suggests AMTRAK has perpetuated, and so is perhaps more directly linked to the Original Sin value frame theory than the other C theories. However, it does not go beyond the visible perspective to trace the source of implantation of the value mis-program. It certainly has some useful insight into learning processes, but any remedies that might therefrom result would be a case of "necessary" but not "sufficient" change.

C5 discusses a value mis-program and inadequate associated learning processes, as it afflicts one organisation; the inference is that if the organisation could, should it so choose, "learn to learn" in a more relevant way, all might be well. But the organisational structure - both the supposed "corporate" existence of AMTRAK itself, and its institutional links to other bodies, mitigates against change as becomes apparent in Theories D.

Theories D1 and D2 are theories of organisational and authority structure. Responsibility is seen to lie not simply with wilful mismanagement, or alternatively poor management processes, nor with Congressional misbehavior or ignorance per se, but with an institutional structure - both intra (in AMTRAK) and inter-organisational, which symbolises and directs such phenomena.

Theories D, however, beg the question of values. Root cause lies not
simply in the presence of structure. Beyond such knowledge, we must know why such structure is there. To know this, we must ultimately go to the value mis-programming which created the structure in the first place, itself consequent on non-reference to values at AMTRAK's start. This is only discussed in Theory E. It is only by doing this that we can step outside the value frame within which the lower-level theories operate, and see the whole perspective, and the place of the features we observe within it. Thus we go beyond, for example, the D2 observation that centralisation is a bad thing and appreciate that such organisation does not exist in a vacuum, but reflects the particular brand of "national" image unwittingly imputed into the AMTRAK scheme.

Knowledge gained from D1 or D2 may lead to ideas for installing a new structure. However, without reference to values, that creation might be equally at fault. A more efficient structure or process is not enough. Value-critical analysis of process (in which I include "structure" and sub-processes) is required, and a process installed consonant of implementation of targets to meet defined goals reflective of values-to-be-espoused.

Many of Theories B, C and D are convincing in themselves. But danger lies in accepting a partial explanation as a whole one. The "truth" in any one of these theories is less important in itself than how it is perceived, ordered and acted upon. It is perhaps most helpful to regard Theories B, C and D as a system of conditions relating to each other through the value structure in a hierarchy of stimuli and reactions. It is a complex system, because it is not a system without feedback. Once the system is energised (by the Original Sin value frame)
reinforcing consequent processes come into play (elements of Theories B through D). They in turn are related to each other, the one triggering another, and so on which, like an irrepressible energy trapped within the original frame fortifies it. The links between the theories: access to decoding the puzzle, only becomes possible when seen in relation to values. The truth of any one theory can only be established (or disproved) when put in place on the cause-effect chain in relation to the other theories, and when the whole is set against values.

Some limited explanatory power may be derived from study of consequent processes, but real understanding requires a trek back to the Original Sin value frame to make visible the boundaries of the all-encompassing Original Sin value frame "action space." Management distortion, for example, may occur as a result of the impact of the political system, but this latter itself operates in a value frame action space resultant upon the value frame implied by the original conception. Moves towards change based on lower-order consequent processes alone will be largely ineffective. The "critiera" of the 1979 AMTRAK Reorganization Act, for example, supposedly act on B1 and C4 problems, but fail to effect real change because value mis-programming is ignored.

The importance of the Theory E approach is that once the value-program is understood, it is as if in a mathematical proof by induction - we have proved up to n = \infty; it is then not necessary to have the proof of lower-order theories. We have, by definition, found the "whole" truth. But, from this infinite quantity, a vista without horizon is opened. Through it, we can work down lower-order concepts, processes, identities, objects - all manner of eminences grises, to gain understanding of their
existence and plan on their improvement. He have penetrated to the essential encoding; now we may undertake genetic engineering.

In order to gain understanding that will allow the analyst access to the encoding at the heart of the process, and not merely to non-controlling (though likely reinforcing) co-variables, it is necessary to seek out the values associated with output, and the value program commanding the process that produces that output. We must study the effect of the electricity acting through the magnet to create a magnetic field and attract the object. Having done this, desired outputs must be established with respect to values-to-be-espoused, and the necessary process to produce those outputs must be developed so as to be imprinted with a value program which will permit those outputs to be produced.

The clarity in evaluation for planning that becomes possible with this approach is readily evident. Long-distance trains may not be found to be in line with the satisfaction of transportation needs reflected in the values "mobility" and "equality of opportunity in having access to mobility. These values may imply goals which produce outcomes other than the provision of long-distance trains. In value-critically appraising the current system, the latent value "travel" as consumption, heretofore muddled with transportation "mobility" and "equity" values might be discovered, and separately identified.

Under ideal circumstances, having separated out the "travel" item, the value-hierarchy could be descended, formulating goals to create processes capable of delivering outputs more in line with the need. Thus, long-distance trains, while no longer seen as transportation services, might be seen as satisfying a desire for "travel." They could then be
restructured accordingly - perhaps concentrated onto a few particularly scenic routes - and operated as "train cruises" perhaps under the auspices of a body such as the National Parks Service, or as a separately-funded item, reflecting the value to society of travel as consumption. Decision-makers would have to decide how much resources should be allocated, dependent on this value. The value of "travel" would be explicitly identified, and provided for accordingly instead of acting under the pretence that transportation was in question.

Of course, circumstances are by no means ideal; we are not in a vacuum from which a "rational" process to satisfy our fondest desires is to be started. We should be aware of the need for a great deal of sensitivity in the use of a value-critical approach, and use it not only to generate "ideal" outputs and "ideal" processes, but ones which can realistically be achieved with regard to current outputs and processes, themselves value-critically analysed.

If we both recognise and understand why value mis-programming has occurred and how, for example, individuals and their representatives have come to wrongly accept that long-distance trains do provide for transportation needs, we should also realise that overnight conversion from such fundamental beliefs is impossible. Taking this into account, the railbus, for example, might be found to be a desirable (at least interim) measure for low-density rural areas because, although such areas might be still better served by bus, a railbus might initially be more acceptable because it implies some rail service to the area concerned, and satisfies the (mis)understood notion that rail passenger service should reach each location. It is a change which the values imputed into
the current processes might allow: a base for subsequent iterations.

The railbus would attract transportation users, not novelty users, and evaluation of its performance, unclouded by "consumption" benefits, would be on a transportation basis. Such subsequent examination would of itself be more likely to ask the right questions even were later evaluators to (unfortunately) ignore values, because the imputed values of the railbus would already be the transportation values-to-be-espoused and the correct test would now indeed be to establish the extent to which they are being maximised rather than as to whether imputed values should be changed. The value frame action space would have already been transformed so as to allow subsequent moves towards desired outcomes within its bounds.

I take issue with Rein that the "value-critical" approach is an alternative to what he refers to as the positivist "value-decisionistic." Rather, I see the latter as carrying out lower-order functions which have their place where such analysis is appropriate, but risk abuse if put forward in supposed solution of problems which require higher-level approaches. The "positivist" approach can in this way be seen as being under the umbrella of the value-critical. The problem is to make abusers of sub-level approaches realise that the umbrella is there.

It should be stressed that there are many things which can be properly understood at low levels of abstraction, as long as we understand that we are operating within a given framework. It is thus not necessary for a train conductor to ask himself whether his train should exist at all in deciding whether to collect tickets from left to right, or vice-versa. In criminal justice, a judge will tend to pass sentence according
to the dictates of the law (subject to any discretion which the law may allow him), and will not ask himself at every particular trial whether the law in question is a good law. If it is indeed a good law, then there is no need to go further. If over time, however, there is a growing feeling in society that sentencing is unjust, it may be necessary for law-makers to go beyond the sentencing pattern of judges and investigate — and if necessary change — the laws upon which they are based. A value-frame functions as a regulator save that it is far more elusive a concept than a law. If it is a good value frame, then many routine functions (e.g., marketing, train scheduling) may be properly organised, evaluated, altered underneath its umbrella and without explicit reference to it, maybe without perception of its very existence. The problem is to know when the value frame is a good one, and to make this judgement it is necessary to be aware that that frame exists. Which implies that perception of its existence is important on a continuous basis, if only to validate the further execution of routine processes without further reference to it.

In a story as complex as the route system of AMTRAK, it is essential to be aware that a value frame exists, to identify it, and examine how, through control of process, it affects output. Discussion centering around outputs, or around process alone, is not enough. Outputs and processes must be examined in the light of the values which program.

This work has two principal conclusions. The one is that ultimately, AMTRAK's route structure is attributable to a failure, at AMTRAK's conception, to start with values, and proceed down the value-hierarchy from there. Instead, planning was started well up the decision tree,
and an imputed value frame was introduced not reflective of real transportation needs. That frame has programmed AMTRAK ever since, and has been reinforced by organisational, political and learning processes.

The second conclusion concerns the analyst. It is that in complex situations such as this, the only way to gain real understanding is with reference to imputed values and resultant goals, processes and outputs which may (in a normative sense) be compared against the values to be espoused, and the goals, processes and outputs which they suggest. Despite this, the analyst is drawn to only low levels of abstraction, not only because he feels less exposed and can produce a more "concrete" product, but also because he doesn't know any better. As a result, few analyses are of any significant value in paving the way for real change.

There is a need for greater awareness among decision-makers and analysts alike of the need to plan in relation to values or - to put it in a nutshell - to plan for what society really wants. This involves defining what society wants, and applying a value-critical approach is designing for implementation.

But, for this to happen, there is a need for a change in attitudes amongst decision-makers and analysts. And the myriad political and learning processes mitigate against it. Value mis-programmed norms of the AMTRAK scheme have become so deeply entrenched that the barriers to go through in attempting real change become almost insurmountable. But, if the AMTRAK norms are entrenched, so also are those of the decision-makers and analysts.

It would be rather glib and pointless to suggest that once you have
identified the misconceptions afflicting your value frame, you should simply choose a new one. I somehow doubt that if you were to try to buy a new value frame in Woolworth's, they would immediately be able to take one off the shelf for you. Values are abstract phenomena, but they do only have meaning with respect to goals, processes and outputs. On the other hand, the material we have seen in Theories A - D is important — therein lie the vital building-blocks for both understanding and resolution, but only if seen in the right value-critical context.

There are many barriers to a value-critical form of thinking; it is more abstract but because, as I see it, it is set in the reality of goals, processes and outputs, it is not impossible. We must work towards a greater awareness of its possibilities, and learn to make it a part of our evaluative norms. How this is to be done, I shall not desist from admitting, in a whole other story.

I end with a question: how can we achieve change? This work was not intended to prescribe any particular path for rail passenger service, but to help come to an understanding of what actually accounts for the patterns we observe, and of how we understand them. The path ahead is complicated, but at least if the right questions are asked, there is a fighting chance of finding our way through the maze to the right answers.
APPENDIX A

Historical developments in the nature of the inherent advantage of rail passenger service; a theoretical approach.
Theory Al claims that since the more complete a network, the greater its overall efficiency, the more a network inter-connects, the greater the number of potential journeys that can be made. This assertion is tested below using a gravity model approach. No precise applicability is here claimed for the gravity model. It is, nonetheless, a simple and classical tool which serves well to illustrate the argument which follows.

The gravity model divides forces into two groups: those which cause generation and attraction, and those which act as friction to impede it. In the case of interaction between cities, the former forces can be approximated to the size of the cities in question as measured by population. Friction can be equated to a number of factors such as distance, time, cost and intervening opportunity (i.e. there being other potentially attractive centers between the cities in question). If distance is used as variable, a possible specification of the gravity model is:

\[ I_{ij} = \frac{k p_i p_j}{d^{x_{ij}}} \]

where \( I_{ij} \) is the interaction between two cities, \( i \) and \( j \);

\( p_i p_j \) is the product of the populations of \( i \) and \( j \);

\( d_{ij} \) is the distance between \( i \) and \( j \);

\( x \) is an exponent relating to the frictional effects of distance; and,

\( k \) is an empirically-derived constant.

If inter-city rail is the only mode to exist, then demand for services between two cities will be a function of their populations and inversely of the distance between them to the power of \( x \), a coefficient related to level of service characteristics.
If cities are pictured as being organised in some sort of nested hierarchy system, and according to a "traffic" principle (i.e., a system of organisation of cities which facilitates transportation between them; Christaller's (1933) k = 4 design is an example of this), as a high-level city is left, smaller cities are likely to be included on the route of the railway line at intermediate distances to the next high-level city. Interaction with the nearest small city will be greater than with one of similar size further away (the difference will be still more if the third city is yet smaller in size); in sum, there will be a distance-decay effect. Interaction will suddenly rise, however, for the next major center because of its size, attenuated though the effect may be by the distance. Interaction between New York and Chicago might, therefore, be greater than that between New York and any of the intervening cities because of the importance of Chicago. The same may be true between Chicago and Los Angeles or San Francisco.

Under such a scenario, two systems of rail route might be developed, according to the two central concepts of the gravity model: the one would be a regional system of routes emanating mainly from the major centers, routes which only reach out as far as demand will permit service to be supported; the distance-decay effect restricts service to operation within the region. The other system would, however, be oriented to the very large centers, no matter how far apart, which can sustain demand for service because of their great importance in the urban system. Trains on this inter-regional system would also pass through intervening smaller centers on the way, the demand generated by the major points allowing for a good frequency of operation for the servicing
of these smaller cities as well. In some cases, then, the inter-regional system would also perform regional functions.

The inter-regional system would act to canalise major flows, and would be organically linked to, and fed by, the regional system (where the two were not one and the same anyway). With rail being the only mode, it will clearly be advantageous to connect as many points as possible, thus maximising potential interaction. Connections will therefore be arranged at the intersection of the inter-regional "main streets," and the route system will take the form of an inter-connected network.

At this stage, let us drop the assumption that rail is the only mode available for inter-city passenger transportation. Let us suppose that inter-regional airline service is started between major points. The Janelle (1969) model can be used to illustrate what the effect on the urban system might be, and the implications for rail passenger service can then be considered. According to the Janelle model, demand for accessibility leads through development of technology to transportation innovations. These stimulate reductions in travel time and cost and lead to what he refers to as "time-space convergence" or, to put it another way, the distance measured in travel time between the places served by the innovation decreases, and they therefore seem to become closer to each other.

This leads to spatial adaptation, involving centralisation and specialisation in the places brought closer together. Interaction between those places increases, leading to new demands for accessibility, and more transportation innovation, and so on.

Threshold minimum distances for efficient operation will tend to be
greater for the airline than for the railway. Time-space convergence is therefore likely to have rather greater impact above this threshold than below it (see DIAG 1). Demand for travel is thus likely to receive a general stimulus between those points receiving air service that are greater than the air service efficiency threshold apart.

Increased overall demand for interaction might have some positive impact on the railway as well as on the airline through an "income" effect. But, the "substitution" effect from rail to air is likely to outweigh the "income" effect between above-threshold points served by the airline, though this will depend on time versus cost sensitivity of the travellers involved.

If we re-examine the gravity model once more, from the perspective of the train, ie. we are interested in interaction between two points by

*In fact this is more likely to be a zone than a point because each curve as shown is an aggregation of the scatter of curves as determined by elasticities of demand of the individual users. Break-even for a time-conscious businessman will therefore be at an earlier point, and for a low-income leisure traveller at a higher point, than indicated.
train, these effects can be clearly seen. First of all, the "masses" of the cities involved will be increased (the increased interaction stimulated by the commencement of airline service leads to urban concentration). But, secondly, the existence of airline service will increase the relative friction of distance effect on the railway as against the airline. It is likely that the value of the exponent x will increase for interaction between points served by the new airline service. But, some increased value of x will also affect interaction between either of the major centers and smaller intermediate points. Because major points, reachable by airline service, are now so much "nearer" they will in effect present an intervening opportunity, even though they are at greater absolute distance than the intermediate points.

One effect that will be to the benefit of the railroads will be increased demand for interaction between intermediate points and distant major centers. But, whereas before airline service existed, interaction between such points would be by the most direct available rail route, it may now be substituted by a train ride to the nearest major center, and onward continuation of journey to destination by air. We see here a force towards regional polarisation of rail passenger services.

But, this is only part of the story. One of the effects of the increased interaction between the major centers will be congestion there, and increased demand for space. One of the side effects of this will be decentralisation; functions will spill out into the immediate suburban areas, but there will also be a "trickling-down" effect into the region
as a whole: a regional multiplier effect will operate. This will lead to increased demand for intra-regional interaction, at distances below the threshold efficient maximum for airline operation. The railway will be in a better position relative to the airline to provide this service, and should respond by adopting a firmer regional orientation: feeding major centers above minimum airline efficiency threshold distances rather than connecting them, and connecting smaller centers within regions, that do not have access to airline service.

This demands certain basic changes in service characteristics. Former routings will become redundant because the base-line demand upon which they were designated will have evaporated. End-point traffic is lost, and intermediate points which lack the attractive power of the larger centers to offset the effects of distance-decay, and which were served initially as a by-product of end-point trunking, can no longer retain the previous level of service. If frequency is reduced, but the route unchanged, then the benefits of any regional-type service that was provided as a consequence of inter-regional service (because the frequency of the long-distance service was adequate to generate short-distance demand) will be lost.

To adjust to rail's changed inherent advantage, it would be necessary to dissect and reconfigure routes, timetabling the train to best serve those intra-regional sectors over which their greatest potential demand now lies.

The reasoning used above can also be applied in consideration of the impact of the automobile. Because of its continuous availability and flexibility and the avoidance of time lost in reaching an airport or
train station, the automobile will have an especially profound impact over shorter distances.

This constrains rail to competing over mid-range distances - perhaps 80 - 300 miles - in high-density markets where it can be a viable alternative to air and automobile if it can emulate or improve on those characteristics which make these latter modes attractive. This implies speed, availability and reliability. Fast, frequent service can compete with air over short distances; depending on the location of airports and rail stations relative to origin and ultimate destination, total journey time by rail may even be less than by air under such circumstances. Speed and frequency can also offset access-to-terminal times in competing with the automobile.

It is no longer necessary for the rail network to maintain an interconnected structure across the country. In response to the onslaught of other modes, rail's rational response is to reconfigure into a series of non-connected high-density regional systems within each of which it competes over distance ranges where its service characteristics now give it an advantage over air and automobile travel.
APPENDIX B

The AMTRAK Energy Stakes – a Study of Studies.
Appendix B reviews the studies carried out on the subject of AMTRAK energy efficiency. Such work as has been done includes simple modal comparisons in the aggregate, and more in-depth studies by the Congressional Budget Office, SRI International and Northeastern University Professor, Frank Mulvey.

TABLE 1 presents a summary of the results of the above-mentioned work, omitting that of SRI which made comparisons in a different way from the other studies.

To ease comparison, TABLE 2 is an indexed version of TABLE 1, with rail set at 100 throughout. Where there is more than one category for rail, each one is put at 100 in different columns. Where results were given in British Thermal Units per Passenger Mile (BTU/PM) in TABLE 1, they are presented as 1/BTU/PM in TABLE 2 to make them comparable to the other results which are expressed in terms of Passenger Miles per Gallon (PM/g). A quick perusal is adequate to show that there are serious disagreements between studies.

There is unfortunately little basis for scrutinising the results of Hirst (1973), GAO (1978b) or Hilton (1980). Both GAO and Hilton simply state the results as fact. We are not told the source of the GAO results; those of Hilton come from the Senate Report to Accompany S.712, AMTRAK Improvement Act of 1979. All three fail to contrast rail to other modes under different market conditions; it is highly questionable whether aggregations of the type shown here really mean anything at all when, as will become apparent later, there is a great deal of variance in performance characteristics, and the comparative advantage of rail relative to other modes is by no means constant.
<table>
<thead>
<tr>
<th>STUDY</th>
<th>CONGRESSIONAL</th>
<th>BUDGET OFFICE</th>
<th>CORRIDORS</th>
<th>AMTRAK (citing Senate report)</th>
<th>BOEING</th>
<th>GAO</th>
<th>HIRST</th>
<th>MULVEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITS</td>
<td>PM/g PM/g PM/g PM/g</td>
<td>% LOAD FACTOR</td>
<td>PM/g BTU/PM PM at 100% LOAD</td>
<td>PM/g BTU/PM PM</td>
<td>PM/g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAIL 1</td>
<td>285 242 214 157</td>
<td>45.0 44.4 3123</td>
<td>1403 FACTUR</td>
<td>14-64 56 2900</td>
<td>97-100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAIL 2</td>
<td>215 182 161 118</td>
<td>44.0 129.1 1075</td>
<td>473</td>
<td>90-192 116 1600</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUTO</td>
<td>60 51 45 33</td>
<td>46.3 44.0 237</td>
<td>1314</td>
<td>25-41 40 3400</td>
<td>30-38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUS</td>
<td>215 182 161 118</td>
<td>44.0 129.1 1075</td>
<td>473</td>
<td>90-192 116 1600</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR 1</td>
<td>40 34 30 22</td>
<td>58.6 26.7 5052</td>
<td>2960</td>
<td>18-28 20 8400</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AIR 2</td>
<td>60 51 45 33</td>
<td>---- ---- ----</td>
<td>----</td>
<td>---- ---- ----</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* except auto which varies according to trip distance.

<table>
<thead>
<tr>
<th>STUDY</th>
<th>CONGRESSIONAL</th>
<th>BUDGET OFFICE</th>
<th>CORRIDORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITS</td>
<td>LOAD FACTOR % BTU/PM</td>
<td>BTU/PM</td>
<td>LOAD FACTOR % BTU/PM</td>
</tr>
<tr>
<td>RAIL 1</td>
<td>36.9 2762 3115 47.2</td>
<td>3680 5248</td>
<td>110</td>
</tr>
<tr>
<td>RAIL 2</td>
<td>---- ---- ---- ----</td>
<td>---- ---- ----</td>
<td>----</td>
</tr>
<tr>
<td>AUTO</td>
<td>44.0 3157 4092 44.0</td>
<td>3157 4622</td>
<td>33</td>
</tr>
<tr>
<td>BUS</td>
<td>47.2 981 1135 47.2</td>
<td>981 1249</td>
<td>129</td>
</tr>
<tr>
<td>AIR 1</td>
<td>55.8 839 8259 55.8</td>
<td>6237 6577</td>
<td>24</td>
</tr>
<tr>
<td>AIR 2</td>
<td>---- ---- ---- ----</td>
<td>---- ---- ----</td>
<td>----</td>
</tr>
</tbody>
</table>

**Table 3: Comparison of Energy Efficiency Estimates by Mode.**

Details of load factor assumptions included where available other than for the Mulvey study for which they are explained in the text.

<table>
<thead>
<tr>
<th>AMTRAK</th>
<th>MULVEY</th>
<th>AMTRAK</th>
<th>MULVEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAIL 1</td>
<td>Amfleet Short-Distance</td>
<td>AIR 1 DCO Short-Distance</td>
<td></td>
</tr>
<tr>
<td>RAIL 2</td>
<td>Conventional Long-Distance</td>
<td>AIR 2 747 Long-Distance</td>
<td></td>
</tr>
</tbody>
</table>
## Table 4: Comparison of Energy Efficiency Estimates by Mode, Indexed.

<table>
<thead>
<tr>
<th>Study</th>
<th>AMTRAK</th>
<th>MULVEY</th>
<th>CONGRESSIONAL BUDGET OFFICE</th>
<th>BOEING</th>
<th>GAO</th>
<th>HIRST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units (Indexed)</td>
<td>PM/g PM/g PM/g PM/g PM/g PM/g PM/g PM/g</td>
<td>PM/g PM/g PM/g PM/g PM/g PM/g PM/g PM/g</td>
<td>PM/g PM/g PM/g PM/g PM/g PM/g PM/g PM/g</td>
<td>PM/g PM/g PM/g PM/g PM/g PM/g PM/g PM/g</td>
<td>PM/g PM/g PM/g PM/g PM/g PM/g PM/g PM/g</td>
<td></td>
</tr>
<tr>
<td>Load Factor (%)</td>
<td>100 85 75 55 100 85 75 55</td>
<td>100 100 100 100 246 244 264 245</td>
<td>100 100 100 100</td>
<td>100 100 100</td>
<td>1/100% at 100% LOAD FACTOR</td>
<td>1/100% at 100% LOAD FACTOR</td>
</tr>
<tr>
<td>Rail 1</td>
<td>100 100 100 100</td>
<td>41 41 38 41</td>
<td>100 100 100 100</td>
<td>--- --- --- ---</td>
<td>--- --- --- ---</td>
<td>--- --- --- ---</td>
</tr>
<tr>
<td>Rail 2</td>
<td>21 21 21 21</td>
<td>21 21 21 21</td>
<td>52 52 56 52</td>
<td>99 110 107</td>
<td>39-293 71 85</td>
<td>39-293 71 85</td>
</tr>
<tr>
<td>Auto</td>
<td>75 75 75 75</td>
<td>185 184 199 184</td>
<td>291 291 297</td>
<td>141-1371 207 181</td>
<td>141-1371 207 181</td>
<td>141-1371 207 181</td>
</tr>
<tr>
<td>Bus</td>
<td>14 14 14 14</td>
<td>14 14 14 14</td>
<td>34 34 37 34</td>
<td>60 62 47</td>
<td>28-200 36 31</td>
<td>28-200 36 31</td>
</tr>
<tr>
<td>Air 1</td>
<td>21 21 21 21</td>
<td>21 21 21 21</td>
<td>52 52 56 52</td>
<td>--- --- --- ---</td>
<td>--- --- --- ---</td>
<td>--- --- --- ---</td>
</tr>
<tr>
<td>Air 2</td>
<td>21 21 21 21</td>
<td>21 21 21 21</td>
<td>52 52 56 52</td>
<td>--- --- --- ---</td>
<td>--- --- --- ---</td>
<td>--- --- --- ---</td>
</tr>
</tbody>
</table>
Hilton must have realised this, for 7 out of an astonishingly brief 27 lines given over to the treatment of energy implications are devoted to the following quotation which he mis-attributes to AMTRAK, (a careless error, characteristic of the poor level of scholarship of the work as a whole), but which was in fact submitted by the Federal Railroad Administration to Hearings before the House Appropriations Transportation sub-committee (US Congress, 1979a):

> With existing conditions, rail is far from a favorable comparison with intercity bus from the standpoint of energy efficiency. While new lightweight equipment, and emphasis on short-haul corridor operations, and greater use of electric trains in the Northeast Corridor will surely increase AMTRAK's overall energy efficiency, equality with bus will seldom be achieved, if ever, on long distance routes, barring a technological breakthrough in railroading.

Despite his obvious awareness of energy efficiency differentials, Hilton fails to consider corridor operations separately from long-distance services, and reaches the meaningless general conclusion that:

> The passenger train is a large, heavy vehicle, which requires continued acceleration and deceleration and therefore heavy energy inputs. As TABLE 15 {summarised here in TABLES 3 & 4} demonstrates, inter-city passenger trains require just over half the fuel per passenger mile of aircraft, slightly more than automobiles, and nearly triple that of buses.

If we move now to the report of Boeing (1975) which, though providing a range of results is possibly less generous with AMTRAK than with other modes. In a comment on the data, Mulvey (1978) points out that Boeing had assumed an average rail distance between cities of 1135 miles and "some city-pairs in the Boeing study are so circuitous that it is unlikely anyone would ever travel between them by train."

If Boeing is hard on the iron horse, AMTRAK (cited in Mulvey (1978) TABLE 2.7, p.68) errs on the gentle side. AMTRAK does not take account
of route circuity - the fact that the actual distance travelled by rail is greater than the distance "as the crow flies." According to the American Trucking Association (1974), perhaps not the most enthusiastic exponents of rail service, AMTRAK circuity lies in the range of 20 – 50 percent on top of "crow flies" distance. There will be some circuity also attributable to the other modes, though due to their more complete and direct networks, it will be significantly less.

Another factor which AMTRAK neglects is that trains on grades need more energy than on the flat. The load factors quoted are also all unreasonably high - not that this makes much difference when the equally unlikely assumption is that load factor is constant amongst all modes.

If the cynical reader has already noted how well the results obtained fit the goals of the respective organisations, he had better be warned that there is worse to come. An infamous case in point is a study carried out by the Congressional Budget Office in 1979 entitled: The Current and Future Savings of Energy Attributable to AMTRAK.

The report estimates savings in fuel attributable to three possible rail systems: the current one; the reduced system proposed by the Secretary of Transportation (DOT, 1979); and one including only the Northeast Corridor. This is unfortunate because neither of the first two of these systems possess uniform characteristics, and the aggregated results may cover up significant variance in performance within each system.

The estimate of propulsion energy for Northeast Corridor rail service - 1019 BTU/seat mile - was based on "computer simulation of Metroliner
equipment, assuming current operating conditions along the Washington -
New York City segment of the track." The Northeast Corridor Improvement
Project had estimated that Metroliners use between 982 and 1615 BTU/seat mile.

The report does recognise that "the make-up of trains outside the
Northeast Corridor is probably far more variable than within the
Corridor because of the greater variation in the amount of patronage
and in trip distance that are likely outside the corridor." It
gives the following example in illustration:

A long-distance train with four coach cars, four sleeper cars,
one dining car, one baggage car, and one observation car has
about the same passenger carrying capacity as a train with
five coach cars. Assuming that the energy required per car is
roughly the same on either train, the long-distance train
in this illustration requires more than twice the energy per
seat-mile as a train with five coach cars.

Given this realisation, it is amazing that far from attempting to
analyse the different situations, the study makes a sweeping aggregation.
To estimate energy requirements outside the Northeast Corridor, it
subtracts energy attributable to the Northeast Corridor service from an
estimate of the average use of energy by trains throughout AMTRAK. It
is worth noting that the Northeast Corridor estimate is rather generous
in comparison to the range found by the Northeast Corridor Improvement
Project. The consequence of subtracting this possibly understated
result from the total is to overstate fuel consumption outside the
Northeast Corridor.

The study thus produces two sets of data: "Northeast Corridor," and
"Non-Northeast Corridor." Auto and bus propulsion energy is held to
be constant in both cases, but air is found to use more energy within
the Northeast Corridor than outside it, thus further polarising the results. This happens because it is assumed that smaller aircraft are used in a more energy-intensive way, on the relatively short distances of the Northeast Corridor (take-off and landing energy has to be spread over less mileage) than outside it. We, in essence, once more have a case of aggregation masking a considerable variance in performance. There are several short-distance air markets outside the Northeast Corridor for which energy consumption is similar to that within it, and where the relative performance of rail is rather better than might be assumed from the study data. The best example - the Los Angeles - San Diego corridor - will be examined later.

Adjustment is made for circuity (actual distance minus Great Circle distance), and favors Northeast Corridor rail once more because, while routing is relatively direct within the Corridor (circuity = 1.100), it is relatively indirect outside it (circuity = 1.405). Once more, in taking an aggregate for non-Northeast Corridor routings, significant variance is concealed.

Of particular interest is the finding that within the Northeast Corridor rail is about 14 percent more efficient than auto, whilst outside of it, it is about 14 percent less efficient than auto. There is an assumption here of a 2.2 person per car occupancy. The study does, however, recognise that "single person parties make up about 40 to 60 percent of travel on air, bus, or rail while less than 20 percent of auto travel is by single-person parties." Transfer (of some passengers) to auto resulting from discontinuance of AMTRAK service might thus lead to a lower car occupancy amongst the transferees
than is suggested by the report. In comparing AMTRAK to the averages for other modes, the assumption is made that AMTRAK passengers come from the same statistical populations as travellers on the other modes, an assumption which is partially invalidated by the very fact that they are using AMTRAK in the first place.

The analysis does not gauge the true energy opportunity costs of eliminating AMTRAK service because it simply compares rail to averages for other modes, rather than taking the necessary marginal approach of examining how much extra energy would be consumed in practice were AMTRAK services to cease to exist. This is unfortunately a flaw which afflicts many studies of this type, a misdemeanor against the most basic of economic principles.

In calculating "program energy" - that is, the net energy gained or lost per passenger mile attracted to rail - reflection was made of the mode passengers would use were AMTRAK not to be available, as deduced from the AMTRAK Passenger Assessment Survey of 1979 (NRPC, 1979), a summary of which is contained in TABLE 5 below:

<table>
<thead>
<tr>
<th>Mode that would be used in the absence of rail</th>
<th>Northeast Corridor %</th>
<th>Non-Northeast Corridor %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto</td>
<td>48.0</td>
<td>45.8</td>
</tr>
<tr>
<td>Bus</td>
<td>32.2</td>
<td>25.0</td>
</tr>
<tr>
<td>Air</td>
<td>16.1</td>
<td>23.6</td>
</tr>
<tr>
<td>No Trip</td>
<td>3.7</td>
<td>5.6</td>
</tr>
</tbody>
</table>

It is worth noting, in passing, the diversion modal splits found in a July, 1977 AMTRAK study of the Floridian Chicago - Florida service (cited in Mulvey (1978) TABLE 2.2, p.58), and in the case of the
Chicago - Milwaukee corridor as found in a Wisconsin Department of Transportation (1975) survey carried out in August, 1974 (TABLE 6)*.

<table>
<thead>
<tr>
<th>Mode that would be used in the absence of rail</th>
<th>Floridian %</th>
<th>Chicago - Milwaukee %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto</td>
<td>19</td>
<td>74</td>
</tr>
<tr>
<td>Bus</td>
<td>26</td>
<td>11</td>
</tr>
<tr>
<td>Air</td>
<td>41</td>
<td>15</td>
</tr>
<tr>
<td>No trip</td>
<td>7</td>
<td>-</td>
</tr>
</tbody>
</table>

Both these services would fall within the "Non-Northeast Corridor" category of the CBO study, although the diversion modal splits of neither in any way corresponds to the aggregate figures employed by the CBO.

Based on the diversion modal split used by the CBO, and assuming general population diversion load factors, the end result according to the study, is that rail saves 544 BTU/PM in the Northeast Corridor, but wastes 1267 BTU/PM outside it. "That is," the study concludes:

> without AMTRAK service in the Northeast Corridor, each current rail user would use 17 percent more energy, on average, per passenger mile than at present. But outside the corridor, each current rail user would need 24 percent less energy, on average, if rail service were not provided.

If the statistics are reworked with an assumption if an auto load factor of 1.5, it is worth noting that rail savings in the Northeast Corridor increase to 1461 BTU/PM, and losses from use of rail outside the Corridor decrease to 279 BTU/PM. I am not claiming here that there is actually any more hard evidence to show that a load factor of 1.5 would result, rather than one of 2.2. But this little demonstration does show that minor variations in assumptions can have major impacts upon results.

*Also note "Empire Builder" results TABLE 2, p.
A further point is that the results do not adjust for length of trip; the make-up of diversion factors to other modes will likely vary with trip lengths, and this should be taken into account. Equally omitted is allowance for differential performance of rail over long and short distances outside the Northeast Corridor.

"Potential savings or losses of energy" are considered next. In doing this, "across the board" adjustments are made to results developed earlier. Thus, "technological efficiency" of rail is assumed to increase 20 percent by the mid-1980s, and load factor is assumed to increase to 55 percent, but current configurations and operating procedures are assumed.

Thus, when adjustments are made for other modes, it is found that AMTRAK operations in the Northeast Corridor could result in 1162 BTU/PM savings while operation outside the Corridor is projected to lose 537 BTU/PM. "Under both current operating conditions and assumed future improvements," the study declares,

the Northeast Corridor rail service results in energy savings while the current AMTRAK network wastes energy. The assumed future improvements in rail energy efficiency could be enough to change the rail system proposed by DOT from an energy loser to a small energy saver. If only the Northeast Corridor was saved, the energy savings would be more substantial.

This report is unfortunate because of its narrowness, its sweeping and brash assumptions, and lack of foresight. In the conclusion it does state that:

Other corridor-type services offered by AMTRAK may resemble the Northeast Corridor in their energy use, and no attempt has been made to isolate them. The fact that rail service in the Northeast Corridor is electrified drives the conclusions about petroleum savings. While these conclusions may apply to other electrified corridor service, they would not be applicable to nonelectrified ones.
It is surely of the utmost importance to look at the full range of alternatives in a study of this type, an effort which would require a rather higher degree of diasaggregation and sophistication than is shown here. It is quite possible that some non-Northeast Corridor service performs considerably better than might be suggested by the aggregated results presented here; it is also conceivable that others might do better were operating conditions to be changed. A case in point is the Los Angeles - San Diego corridor, examined in a 1980 study for the California Department of Transportation by SRI International (Henderson and Ellis, 1980).

During FY 1979, average trip length on this corridor was 80.7 miles over the 128 mile route, and a load factor of 43 percent was estimated for the six daily round trip services. Direct energy was estimated at 1460 BTU/PM for diesel fuel; an extra 20 percent was then added to allow for fuel consumed in non-revenue service, to bring this to 1750 BU/PM.

While the CBO study had used as basis simulation results of the Northeast Corridor Improvement Project, SRI conducted field observations on the operation of nine San Diegan trains, to estimate an average fuel efficiency of 248 gross ton miles per gallon which was then transformed into a BTU/PM estimate by taking account of actual train weights and passenger miles travelled. While the SRI study increases its estimates to allow for non-revenue service fuel consumption, the CBO report does not. The nearest match, for purposes of comparison, would thus seem to be between the SRI direct energy estimate excluding non-revenue service fuel consumption and the CBO "Operating Energy" results. SRI's 1460 BTU/PM is clearly significantly less than either
the CBO estimate of 2762 BTU/PM for the Northeast Corridor, or 3680 BTU/PM outside it. However, even using the SRI result of 1750 BTU/PM (which includes the 20 percent non-revenue allowance), the ranking scores remain the same.

Comparison with the CBO results using this latter SRI estimate is provided in TABLE 7. For purposes of comparison, results have been interpolated to reflect the load factors considered in both documents. Similarly, SRI data has been adjusted to reflect the CBO 18 miles per gallon auto fuel consumption as well as the 12.5 miles per gallon consumption of the SRI study.

On the SRI Direct Energy basis, rail is seen to outperform auto at all respective load factors considered, and at both auto fuel consumption levels. If the SRI assumed train load factor of 43.4 percent is taken, the direct energy shown for rail represents 71 passenger miles per gallon. CBO Operating Energy statistics for the Northeast Corridor indicate a much narrower difference between auto and rail, with auto outperforming rail at the 3.3 passenger per auto level. Outside the Northeast Corridor, rail fares very poorly against auto, outperforming the latter at only the 1 and 1.5 passenger per auto load factors (with rail load factor at 47.2 percent).

Indirect energy allocated in the reports has not so far been taken into account because radically different methods were used for its derivation. CBO included an allowance for "Vehicle Manufacturing Energy," while SRI allowed for indirect energy in the widest sense to include energy consumed in associated goods and services required for rail passenger service and for auto operation, using techniques developed at the
<table>
<thead>
<tr>
<th>MODE</th>
<th>AUTO</th>
<th>TRAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOAD FACTOR (# of pass., auto, %, train)</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>2.0</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>3.3</td>
<td>36.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>43.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>47.2</td>
</tr>
<tr>
<td>SRI DIRECT ENERGY (12.5 m/g auto assumption)</td>
<td>(9900)</td>
<td>(6600)</td>
</tr>
<tr>
<td></td>
<td>(5000)</td>
<td>(4545)</td>
</tr>
<tr>
<td></td>
<td>(3000)</td>
<td>(2058)</td>
</tr>
<tr>
<td></td>
<td>(1750)</td>
<td>(1609)</td>
</tr>
<tr>
<td>(18 m/g auto assumption)</td>
<td>6875</td>
<td>4583</td>
</tr>
<tr>
<td></td>
<td>3472</td>
<td>3156</td>
</tr>
<tr>
<td></td>
<td>2083</td>
<td>2058</td>
</tr>
<tr>
<td></td>
<td>1750</td>
<td>1609</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.3</td>
</tr>
<tr>
<td>CBO Operating Energy (Northeast Corridor)</td>
<td>6945</td>
<td>4630</td>
</tr>
<tr>
<td></td>
<td>3473</td>
<td>3157</td>
</tr>
<tr>
<td></td>
<td>2105</td>
<td>2762</td>
</tr>
<tr>
<td></td>
<td>2348</td>
<td>2159</td>
</tr>
<tr>
<td>(Non-Northeast Corridor)</td>
<td>6945</td>
<td>4630</td>
</tr>
<tr>
<td></td>
<td>3473</td>
<td>3157</td>
</tr>
<tr>
<td></td>
<td>2105</td>
<td>4707</td>
</tr>
<tr>
<td></td>
<td>4002</td>
<td>3680</td>
</tr>
<tr>
<td>SRI INDIRECT ENERGY</td>
<td>6200</td>
<td>4100</td>
</tr>
<tr>
<td></td>
<td>3100</td>
<td>2818</td>
</tr>
<tr>
<td></td>
<td>1900</td>
<td>7080</td>
</tr>
<tr>
<td></td>
<td>6020</td>
<td>5535</td>
</tr>
<tr>
<td>CBO VEHICLE MANUFACTURING ENERGY (Northeast Corridor)</td>
<td>2057</td>
<td>1372</td>
</tr>
<tr>
<td></td>
<td>1028</td>
<td>935</td>
</tr>
<tr>
<td></td>
<td>623</td>
<td>353</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>276</td>
</tr>
<tr>
<td>(Non-Northeast Corridor)</td>
<td>3223</td>
<td>2149</td>
</tr>
<tr>
<td></td>
<td>1611</td>
<td>1465</td>
</tr>
<tr>
<td></td>
<td>976</td>
<td>2005</td>
</tr>
<tr>
<td></td>
<td>1705</td>
<td>1568</td>
</tr>
<tr>
<td>SRI TOTALS (12.5 m/g auto assumption)</td>
<td>16100</td>
<td>10700</td>
</tr>
<tr>
<td></td>
<td>8100</td>
<td>7364</td>
</tr>
<tr>
<td></td>
<td>4900</td>
<td>9139</td>
</tr>
<tr>
<td></td>
<td>7770</td>
<td>7144</td>
</tr>
<tr>
<td>(18 m/g auto assumption)</td>
<td>13075</td>
<td>8683</td>
</tr>
<tr>
<td></td>
<td>6572</td>
<td>5975</td>
</tr>
<tr>
<td></td>
<td>3983</td>
<td>9139</td>
</tr>
<tr>
<td></td>
<td>7770</td>
<td>7144</td>
</tr>
<tr>
<td>CBO TOTALS (Northeast Corridor)</td>
<td>9002</td>
<td>6002</td>
</tr>
<tr>
<td></td>
<td>4501</td>
<td>4092</td>
</tr>
<tr>
<td></td>
<td>2728</td>
<td>3115</td>
</tr>
<tr>
<td></td>
<td>2648</td>
<td>2435</td>
</tr>
<tr>
<td>(Non-Northeast Corridor)</td>
<td>10168</td>
<td>6779</td>
</tr>
<tr>
<td></td>
<td>5084</td>
<td>4622</td>
</tr>
<tr>
<td></td>
<td>3081</td>
<td>6713</td>
</tr>
<tr>
<td></td>
<td>5708</td>
<td>5248</td>
</tr>
</tbody>
</table>

**BTU/PM**

**Table 7: Comparison of CBO and SRI Results.**

Circled numbers indicate actual results as given in the CBO and SRI studies. All other figures are interpolations made by the author for purposes of comparison.
University of Illinois (Bullard et al., 1976). As this involves allocating energy according to financial cost, this tends to overestimate rail requirements because, for example, energy will be allocated in respect of salaries paid to AMTRAK employees but, because the auto driver receives no money remuneration, a similar allowance is not made for him.

The effect of the different methodologies is to improve the relative performance of rail in the final result of the CBO study, but to do the reverse in the case of SRI. Rail then appears to do relatively badly against auto in the final analysis in both the CBO non-Northeast Corridor and SRI study of the Los Angeles - San Diego route, and relatively well in the case of the CBO Northeast Corridor results.

It is clearly up to the reader to decide whether the relevant comparisons should include the indirect energy estimate here, but there does seem to be little doubt that these are more unreliable (but not for this reason insignificant) than those for direct consumption.

An earlier SRI study (Henderson et al., 1979), estimated all AMTRAK performance for 1975, and came out with a result of 2300 BTU/seat mile, and 4200 BTU/PM. The study then broke these figures down according to equipment types, choosing three examples for illustration. The first example consisted of old equipment on long-distance service with 8 coaches, 2 sleepers, 1 bedroom car, 2 baggage cars, a diner and a lounge car. Assuming the 1975 system load factor of 54 percent, the result came out at 2500 BTU/PM. At the CBO 47.2 percent load factor, however, this becomes 2860 BTU/PM. The second example looks at new long-distance equipment with 7 bi-level coaches, 3 sleepers, 2 baggage cars and a
diner. At 54 percent load factor, 1500 BTU/PM was estimated in result; at 47.2 percent this becomes 1716 BTU/PM. Finally, new short-distance equipment with 5 Amcoaches and an Amcafe were examined and found to use 1100 BTU/PM at 54 percent load factor, 1610 BTU/PM at the CBO Northeast Corridor estimated load factor of 36.9 percent. For more direct comparison, the results are listed below in terms of seat-miles (TABLE 8).

<table>
<thead>
<tr>
<th></th>
<th>BTU/seat-mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-distance (old equipment)</td>
<td>1350</td>
</tr>
<tr>
<td>(new equipment)</td>
<td>810</td>
</tr>
<tr>
<td>Short-distance (new equipment)</td>
<td>594</td>
</tr>
</tbody>
</table>

The report proceeds to detail the results for five particular routes, although they are not terribly helpfully chosen in terms of illustrating the extremes of AMTRAK performance. This study, incidentally, only considered direct energy consumed, and made no allowance for circuity.

The only major study of AMTRAK to come from the academic world is that of Mulvey (1978). He is critical of the tendency to over-rate the performance of rail because of a failure to take into account the effect of circuity which he finds is much less on short-distance than on long-distance trips. Additionally, measures of rail energy efficiency were often determined in an idealised laboratory setting, he claims:

For example, the Empire Builder would be expected to burn 1700 gallons between Seattle, Washington, and Havre, Montana according to laboratory performance results. In fact, the train uses 3975 gallons to make the journey due to the influence of grades.

He proceeds to derive his own results, bearing the abovementioned points in mind. His assumptions are yet different from either those
of the CBO or SRI studies. He assumes 50 percent load factor for air
and bus, and varies the load factor for auto according to distance,
putting it at 2 passengers per vehicle for short distances and 2.5 for
longer trips. He assumes 38 percent load factor for conventional short-
haul trains, and 50 percent for Metroliner and long-distance trains.
His diversion factors (see TABLE 9) are rather more complex than those
of the CBO report.

TABLE 9

<table>
<thead>
<tr>
<th>Mode that would be used in the absence of rail</th>
<th>Long-Distance</th>
<th>Short Distance</th>
<th>Metroliner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air</td>
<td>50</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Bus</td>
<td>25</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Auto</td>
<td>25</td>
<td>75</td>
<td>40</td>
</tr>
</tbody>
</table>

Rail performance is reduced 10 percent on short-distance trips, and 25
percent on long-distance trips to account for circuity. The results are
shown in TABLE 10 (see also TABLES 3 & 4).

The most dramatic contrast can be seen to be that between Metroliners
and other short-distance trains on the one hand, and long-distance
trains on the other. The latter are shown to use more than twice as much
energy as either former category. Consistent with other studies (except
AMTRAK's), bus outperforms all other modes in all cases. Rail ranks
above auto in each category, but is at a much greater advantage in the
short-distance than in the long-distance markets. Of particular note is
that short-distance passengers using trains designed to cover short
distances save much more energy than passengers covering similar
distances on the much less efficient long-distance services. As Mulvey
puts it:
TABLE 10 (TABLE 2.9 in Mulvey, 1978)

Energy Savings Due to Intercity Rail Passenger Service

<table>
<thead>
<tr>
<th>Type of Service and Diversion</th>
<th>Passenger Miles (000)</th>
<th>Passenger Miles/Gallon</th>
<th>Fuel Consumed (Gallons) Diverted and Net Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metroliner</td>
<td>324,190</td>
<td>100</td>
<td>3,241,900</td>
</tr>
<tr>
<td>Diverted from:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air</td>
<td>162,095</td>
<td>20</td>
<td>8,104,750</td>
</tr>
<tr>
<td>Bus</td>
<td>32,419</td>
<td>120</td>
<td>270,075</td>
</tr>
<tr>
<td>Auto</td>
<td>129,675</td>
<td>30</td>
<td>4,322,500</td>
</tr>
<tr>
<td>Diverted from Air, Bus, Auto</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-distance Travelers on:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-distance trains</td>
<td>1,150,545</td>
<td>97</td>
<td>11,861,288</td>
</tr>
<tr>
<td>Long-distance trains</td>
<td>1,227,273</td>
<td>44</td>
<td>27,892,568</td>
</tr>
<tr>
<td>Diverted from Air, Bus, Auto</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-distance Travelers on:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-distance trains</td>
<td>60,561</td>
<td>97</td>
<td>624,340</td>
</tr>
<tr>
<td>Long-distance trains</td>
<td>1,227,273</td>
<td>44</td>
<td>28,516,908</td>
</tr>
<tr>
<td>Diverted from Air, Bus, Auto</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total System Savings</td>
<td></td>
<td></td>
<td>53,062,839</td>
</tr>
</tbody>
</table>
AMTRAK's long-haul train services presently consume nearly as much fuel as would have been used by the riders' second choice alternative. AMTRAK's contribution to fuel conservation is effectively zero for long-distance travel. If appropriate short-distance rail passenger services could be provided to meet the needs of short-distance travellers on long-haul trains, the energy savings would be much larger, other things being equal.

Mulvey develops projections for 1990 energy savings from AMTRAK diversion, and finds that similar results hold. He once more emphasises the relationship between short and long-haul:

Note that an intercity rail passenger system designed to meet the specific needs of relatively short-distance trip-makers would generate more fuel savings than the projected system, he comments.

Short-distance trains of Amfleet coaches with high seating density are more efficient than long-distance trains with non-revenue cars, sleepers, and other first-class cars, he affirms, as had the CBO, the difference being that he had considered this in his study, while the CBO had avoided the issue. Mulvey does not get an altogether clean bill-of-health all the same. His auto load factors suffer the same problems as that of the CBO - they may not reflect the actual (possibly lower) load factors of diverted traffic. His diversion factors, though more sensitively constructed than those of the CBO are also, nonetheless, somewhat speculative in nature.

A report by the General Accounting Office (1978c) comes down even harder on long-distance trains than does Mulvey. "Our analysis indicated that the trains on the 11 routes reviewed consumed more energy in fiscal year 1977 than would have been consumed if every passenger had used an automobile," it declares (see DIAG. 2). These were mostly long-distance routes, the exceptions being low-density short-distance routes having similar service characteristics to the
FUEL CONSUMPTION
Automobile Vs. Train Ratio Of Crude Oil Equivalents

Ratio Of Crude Oil Equivalents

0  1  2  3  4  5

AUTOMOBILE

CHICAGO-SEATTLE (N)

CHICAGO-SEATTLE (S)

CHICAGO-FLORIDA

NEW YORK/ WASHINGTON-KANSAS CITY

WASHINGTON-MONTREAL

CHICAGO-LAREDO

SEATTLE-PORTLAND

OAKLAND-BAKERSFIELD

WASHINGTON-CINCINNATI

SEATTLE-VANCOUVER

WASHINGTON-TRI-STATE STATION

DIAG. 2 (from US General Accounting Office, 1978c)
long-distance routes, and generally using old equipment. Auto load factor was assumed to be 2.5, possibly inappropriately high, for the reasons discussed above.

There is disappointingly little on the possible energy savings of new corridor-type operations currently under consideration, or accruing from the use of different types of equipment. The Recent "Rail Passenger Corridors" by FRA and AMTRAK (1980) made surprisingly little reference to energy. "Within the time constraints of this study," it states:

DOT and AMTRAK have not been able to take into account the special energy implications of improved rail service in each corridor market such as the physical profile of the route itself. Given the very approximate nature of the demand estimates in this report, the calculation of fuel use was based on broad assumptions about load factors and average figures for fuel consumption per seat mile for each mode.

The study estimated fuel efficiency in excess of 110 passenger miles per gallon for 79mph maximum speed operations, having taken into account improved operating conditions. It estimated 33 PM/g for auto—having assumed a load factor of only 1.5 for the very reasons discussed earlier. Air is estimated at 24 PM/g and bus at 129 PM/g.

The earlier GAO (1978b) report (whose results are given in TABLES 3 & 4) does not adjust for the specifics of corridor operation and demonstrates its narrowness and lack of foresight with statements such as that:

If AMTRAK ran longer trains with more of its seats filled, it could undoubtedly do better in these characteristics, but, as we have noted, the passenger demand that would be needed to permit such operations does not exist.

There is generally poor coverage in all reports of what improvements in technology or operating procedures could do to improve performance.
Mulvey does indeed mention the advantages that might accrue from putting short-distance passengers currently using long-distance trains onto their own dedicated short-distance services. He does not, however, discuss the demand conditions pertaining to those particular markets which, outside of densely populated corridors, simply might not be able to sustain such service. There might be the possibility for energy savings were new equipment, perhaps in the form of "railbuses" to be adopted. The recent railbus developed by British Rail Engineering and British Leyland, for example, is literally a bus fitted with rail bogies. Its fuel consumption is that of the bus, but in performance it shows many of the advantages of a fixed guidance system. The Budd Company has, in addition, developed a single vehicle railcar, the SPV 2000, for which it claims better than inter-city bus fuel efficiency on a seat-mile basis (US Congress, 1979b). The railbus/car appears to be a promising concept in terms of providing energy-efficient rail passenger service for short-distance segments of route in relatively low populated areas.

The relevance of reports which seek to evaluate potential energy savings based only on a currently installed and possibly inappropriate technology must be called into question. Other aspects which the analysts have overlooked include the feasibility of electrifying and upgrading short-distance corridors, something which would generally be out of the question on long-distance routes. Drawing on from this, one must ask whether direct comparison in terms of BTUs is really the only appropriate criterion. Electrical power can be derived from sources other than petroleum, and given that this latter fuel is the one most likely to be unpredictable in supply, perhaps a mode running on other
fuels should be given greater weighted favorable emphasis.

This problem forms just one small part of the conceptual difficulties which plague this whole area of study. As we have seen, studies have varied widely in approaches to attacking the issue, and variations in often dubious assumptions have been enough to invalidate the results. If we put aside the rather unusual and all-encompassing method of allocating indirect energy used by the SRI Los Angeles - San Diego study, this latter report does appear to be the cleanest and crispest in both its direct field-study approach, and its relatively smaller reliance on the somewhat cookbook assumptions of the other documents. The fact that this route is given a lower energy consumption rating than either the CBO Northeast Corridor or non-Northeast Corridor findings underlines the speciousness of the CBO design of dividing everything according to whether it is in the Northeast Corridor or not. Although the Los Angeles - San Diego corridor is the most successful corridor service outside the Northeast, the SRI Direct Energy finding may be taken to suggest that similar conditions might apply to other corridor-type services, provided they emulate the service characteristics of the Northeast Corridor, and that the aggregated way in which the CBO considers everything outside the Northeast Corridor is misleading.

A more weighty matter concerns what should be done about Indirect Energy, assessment of which in all cases is very far from satisfactory. It is because of this, and also because the SRI California study is small and does not deal fully with opportunity costs, that rather more evidence is needed to back up this point.

Such evidence comes from two directions. The first is the undeniably
far less fuel-efficient performance of long-distance trains than of 
short-distance trains with only coach cars or raibuses/cars. If rail 
cannot be compared against other modes with full confidence, then at 
least the variance in performance within rail can be noted with better 
surety.

Secondly, there is the matter of market share, a subject largely 
ignored in the literature. Hilton does not spare much breath in 
pointing out that rail only accounts for 0.3% of total intercity 
passenger miles, while auto, air and bus accounted for 87.2 percent, 
11.2 percent and 1.3 percent respectively in 1976. In other words, any 
savings in energy attributable to rail on a national scale are nothing 
more than a drop in the ocean. As Mulvey puts it, while he estimates 
AMTRAK saves 53 million gallons of fuel a year, 100 percent compliance 
with the 55 mph road speed limit would save 2.5 billion gallons.

However, because AMTRAK's impact is far from constant across all 
markets it serves, while it could make little national-scale 
contribution, within certain high-density regional markets it could 
make a significant impact. Rail, for example, accounts for 16 percent 
of New York - Washington traffic, and 40 percent of air and train traffic 
along that route. Also relevant is the point that in the event of an 
energy contingency, a regional system already carrying say 30 percent 
of the market at 50 percent load factor, could readily accommodate 
an extra 30 percent of the total market - 43 percent of the normally 
non-rail market. A long-distance route carrying 0.3 percent of the 
market under normal conditions, at 50 percent load factor, could only 
accommodate an extra 0.3 percent of the total market (0.31 percent of
the normally non-rail market), providing insignificant relief.

Consideration of market share also prompts further questioning of the diversion factors used in the CBO and Mulvey studies. Because rail passenger traffic on long-distance routes represents such a small share of total traffic in those particular markets, it seems unlikely that discontinuance of AMTRAK service would lead to more than a slight increase in vehicle miles for either buses or airlines, and maybe not even that.

The way the diversion factors are used assumes that if \( x \) more passenger miles are transferred to air or bus, then this will imply an increase in fuel consumption in proportion to \( x \). It is vehicle miles, and not passenger miles which determine actual energy use, however, and this misconception may well have badly biased the results for common carrier diversion, if not for automobile. On the long-distance routes, the insignificant number of passengers transferring to air or bus may simply marginally increase load factors or, to put it another way, the existence of AMTRAK service on long-distance routes may have little or no effect on reducing vehicle miles by air or bus. Far from the diverted passengers using less energy than if they had flown, the existence of the train might mean that more energy is consumed.

In contrast, where AMTRAK has a significant market share, discontinuance of its services could result in the need for large increases in capacity on other carriers. As DIAG. 3 (from Winestone, 1979) shows, improvements in the competitive position of AMTRAK in the market share significant New York - Washington market were accompanied by a decline in air shuttle patronage. There is also a distance effect backing up the market
share effect – that is to say that an increase of y passenger miles over a short distance is more likely to affect the total number of vehicle miles of an alternative common carrier than over a long-distance trip because it represents a larger proportion of vehicle miles.

To put it bluntly, whereas short-haul corridor-type services may have significant results in reducing other carriers' energy consumption, long-haul services may have little, or no, similar effect. This must be evaluated in relation to automobile traffic diversion.

The misunderstanding, amongst public and Congressmen alike, about rail's real contribution, actual and potential, to the energy cause has not been helped by trivial aggregate comparisons or misconceived studies.
that, sophisticated though they may appear at first glance, are little more than superficial and biased in reality.

This said, such evidence as might be reliably obtained from the literature, together with evidence developed in critiquing it, can be taken to read that short-distance corridor services can be of far greater importance in energy terms than long-distance trains, and that a long-distance inter-connected network is certainly not justified on energy grounds alone. The existence of some long-distance services may even result in greater energy use than were they not to exist, though I am not satisfied that the quality of evidence available relating to this is high enough to prove this latter point conclusively.

If energy conservation is top priority, there would therefore be a case for concentration on development of corridor potential. Other short-distance routes may continue to do rather less well than corridors if they continue to use conventional equipment, although the fact that the equipment can carry more trips than were it to be operating a long-haul route (because distance before turn-round is so much less) means that it can carry a greater market share and thus be more effective in reducing vehicle miles on other modes.

Outside of high-density corridors, there may however be a case for developing an alternative railbus-type technology for short-distance services which, were it to cause diversion from auto, could be a useful, if slight, energy saver, and which would certainly be more efficient than use of long-haul or other conventional equipment.
APPENDIX C

Critique of AMTRAK's Route Forecasting Model (Model reprinted in Hilton, 1980).
The almost bizarre inadequacies of AMTRAK's route forecasting model become quickly apparent. The model is stated as follows:

\[ R\% = -0.38 + 1.09F\% + 0.319E + 0.073T\% + 4.944P\% - 18.325ED \]

where:
- \( R\% \) = Percentage change of ridership on any route in a year;
- \( F\% \) = Percentage change of frequency on any route in a year, where frequency is expressed as train-mile days/(route miles times 365 days);
- \( E \) = Absolute change in the percentage of train days having new equipment (Amfleet and Turboliner);
- \( T\% \) = Percentage change of AMTRAK on-time performance on any route in a year;
- \( P\% \) = Percentage change in population in states along the routes;
- \( ED \) = 1 for recovery from energy shortage (1970 - 1975), 0 for no shortage in either year (1975 - 1976).

Changes in ridership are related to a very small number of variables, and the whole equation is calibrated so as to only apply under very specific conditions. There is little evidence that ridership is linearly related to changes in frequency. For small changes, there might be a reasonable possibility of approximating the relationship with a linear function, but for major changes the effect will depend on the elasticity of demand for the particular market in question, and market conditions such as distance and time for journey, and competition, will be important determinants of this. Additional frequency in the Los Angeles - San Diego corridor, for example, has resulted in exponential growth in ridership.

The "new equipment" variable is also unusual - surely it is important to know what the new equipment does, rather than just that it is "new." New, high-speed cars on a corridor service may have a rather different effect than Superliners on a long-distance route and this,
like frequency, will vary according to market characteristics.

The change in on-time performance item is also questionable. When it was seen that AMTRAK long-distance trains were almost invariably late, the schedules were lengthened, often by inserting a "recovery" period into the last part of the journey, so that the train would appear to be on time more often. Does this stimulate new ridership? The formula suggests that it does.

Lastly, we have the population variable. This is likely to behave in markedly different ways in different markets, having a rather greater effect in the congested Northeast Corridor than on some sunny patch of empty New Mexico.

This formula, then, as some sort of be-all-and-end-all predictor, is wholly inadequate. While the variables it does use are curious and unreliable, it ignores such factors as fare level, speed of service, and relative standing as compared to other modes. In orientation, further, it is geared towards the long-distance services, and in relative terms, as compared to more accurate predictive devices, because it neglects the quantum performance improvements possible from major corridor upgrading, it reflects relatively more favorably on long-distance train retention than on short-distance service development.
APPENDIX D

To provide financial assistance for and establishment of a national rail passenger system, to provide for the modernization of railroad passenger equipment, to authorize the prescribing of minimum standards for railroad passenger service, to amend section 13a of the Interstate Commerce Act, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Rail Passenger Service Act of 1970".

TITLE I—FINDINGS, PURPOSES, AND DEFINITIONS

SEC. 101. CONGRESSIONAL FINDINGS AND DECLARATION OF PURPOSE.
The Congress finds that modern, efficient, intercity railroad passenger service is a necessary part of a balanced transportation system; that the public convenience and necessity require the continuance and improvement of such service to provide fast and comfortable transportation between crowded urban areas and in other areas of the country; that rail passenger service can help to end the congestion on our highways and the overcrowding of airways and airports; that the traveler in America should to the maximum extent feasible have freedom to choose the mode of travel most convenient to his needs; that to achieve these goals requires the designation of a basic national rail passenger system and the establishment of a rail passenger corporation for the purpose of providing modern, efficient, intercity rail passenger service; that Federal financial assistance as well as investment capital from the private sector of the economy is needed for this purpose; and that interim emergency Federal financial assistance to certain railroads may be necessary to permit the orderly transfer of railroad passenger service to a railroad passenger corporation.

SEC. 102. DEFINITIONS.
For the purposes of this Act—
(1) "Railroad" means a common carrier by railroad, as defined in section 1(3) of part I of the Interstate Commerce Act, as amended (49 U.S.C. 1(3)) other than the corporation created by title III of this Act.
(2) "Secretary" means the Secretary of Transportation or his delegate unless the context indicates otherwise.
(3) "Commission" means the Interstate Commerce Commission.
(4) "Basic system" means the system of intercity rail passenger service designated by the Secretary under title II and section 403(a) of this Act.
(5) "Intercity rail passenger service" means all rail passenger service other than (A) commuter and other short-haul service in metropolitan and suburban areas, usually characterized by reduced fare, multiple-ride and commutation tickets, and by morning and evening peak period operations, and (B) auto-ferry service characterized by transportation of automobiles and their occupants where contracts for such service have been consummated prior to enactment of this Act.
(6) "Avoidable loss" means the avoidable costs of providing passenger service, less revenues attributable thereto, as determined by the Interstate Commerce Commission pursuant to the provisions of section 553 of title 5, United States Code.
(7) "Corporation" means the National Railroad Passenger Corporation created under title III of this Act.
(8) "Regional transportation agency" means an authority, corporation, or other entity established for the purpose of providing passenger service within a region.

TITLE II--BASIC NATIONAL RAIL PASSENGER SYSTEM

SEC. 201. DESIGNATION OF SYSTEM.

In carrying out the congressional findings and declaration of purpose set forth in title I of this Act, the Secretary, acting in cooperation with other interested Federal agencies and departments, is authorized and directed to submit to the Commission and to the Congress within thirty days after the date of enactment of this Act his preliminary report and recommendations for the basic system. Such recommendations shall specify those points between which intercity passenger trains shall be operated, identify all routes over which service may be provided, and the trains presently operated over such routes, together with basic service characteristics of operations to be provided within the basic system, taking into account schedules, number of trains, connections, through service, and sleeping, parlor, dining, and lounge facilities. In recommending the basic system the Secretary shall take into account the need for expedited intercity rail passenger service within and between all regions of the continental United States, and the Secretary shall consider the need for such service within the States of Alaska and Hawaii and the Commonwealth of Puerto Rico. In formulating such recommendations the Secretary shall consider opportunities for provision of faster service, more convenient service, service to more centers of population, and service at lower cost, by the joint operation, for passenger service, of facilities of two or more railroad companies; the importance of a given service to overall viability of the basic system; adequacy of other transportation facilities serving the same points; unique characteristics and advantages of rail service as compared to other modes of transportation; the relationship of public benefits of given services to the costs of providing such services; and potential profitability of the service. The exclusion of a particular route, train, or service from the basic system shall not be deemed to create a presumption that the route, train, or service is not required by public convenience and necessity in any proceeding under section 15a of the Interstate Commerce Act (49 U.S.C. 15a).

SEC. 202. REVIEW OF THE BASIC SYSTEM.

The Commission, the State Commissions, the representatives of the railroads, and labor organizations duly authorized under the Railway Labor Act to represent railroad employees shall, within thirty days after receipt of the preliminary report of the Secretary designating the basic system, review such report consistent with the purposes of this Act and provide the Secretary with their comments and recommendations in writing. The Secretary shall give due consideration to such comments and recommendations. The Secretary shall, within ninety days after the date of enactment of this Act, submit his final report designating the basic system to the Congress. Such final report shall include a summary of their recommendations together with his reasons for failing to adopt any such recommendation. The basic system as designated by the Secretary shall become effective for the purposes of this Act upon the date that the final report of the Secretary is submitted to Congress and shall not be reviewable in any court.
SEC. 301. CREATION OF THE CORPORATION.

There is authorized to be created a National Railroad Passenger Corporation. The Corporation shall be a for profit corporation, the purpose of which shall be to provide intercity rail passenger service, employing innovative operating and marketing concepts so as to fully develop the potential of modern rail service in meeting the Nation's intercity passenger transportation requirements. The Corporation will not be an agency or establishment of the United States Government. It shall be subject to the provisions of this Act and, to the extent consistent with this Act, to the District of Columbia Business Corporation Act. The right to repeal, alter, or amend this Act at any time is expressly reserved.

SEC. 302. PROCESS OF ORGANIZATION.

The President of the United States shall appoint not fewer than three incorporators, by and with the advice and consent of the Senate, who shall also serve as the board of directors for one hundred and eighty days following the date of enactment of this Act. The incorporators shall take whatever actions are necessary to establish the Corporation, including the filing of articles of incorporation, as approved by the President.

SEC. 303. DIRECTORS AND OFFICERS.

(a) The Corporation shall have a board of fifteen directors consisting of individuals who are citizens of the United States, of whom one shall be elected annually by the board to serve as chairman. Eight members of the board shall be appointed by the President of the United States, by and with the advice and consent of the Senate, for terms of four years or until their successors have been appointed and qualified, except that the first three members of the board so appointed shall continue in office for terms of two years, and the next three members for terms of three years. Any member appointed to fill a vacancy may be appointed only for the unexpired term of the director whom he succeeds. At all times the Secretary shall be one of the members of the board of directors appointed by the President and at all times at least one such member shall be a consumer representative. Three members of the board shall be elected annually by common stockholders, and four shall be elected annually by preferred stockholders of the Corporation. The members of the board appointed by the President and those elected by common stockholders shall take office on the one hundred and eighty-first day after the date of enactment of this Act. Election of the remaining four members of the board shall take place as soon as practicable after the first issuance of preferred stock by the Corporation. Pending election of the remaining four members, seven members shall constitute a quorum for the purpose of conducting the business of the board. No director appointed by the President may have any direct or indirect financial or employment relationship with any railroad during the time that he serves on the board. Each of the directors not employed by the Federal Government shall receive compensation at the rate of $300 for each meeting of the board he attends. In addition, each director shall be reimbursed for necessary travel and subsistence expenses incurred in attending the meetings of the board. No director elected by railroads shall vote on any action of the board of directors relating to any contract or operating relationship between the Corporation and a railroad, but he may be present at meetings of the board at which such matters are voted upon, and he may be included for purposes of
determining a quorum and may participate in discussions at any such meeting.

(b) The board of directors is empowered to adopt and amend bylaws governing the operation of the Corporation. Such bylaws shall not be inconsistent with the provisions of this Act or of the articles of incorporation.

(c) The articles of incorporation of the Corporation shall provide for cumulative voting for all stockholders and shall provide that, upon conversion of one-fourth of the outstanding shares of preferred stock, the common stockholders shall be entitled to elect four directors and the preferred stockholders shall be entitled to elect three directors; upon conversion of one-half of the outstanding shares of preferred stock, the common stockholders shall be entitled to elect five directors and the preferred stockholders shall be entitled to elect two directors; upon conversion of three-fourths of the outstanding shares of preferred stock, the common stockholders shall be entitled to elect six directors and the preferred stockholders shall be entitled to elect one director; and upon conversion of all outstanding shares of preferred stock, the common stockholders shall be entitled to elect seven directors. Any change of directors resulting from such stock conversion shall take effect at the next annual meeting of the Corporation following such stock conversion.

(d) The Corporation shall have a president and such other officers as may be named and appointed by the board. The rates of compensation of all officers shall be fixed by the board. Officers shall serve at the pleasure of the board. No individual other than a citizen of the United States may be an officer of the Corporation. No officer of the Corporation may have any direct or indirect employment or financial relationship with any railroad during the time of his employment by the Corporation.

SEC. 304. FINANCING OF THE CORPORATION.

(a) The Corporation is authorized to issue and have outstanding, in such amounts as it shall determine, two issues of capital stock, a common and a preferred, each of which shall carry voting rights and be eligible for dividends. Common stock may be initially issued only to a railroad. Preferred stock may be issued to and held only by any person other than (1) a railroad or (2) any person controlling one or more railroads, as defined in section 1(3)(b) of the Interstate Commerce Act. The articles of incorporation of the Corporation shall provide for the following respective rights of each issue of stock:

(A) COMMON STOCK.—Common stock shall have a par value of $10 per share and shall be designated fully paid and nonassessable. No dividends shall be paid on the common stock whenever dividends on the preferred stock are in arrears.

(B) (i) PREFERRED STOCK.—Preferred stock shall have a par value of $100 per share and shall be designated fully paid and nonassessable. Dividends shall be fixed at a rate not less than 6 per centum per annum, and shall be cumulative so that, if for any dividend period dividends at the rate fixed in the articles of incorporation shall not have been declared and paid or set aside for payment on the preferred shares, the deficiency shall be declared and paid or set apart for payment prior to the making of any dividend or other distribution on the common shares.

(ii) Preferred stock shall be entitled to a liquidation preference over common stock, which shall entitle preferred stockholders to a liquidating payment not less than par value plus all accrued unpaid dividends prior to any payment on liquidation to common stockholders.
(iii) Preferred stock shall be convertible into shares of common stock at such time and upon such terms as the articles of incorporation shall provide.

(b) At no time after the initial issue is completed shall the aggregate of the shares of common stock of the Corporation owned by a single railroad or by any person controlling one or more railroads, as defined in section 1(3)(b) of the Interstate Commerce Act, directly or indirectly through subsidiaries or affiliated companies, nominees, or any person subject to its direction or control, exceed 331/3 per centum of such shares issued and outstanding.

(c) At no time may any stockholder, or any syndicate or affiliated group of such stockholders, own more than 10 per centum of the shares of preferred stock of the Corporation issued and outstanding.

(d) The articles of incorporation shall provide that no shares of any issue of stock may be redeemed or repurchased for five years, following the date of enactment of this Act.

(e) The Corporation is authorized to issue, in addition to the stock authorized by subsection (a) of this section, nonvoting securities, bonds, debentures, and other certificates of indebtedness as it may determine.

(f) The requirement of section 45(b) of the District of Columbia Business Corporation Act (D.C. Code, sec. 29-920(b)) as to the percentage of stock which a stockholder must hold in order to have the rights of inspection and copying set forth in that subsection shall not be applicable in the case of holders of the stock of the Corporation, and they may exercise such rights without regard to the percentage of stock they hold.

SEC. 366. GENERAL POWERS OF THE CORPORATION.

The Corporation is authorized to own, manage, operate, or contract for the operation of intercity trains operated for the purpose of providing modern, efficient, intercity transportation of passengers and to carry mail and express on such trains; to conduct research and development related to its mission; and to acquire by construction, purchase, or gift, or to contract for the use of, physical facilities, equipment, and devices necessary to rail passenger operations. The Corporation shall, consistent with prudent management of the affairs of the Corporation, rely upon railroads to provide the employees necessary to the operation and maintenance of its passenger trains and to the performance of all services and work incidental thereto, to the extent the railroads are able to provide such employees and services in an economic and efficient manner. To carry out its functions and purposes, the Corporation shall have the usual powers conferred upon a stock corporation by the District of Columbia Business Corporation Act.

SEC. 366. APPLICABILITY OF THE INTERSTATE COMMERCE ACT AND OTHER LAWS.

(a) The Corporation shall be deemed a common carrier by railroad within the meaning of section 1(3) of the Interstate Commerce Act and shall be subject to all provisions of the Interstate Commerce Act other than those pertaining to—

1. regulation of rates, fares, and charges;

2. abandonment or extension of lines of railroads utilized solely for passenger service, and the abandonment or extension of operations over such lines of railroads, whether by trackage rights or otherwise;

3. regulation of routes and service and, except as otherwise provided in this Act, the discontinuance or change of passenger train service operations.
(b) The Corporation shall be subject to the same laws and regulations with respect to safety and with respect to the representation of its employees for purposes of collective bargaining, the handling of disputes between carriers and their employees, employee retirement, annuity and unemployment systems, and other dealings with its employees as any other common carrier subject to part I of the Interstate Commerce Act.

(c) The Corporation shall not be subject to any State or other law pertaining to the transportation of passengers by railroad as it relates to rates, routes, or service.

(d) Leases and contracts entered into by the Corporation, regardless of the place where the same may be executed, shall be governed by the laws of the District of Columbia.

(e) Persons contracting with the Corporation for the joint use or operation of such facilities and equipment as may be necessary for the provision of efficient and expeditious passenger service shall be and are hereby relieved from all prohibitions of existing law, including the antitrust laws of the United States, with respect to such contracts, agreements, or leases insofar as may be necessary to enable them to enter into such contracts and to perform their obligations thereunder.

SEC. 307. SANCTIONS.

(a) If the Corporation or any railroad engages in or adheres to any action, practice, or policy inconsistent with the policies and purposes of this Act, obstructs or interferes with any activities authorized by this Act, refuses, fails, or neglects to discharge its duties and responsibilities under this Act, or threatens any such violation, obstruction, interference, refusal, failure, or neglect, the district court of the United States for any district in which the Corporation or other person resides or may be found shall have jurisdiction, except as otherwise prohibited by law, upon petition of the Attorney General of the United States or, in a case involving a labor agreement, upon petition of any employee affected thereby, including duly authorized employee representatives, to grant such equitable relief as may be necessary or appropriate to prevent or terminate any violation, conduct, or threat.

(b) Nothing contained in this section shall be construed as relieving any person of any punishment, liability, or sanction which may be imposed otherwise than under this Act.

SEC. 308. REPORTS TO THE CONGRESS.

(a) The Corporation shall transmit to the President and the Congress, annually, commencing one year from the date of enactment of this Act, and at such other times as it deems desirable, a comprehensive and detailed report of its operations, activities, and accomplishments under this Act, including a statement of receipts and expenditures for the previous year. At the time of its annual report, the Corporation shall submit such legislative recommendations as it deems desirable, including the amount of financial assistance needed for operations and for capital improvements, the manner and form in which the amount of such assistance should be computed, and the sources from which such assistance should be derived.

(b) The Secretary and the Commission shall transmit to the President and the Congress, one year following the date of enactment of this Act and biennially thereafter, reports on the state of rail passenger service and the effectiveness of this Act in meeting the requirement for a balanced national transportation system, together with any legislative recommendations.
TITLw IV—PROVISION OF RAIL PASSENGER SERVICES

SEC. 401. ASSUMPTION OF PASSENGER SERVICE BY THE CORPORATION; COMMENCEMENT OF OPERATIONS.

(a) (1) On or before May 1, 1971, the Corporation is authorized to contract and, upon written request therefor from a railroad, shall tender a contract to relieve the railroad, from and after May 1, 1971, of its entire responsibility for the provision of intercity rail passenger service. On or after March 1, 1973, but before January 1, 1975, the Corporation is authorized to contract, and upon written request therefor, shall tender a contract to relieve the railroad of its entire responsibility for the provision of intercity rail passenger service and such relief shall become effective upon the date on which such contract is entered into. Contracts may be entered into on or before May 1, 1971, notwithstanding the fact that the decision of the Commission under section 102(f) of this Act with respect to avoidable loss has not become final. Any contract entered into before such decision of the Commission has become final shall be subject to adjustment to assure that the contract is consistent with such final decision of the Commission. The contract may be made upon such terms and conditions as necessary to permit the Corporation to undertake passenger service on a timely basis. Upon its entering into a valid contract (including protective arrangements for employees), the railroad shall be relieved of all its responsibilities as a common carrier of passengers by rail in intercity rail passenger service under part I of the Interstate Commerce Act or any State or other law relating to the provision of intercity passenger service: Provided. That any railroad discontinuing a train hereunder must give notice in accordance with the notice procedures contained in section 13a(1) of the Interstate Commerce Act.

(2) In consideration of being relieved of this responsibility by the Corporation, the railroad shall agree to pay to the Corporation each year for three years an amount equal to one-third of 50 per centum of the fully distributed passenger service deficit of the railroad as reported to the Commission for the year ending December 31, 1969. The payment to the Corporation may be made in cash or, at the option of the Corporation, by the transfer of rail passenger equipment or the provision of future service as requested by the Corporation. Unless the railroad waives all rights to receive stock in exchange for its payments, the railroad shall receive common stock from the Corporation in an amount equivalent in par value to each payment. If the amount owed the Corporation under either of these alternatives is agreed by the parties to be less than the amount paid pursuant to paragraph (2), the Corporation shall pay the difference to the railroad and the railroad shall surrender to the Corporation an amount of stock, at par value, equivalent to such payment. If the railroad and the
Corporation are unable to agree as to the amount owed, the matter shall be referred to the Interstate Commerce Commission for decision. The Commission, upon investigation, shall decide the issue within ninety days following the date of referral, or within such additional time as the Commission may order not to exceed an aggregate of one hundred and eighty days following such date of referral, and its decision shall be binding on both parties.

The payments to the Corporation shall be made in accordance with a schedule to be agreed upon between the parties. Unless the parties otherwise agree, the payments for each of the first twelve months following the date on which the Corporation assumes any of the operational responsibilities of the railroad shall be in cash and not less than one thirty-sixth of the amount owed.

(b) On May 1, 1971, the Corporation shall begin the provision of intercity rail passenger service between points within the basic system unless such service is being provided (i) either by a railroad with which it has not entered into a contract under subsection (a) of this section or (ii) by a regional transportation agency, provided such agency gives satisfactory assurance to the Corporation of the agency's financial and operating capability to provide such service, and of its willingness to cooperate with the Corporation and with other regional transportation agencies on matters of through train service, through car service, and connecting train service. The Corporation may at any time subsequent to May 1, 1971, contract with a regional transportation agency to provide intercity rail passenger service between points within the basic system included within the service of such agency.

(c) No railroad or any other person may, without the consent of the Corporation, conduct intercity rail passenger service over any route over which the Corporation is performing scheduled intercity rail passenger service pursuant to a contract under this section.

SEC. 402. FACILITY AND SERVICE AGREEMENTS.

(a) The Corporation may contract with railroads or with regional transportation agencies for the use of tracks and other facilities and the provision of services on such terms and conditions as the parties may agree. In the event of a failure to agree, the Interstate Commerce Commission shall, if it finds that doing so is necessary to carry out the purposes of this Act, order the provision of services or the use of tracks or facilities of the railroad by the Corporation, on such terms and for such compensation as the Commission may fix as just and reasonable, and the rights of the Corporation to such services or to the use of tracks or facilities of the railroad or agency under such order or under an order issued under subsection (b) of this section shall be conditioned upon payment by the Corporation of the compensation fixed by the Commission. If the amount of compensation fixed is not duly and promptly paid, the railroad or agency entitled thereto may bring an action against the Corporation to recover the amount properly owed.

(b) To facilitate the initiation of operations by the Corporation within the basic system, the Commission shall, upon application by the Corporation, require a railroad to make immediately available tracks and other facilities. The Commission shall thereafter promptly proceed to fix such terms and conditions as are just and reasonable.

SEC. 403. NEW SERVICE.

(a) The Corporation may provide intercity rail passenger service in excess of that prescribed for the basic system, either within or outside the basic system, including the operation of special and extra passenger trains, if consistent with prudent management. Any intercity rail passenger service provided under this subsection for a continuous period of two years shall be designated by the Secretary as a part of the basic system.
(b) Any State, regional, or local agency may request of the Corporation rail passenger service beyond that included within the basic system. The Corporation shall institute such service if the State, regional, or local agency agrees to reimburse the Corporation for a reasonable portion of any losses associated with such services.

(c) For purposes of this section the reasonable portion of such losses to be assumed by the State, regional, or local agency, shall be no less than 66 2/3 per centum of, nor more than, the solely related costs and associated capital costs, including interest on passenger equipment, less revenues attributable to, such service. If the Corporation and the State, regional, or local agency are unable to agree upon a reasonable apportionment of such losses, the matter shall be referred to the Secretary for decision. In deciding this issue the Secretary shall take into account the intent of this Act, and the impact of requiring the Corporation to bear such losses upon its ability to provide improved service within the basic system.

SEC. 404. DISCONTINUANCE OF SERVICE.

(a) Unless it has entered into a contract with the Corporation pursuant to section 401(a)(1) of this Act, no railroad may discontinue any intercity passenger train whatsoever prior to January 1, 1975, the provisions of any other Act, the laws or constitution of any State, or the decision or order of, or the pendency of any proceeding before, a Federal or State court, agency, or authority to the contrary notwithstanding. On and after January 1, 1975, passenger train service operated by such railroad may be discontinued under the provisions of section 13a of the Interstate Commerce Act. Upon filing of a notice of discontinuance by such railroad, the Corporation may undertake to initiate passenger train operations between the points served.

(b)(1) The Corporation must provide the service included within the basic system until July 1, 1973, to the extent it has assumed responsibility for such service by contract with a railroad pursuant to section 401 of this Act.

(2) Except as provided in section 403(a) of this Act, service beyond that prescribed for the basic system undertaken by the Corporation upon its own initiative may be discontinued at any time.

(3) If at any time after July 1, 1973, the Corporation determines that any train or trains in the basic system in whole or in part are not required by public convenience and necessity, or will impair the ability of the Corporation to adequately provide other services, such train or trains may be discontinued under the procedures of section 13a of the Interstate Commerce Act (49 U.S.C. 13a): Provided, however. That at least thirty days prior to any change or discontinuance, in whole or in part, of any service under this subsection, the Corporation shall mail to the Governor of each State in which the train in question is operated, and post in every station, depot, or other facility served thereby notice of the proposed change or discontinuance. The Corporation may not change or discontinue this service if prior to the end of the thirty-day notice period, State, regional, or local agencies request continuation of the service and within ninety days agree to reimburse the Corporation for a reasonable portion of any losses associated with the continuation of service beyond the notice period.

(4) For the purposes of paragraph (3) of this subsection, the reasonable portion of such losses to be assumed by the State, regional, or local agency shall be no less than 66 2/3 per centum of, nor more than, the solely related costs and associated capital costs, including interest on passenger equipment, less revenues attributable to, such service. If the Corporation and the State, regional, or local agencies are unable to agree upon a reasonable apportionment of such losses, the matter
shall be referred to the Secretary for decision. In deciding this issue the Secretary shall take into account the purposes of this Act and the impact of requiring the Corporation to bear such losses upon its ability to provide improved service within the basic system.

SEC. 405. PROTECTIVE ARRANGEMENTS FOR EMPLOYEES.
(a) A railroad shall provide fair and equitable arrangements to protect the interests of employees affected by discontinuances of intercity rail passenger service whether occurring before, on, or after January 1, 1975.
(b) Such protective arrangements shall include, without being limited to, such provisions as may be necessary for (1) the preservation of rights, privileges, and benefits (including continuation of pension rights and benefits) to such employees under existing collective-bargaining agreements or otherwise; (2) the continuation of collective-bargaining rights; (3) the protection of such individual employees against a worsening of their positions with respect to their employment; (4) assurances of priority of reemployment of employees terminated or laid off; and (5) paid training or retraining programs. Such arrangements shall include provisions protecting individual employees against a worsening of their positions with respect to their employment which shall in no event provide benefits less than those established pursuant to section 5(2)(f) of the Interstate Commerce Act. Any contract entered into pursuant to the provisions of this title shall specify the terms and conditions of such protective arrangements.
No contract under section 401(a)(1) of this Act between a railroad and the Corporation may be made unless the Secretary of Labor has certified to the Corporation that the labor protective provisions of such contract afford affected employees fair and equitable protection by the railroad.
(c) After commencement of operations in the basic system, the substantive requirements of subsection (b) of this section shall apply to the Corporation. The certification by the Secretary of Labor that employees affected have been provided fair and equitable protection as required by this section shall be a condition to the completion of any transaction requiring such protection.
(d) The Corporation shall take such action as may be necessary to insure that all laborers and mechanics employed by contractors and subcontractors in the performance of construction work financed with the assistance of funds received under any contract or agreement entered into under this title shall be paid wages at rates not less than those prevailing on similar construction in the locality as determined by the Secretary of Labor in accordance with the Davis-Bacon Act. The Corporation shall not enter into any such contract or agreement without first obtaining adequate assurance that required labor standards will be maintained on the construction work. Health and safety standards promulgated by the Secretary of Labor pursuant to section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 533) shall be applicable to all construction work performed under such contracts or agreements, except any construction work performed by a railroad employee. Wage rates provided for in collective bargaining agreements negotiated under and pursuant to the Railway Labor Act shall be considered as being in compliance with the Davis-Bacon Act.
(e) The Corporation shall not contract out any work normally performed by employees in any bargaining unit covered by a contract between the Corporation or any railroad providing intercity rail passenger service upon the date of enactment of this Act and any labor organization, if such contracting out shall result in the layoff of any employee or employees in such bargaining unit.
TITLE V—ESTABLISHMENT OF A FINANCIAL INVESTMENT ADVISORY PANEL

SEC. 501. APPOINTMENT OF ADVISORY PANEL
Within thirty days after enactment of this Act, the President shall appoint a fifteen-man financial advisory panel. Six members of the panel shall represent the business of investment banking, commercial banking, and rail transportation. Two members shall be representatives of the Secretary of the Treasury and seven members shall represent the public in the various regions of the Nation.

SEC. 502. PURPOSE OF ADVISORY PANEL
The advisory panel appointed by the President shall advise the directors of the Corporation on ways and means of increasing capitalization of the Corporation.

SEC. 503. REPORT TO CONGRESS
On or before January 1, 1971, the panel shall submit a report to Congress evaluating the initial capitalization of the Corporation and the prospects for increasing its capitalization.

TITLE VI—FEDERAL FINANCIAL ASSISTANCE

SEC. 601. FEDERAL GRANTS.
There is authorized to be appropriated to the Secretary in fiscal year 1971, $40,000,000 to remain available until expended, for payment to the Corporation for the purpose of assisting in—
(1) the initial organization and operation of the Corporation;
(2) the establishment of improved reservations systems and advertising;
(3) servicing, maintenance, and repair of railroad passenger equipment;
(4) the conduct of research and development and demonstration programs respecting new rail passenger services;
(5) the development and demonstration of improved rolling stock; and
(6) essential fixed facilities for the operation of passenger trains on lines and routes included in the basic system over which no through passenger trains are being operated at the time of enactment of this Act, including necessary track connections between lines of the same or different railroads.

SEC. 602. GUARANTY OF LOANS.
The Secretary is authorized, on such terms and conditions as he may prescribe, to guarantee any lender against loss of principal or interest on securities, obligations, or loans issued to finance the upgrading of roadbeds and the purchase by the Corporation or agency of new rolling stock, rehabilitation of existing rolling stock and for other corporate purposes. The maturity date of such securities, obligations, or loans, including all extensions and renewals thereof, shall not be later than twenty years from their date of issuance, and the amount of guaranteed loans outstanding at any time may not exceed $100,000,000. The Secretary shall prescribe and collect from the lending institution a reasonable annual guaranty fee. There are authorized to be appropriated such amounts as necessary to carry out this section not to exceed $100,000,000.
TITLE VII—INTERIM EMERGENCY FEDERAL FINANCIAL ASSISTANCE

SEC. 701. INTERIM AUTHORITY TO PROVIDE EMERGENCY FINANCIAL ASSISTANCE FOR RAILROADS OPERATING PASSENGER SERVICE.

(a) For the purpose of permitting a railroad to enter into or carry out a contract entered into under this Act, the Secretary is authorized, on such terms and conditions as he may prescribe, to (1) make loans to such railroad, or (2) guarantee any lender against loss of principal or interest on any loan to such railroad.

(b) Before making a loan or a guarantee under this section, the Secretary must find, in writing, that—

(1) the loan or guarantee is necessary to carry out the provisions of this Act;
(2) the proceeds of any loan made or guaranteed under this Act will be used solely to carry out contracts entered into under this Act;
(3) the loan or guarantee is not otherwise available on reasonable terms and conditions; and
(4) there is reasonable assurance that the business affairs of the railroad will be conducted in a prudent manner.

(c) (1) In any case in which there is a liquidation of the assets of any railroad which is the recipient of a loan made or guaranteed under this Act, the United States shall have the first right to redeem that portion of such assets consisting of those rights-of-way, tracks, and other facilities designated by the Secretary to be necessary for the purpose of providing intercity rail passenger service, including services employing innovative technology, within the basic system.
(2) It is the intent of the Congress that, in the case of a loan guarantee under this Act, the United States shall stand in the same position with respect to other creditors as in the case of a direct loan by the United States giving the United States priority over secured and unsecured creditors.

(d) Interest on loans made under this section shall be at a rate not less than a rate determined by the Secretary of the Treasury, taking into consideration the current average market yield on outstanding marketable obligations of the United States with remaining periods to maturity comparable to the average maturity of such loans adjusted to the nearest one-eighth of one per centum.

(e) The maturity date on any loan made or guaranteed under this section, including renewals and extensions thereof, shall not be later than five years from the date of issuance.

(f) The aggregate amount of loans and loan guarantees made under this section shall not exceed $200,000,000.

SEC. 702. AUTHORIZATION FOR APPROPRIATIONS.

There are hereby authorized to be appropriated such amounts not to exceed $200,000,000 as may be necessary to carry out the purposes of this title. Any sums appropriated shall be available until expended.

TITLE VIII—MISCELLANEOUS PROVISIONS

SEC. 801. ADEQUACY OF SERVICE.

The Commission is authorized to prescribe such regulations as it considers necessary to provide safe and adequate service, equipment, and facilities for intercity rail passenger service. Any person who violates a regulation issued under this section shall be subject to a civil penalty of not to exceed $500 for each violation. Each day a violation continues shall constitute a separate offense.
SEC. 802. EFFECT ON PENDING PROCEEDINGS.

Upon enactment of this Act, no railroad may discontinue any intercity rail passenger service whatsoever other than in accordance with the provisions of this Act, notwithstanding the provisions of any other Act, the laws or constitution of any State, or the decision or order of, or the pendency of any proceeding before, any Federal or State court, agency, or authority.

SEC. 803. SEPARABILITY.

If any provision of this Act or the application thereof to any person or circumstance is held invalid, the remainder of the Act and the application of such provision to other persons or circumstances shall not be affected thereby.

SEC. 804. ACCOUNTABILITY.

Section 201 of the Government Corporation Control Act (31 U.S.C. 856) is amended by striking out "and" immediately preceding "(5)" and by inserting immediately before the period at the end thereof the following: "and the National Railroad Passenger Corporation".

SEC. 805. RECORDS AND AUDIT OF THE CORPORATION.

(1) (A) The accounts of the Corporation shall be audited annually in accordance with generally accepted auditing standards by independent certified public accountants or independent licensed public accountants certified or licensed by a regulatory authority of a State or other political subdivision of the United States. The audit shall be conducted at the place or places where the accounts of the Corporation are normally kept. All books, accounts, financial records, reports, files, and other papers, things, or property belonging to or in use by the Corporation and necessary to facilitate the audit shall be made available to the person conducting the audit; and full facilities for verifying transactions with the balances or securities held by depositories, fiscal agents, and custodians shall be afforded to such person.

(B) The report of each such independent audit shall be included in the annual report required by section 308(a) of this Act. The audit report shall set forth the scope of the audit and include such statements as are necessary to present fairly the Corporation's assets and liabilities, surplus or deficit, with an analysis of the changes therein during the year, supplemented in reasonable detail by a statement of the Corporation's income and expenses during the year, and a statement of the sources and application of funds, together with the independent auditor's opinion of those statements.

(2) (A) The financial transactions of the Corporation for any fiscal year during which Federal funds are available to finance any portion of its operations may be audited by the Comptroller General of the United States in accordance with the principles and procedures applicable to commercial corporate transactions and under such rules and regulations as may be prescribed by the Comptroller General. Any such audit shall be conducted at the place or places where accounts of the Corporation are normally kept. The representative of the Comptroller General shall have access to all books, accounts, records, reports, files, and other papers, things, or property belonging to or in use by the Corporation pertaining to its financial transactions and necessary to facilitate the audit, and they shall be afforded full facilities for verifying transactions with the balances or securities held by depositories, fiscal agents, and custodians. All such books, accounts, records, reports, files, papers, and property of the Corporation shall remain in possession and custody of the Corporation.

(B) A report of each such audit shall be made by the Comptroller General to the Congress. The report to the Congress shall contain such comments and information as the Comptroller General may...
deem necessary to inform Congress of the financial operations and condition of the Corporation, together with such recommendations with respect thereto as he may deem advisable. The report shall also show specifically any program, expenditure, or other financial transaction or undertaking observed in the course of the audit, which, in the opinion of the Comptroller General, has been carried on or made without authority of law. A copy of each report shall be furnished to the President, to the Secretary, and to the Corporation at the time submitted to the Congress.

TITLE IX—Tax Deduction for Certain Payments to the National Railroad Passenger Corporation

SEC. 901. (a) Part VIII of subchapter B of chapter 1 of the Internal Revenue Code of 1954 (relating to special deductions for corporations) is amended by adding at the end thereof the following new section:

"SEC. 928. CERTAIN PAYMENTS TO THE NATIONAL RAILROAD PASSENGER CORPORATION.

"(a) General Rule.—If—

"(1) any corporation which is a common carrier by railroad (as defined in section 1(3) of the Interstate Commerce Act (49 U.S.C. 1(3))) makes a payment in cash, rail passenger equipment, or services to the National Railroad Passenger Corporation (hereinafter in this section referred to as the 'passenger Corporation') pursuant to a contract entered into under section 401(a) of the Rail Passenger Service Act of 1970, and

"(2) no stock in the Passenger Corporation is issued at any time to such corporation in connection with, any contract entered into under such section 401(a),

then the amount of such payment shall (subject to subsection (c)) be allowed as a deduction for the taxable year in which it is made.

"(b) When Payment Is Made.—Under regulations prescribed by the Secretary or his delegate, a payment in rail passenger equipment shall be treated as made when title to the equipment is transferred, and a payment in services shall be treated as made when the services are rendered.

"(c) Effect of Certain Subsequent Acquisition of Stock.—

"(1) Disallowance of Deduction.—If any deduction has been allowed under subsection (a) to a corporation and such corporation (or a successor corporation) acquires any stock in the Passenger Corporation (other than in a transaction described in section 374 or 381) before the close of the 36-month period which begins with the day on which the last payment is made to the Passenger Corporation pursuant to the contract entered into under such section 401(a), then such deduction shall be disallowed (as of the close of the taxable year for which it was allowed under subsection (a)).

"(2) Collection of Deficiency.—If any deduction is disallowed by reason of paragraph (1), then the periods of limitation provided in sections 6501 and 6502 on the making of an assessment and the collection by levy or a proceeding in court shall, with respect to any deficiency (including interest and additions to the tax) resulting from such a disallowance, include one year following the date on which the person acquiring the stock which results in the disallowance (in accordance with regulations prescribed by the Secretary or his delegate) notifies the Secretary or his delegate of such acquisition; and such assessment and col-
October 30, 1970

section may be made notwithstanding any provision of law or rule of law which otherwise would prevent such assessment and collection.

"(d) Members of Controlled Group.—Under regulations prescribed by the Secretary or his delegate, if a corporation is a member of a controlled group of corporations (within the meaning of section 1563), subsections (a)(2) and (c) shall be applied by treating all members of such controlled group as one corporation."

(b) The table of sections for such part VIII is amended by adding at the end thereof the following:

"Sec. 250. Certain payments to the National Railroad Passenger Corporation."

(c) The amendments made by this section shall apply to taxable years ending after the date of the enactment of this Act.

Approved October 30, 1970.
APPENDIX E

AMTRAK Reorganization Act of 1979 PL 96-73
Public Law 96-73—SEPT. 29, 1979

An Act

To amend the Rail Passenger Service Act to extend the authorization of appropriations for Amtrak for 2 additional years, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

TITLE I—AMTRAK REORGANIZATION

SHORT TITLE

SECTION 101. This title may be cited as the “Amtrak Reorganization Act of 1979”

PURPOSES

SEC. 102. Section 101 of the Rail Passenger Service Act (45 U.S.C. 502) is amended—

(1) by inserting “(a)” immediately before “The Congress”;
(2) by striking out “and” after “this purpose”;
(3) by striking out the period after “Railroad Passenger Corporation” and inserting in lieu thereof the following: “; and that rail passenger service offers significant benefits in public transportation for the safe movement of passengers with minimum energy expenditure and represents a significant national transportation asset in time of national emergency or energy shortage.”; and
(4) by adding at the end thereof the following new subsection:

“(b) The Congress further finds that—
“(1) inadequately defined goals for the Corporation have denied its board of directors an effective role in guiding the Corporation or in promoting and increasing the number of intercity rail passengers;
“(2) uncertain goals and financial commitment have discouraged the development of effective corporate management;
“(3) uncertainty arising from the lack of specific goals has made the achievement of high employee morale difficult;
“(4) State participation in subsidizing interstate rail passenger service has, for the most part, been unworkable;
“(5) lack of full cooperation by the railroad industry has impeded effective systemwide operation of passenger trains by the Corporation; and
“(6) a greater degree of cooperation is necessary among railroads, the Corporation, States with subsidized service, labor organizations, and suppliers of services and equipment to the Corporation in order to achieve a level of performance sufficient to justify additional expenditure of public funds.”.

GOALS

SEC. 103. (a) GOALS FOR AMTRAK.—The Rail Passenger Service Act (45 U.S.C. 501 et seq.) is amended by redesignating section 102 as
section 103 and by inserting after section 101 the following new section:

"SEC. 102. GOALS.

"The Congress hereby establishes the following goals for Amtrak:

"(1) Improvement of on-time performance by at least 50 per-
cent within the three-year period beginning on the date of
enactment of this section.

"(2) Implementation of schedules which provide a systemwide
average speed of at least 55 miles per hour, and which can be
adhered to with a degree of reliability and passenger comfort.

"(3) Improvement of the ratio of revenues to operating ex-
penses, with the goal of coverage of at least 44 percent of
operating expenses, excluding depreciation, from revenues by
the end of fiscal year 1982 and 50 percent by the end of fiscal year
1985.

"(4) Improvement of the feasibility of State-subsidized service
through the use of technical assistance panels to coordinate,
plan, and implement such service.

"(5) Encouragement of rail carriers to assist in improving
intercity rail passenger service.

"(6) General improvement of Amtrak’s performance through
comprehensive, systematic operational programs and employee
incentives."

(b) TECHNICAL AMENDMENT.—The heading for title I of the Rail
Passenger Service Act is amended by inserting “GOALS,” after
"PURPOSES."

DEFINITIONS

SEC. 104. Section 103 of the Rail Passenger Service Act, as redesig-
nated by this Act, is amended to read as follows:

"SEC. 103. DEFINITIONS.

"For the purposes of this Act—

"(1) ‘Amtrak’ means the National Railroad Passenger Corpora-
tion created under title III of this Act.

"(2) ‘Auto-ferry service’ means intercity rail passenger service
characterized by transportation of automobiles or recreational
vehicles and their occupants.

"(3) ‘Avoidable loss’ means the avoidable costs of providing
passenger service, less revenues attributable thereto, as deter-
mined by the Interstate Commerce Commission under the provi-
sions of section 553 of title 5, United States Code.

"(4) ‘Basic system’ means (A) prior to October 1, 1979, the
system of intercity rail passenger service designated by the
Secretary under title II and section 403(a) of this Act, and (B) on
and after October 1, 1979, the system of intercity rail passenger
service designated by the Secretary under section 4 of the
Amtrak Improvement Act of 1978 (Public Law 95–421) and
approved by the Congress, and service required to be operated
under sections 404(d) and 404(e) of this Act and under section 4(g)
of the Amtrak Improvement Act of 1978, including changes to
such system or service made by the Corporation using the Route
and Service Criteria.

"(5) ‘Center’ means the Performance Evaluation Center estab-
lished under section 305 of this Act.

"(6) ‘Commission’ means the Interstate Commerce Commissio-
“(7) ‘Corporation’ means the National Railroad Passenger Corporation created under title III of this Act.

“(8) ‘Intercity rail passenger service’ means all rail passenger service other than commuter and other short-haul service in metropolitan and suburban areas, usually characterized by reduced fare, multiple-ride and commutation tickets, and by morning and evening peak period operations.

“(9) ‘Model Program’ means a program carried out by the Corporation under section 307 or section 309 of this Act and the employee assistance program established by the Corporation.

“(10) ‘Panel’ means a Technical Assistance Panel established under section 403(b) of this Act.

“(11) ‘Rail carrier’ and ‘railroad’ mean a person providing railroad transportation for compensation.

“(12) ‘Regional transportation agency’ means an authority, corporation, or other entity established for the purpose of providing passenger service within a region.

“(13) ‘Route and Service Criteria’ means the Criteria and Procedures for Making Route and Service Decisions established pursuant to section 404(c) of this Act.

“(14) ‘Secretary’ means the Secretary of Transportation or his delegate unless the context indicates otherwise.”.

REduced FARE PROGRAM

Sec. 105. Section 305(c) of the Rail Passenger Service Act (45 U.S.C. 545(c)) is amended—

(1) by inserting “(1)” immediately after “(c)”;

(2) by adding at the end thereof the following new paragraph:

“(2)(A) Within 90 days after the date of enactment of this paragraph, the Corporation shall establish a reduced fare program for elderly and handicapped individuals.

“(B) For purposes of this paragraph—

(i) the term ‘elderly individual’ means a person who has attained the age of 65 years; and

(ii) the term ‘handicapped individual’ means any person who has a physical or mental impairment which substantially limits one or more of such person’s major life activities, has record of such an impairment, or is regarded as having such an impairment, but the term handicapped individual does not include any person who is an alcoholic or drug abuser.”

OPERATIONAL IMPROVEMENT PROGRAM

Sec. 106. Section 305 of the Rail Passenger Service Act (45 U.S.C. 545) is amended by redesignating subsections (f) through (j) as subsections (g) through (k), respectively, and by inserting after subsection (e) the following new subsection:

“(f) The Corporation shall, not later than January 1, 1981, develop and submit to the Congress and to the President a comprehensive plan for the improvement of all intercity rail passenger service provided in the basic system. The Corporation shall commence implementation of such plan as soon as practicable after all or any portion thereof is developed. Such plan shall include—

“(1) a zero-based assessment of all operating practices and implementation of changes to achieve the minimum use of employees consistent with safe operations and adequate service;

“(2) a systematic program for optimizing the ratio of train size to passenger demand;
“(3) a systematic program for trip time reduction on all trains in the basic system;
“(4) establishment of training programs to achieve on-time departures and priorities for passenger trains over freight trains en route;
“(5) adjustment of purchasing and pricing of food and beverages to achieve, as soon as practical after the date of enactment of this subsection, a continuing reduction in losses associated with food and beverage services with a goal of ultimate profitability;
“(6) cooperative marketing opportunities between the Corporation and governmental entities at all levels having intercity rail passenger service; and
“(7) cooperative marketing campaigns sponsored by the Corporation and the Department of Energy, the Federal Highway Administration, and the Environmental Protection Agency.”.

**REGIONAL MAINTENANCE PLAN**


Sec. 107. Section 305(g) of the Rail Passenger Service Act, as redesignated by this Act, is amended to read as follows:
“(g) The Corporation shall, not later than January 1, 1980, establish a Regional Maintenance Plan. Such plan shall include—
“(1) a review panel at corporate headquarters consisting of such members as the President of the Corporation shall designate;
“(2) a systemwide inventory of spare equipment parts by operational regions;
“(3) establishment of the necessary number of maintenance employees per number of cars and locomotives per region;
“(4) establishment of a systematic preventive maintenance program;
“(5) a method for periodic evaluation of maintenance costs, time lags, and parts shortages with appropriate corrective actions; and
“(6) such other elements or activities as the Corporation considers appropriate.”.

**RAILROAD POLICE**

Ante, p. 539.

Sec. 108. Section 305(j) of the Rail Passenger Service Act, as redesignated by this Act, is amended by striking out “security guards” each place it appears and inserting in lieu thereof “railroad police” and by striking out “Security guards” and inserting in lieu thereof “Railroad police”.

**BUY AMERICA PROTECTION**

Ante, p. 539.

Sec. 109. Section 305(k) of the Rail Passenger Service Act, as redesignated by this Act, is amended by redesignating paragraphs (3) and (4) as paragraphs (4) and (5), respectively, and by inserting after paragraph (2) the following new paragraph:
“(3) In addition to the exemptive authority set forth in paragraph (2), the Secretary may, upon application of the Corporation, exempt the Corporation from the requirements of paragraph (1) of this subsection with respect to the purchase of rolling stock or power train equipment if the Secretary determines that such rolling stock or power train equipment, as the case may be, cannot be purchased and delivered in the United States within a reasonable time.”.
PERFORMANCE EVALUATION CENTER

SEC. 110. Section 305 of the Rail Passenger Service Act (45 U.S.C. 545), as amended by this Act, is further amended by adding at the end thereof the following new subsection:

"(l) The Corporation shall establish a Performance Evaluation Center within the Corporation which shall have the responsibility of providing an ongoing review of operations. The Center should evaluate both short-term and long-term operational problems and make recommendations for improvement of operations. Each six months, the Corporation shall submit a report of the Center’s activities and recommendations to the appropriate authorizing committees of both Houses of Congress and to the Secretary."

ADEQUACY OF SERVICE REPORTS

SEC. 111. (a) REPORTS.—Section 305 of the Rail Passenger Service Act (45 U.S.C. 545), as amended by this Act, is further amended by adding at the end thereof the following new subsection:

"(m) For purposes of assessing the operational performance of trains, the President of the Corporation shall have the authority to direct the conductor on any Amtrak train to report to the Center any inadequacy of train operation. Adequacy of service reports required under this subsection shall be promptly transmitted to the Center. Each report shall be signed by the conductor and contain sufficient information to locate equipment or personnel failures.".

(b) REPEAL.—Section 801 of the Rail Passenger Service Act (45 U.S.C. 641) is hereby repealed.

APPLICABILITY OF OTHER LAWS

SEC. 112. (a) EXCEPTIONS TO APPLICABILITY.—Section 306(a) of the Rail Passenger Service Act (45 U.S.C. 546(a)) is amended by striking out the period at the end of paragraph (3) and inserting in lieu thereof "; and" and by adding at the end thereof the following new paragraph:

"(4) the issuance of securities or the assumption of any obligation or liability with respect to the securities of others."

(b) THROUGH ROUTES AND JOINT FARES.—Section 306(j)(2) of the Rail Passenger Service Act (45 U.S.C. 546(j)(2)) is amended by striking out "motor carrier" and inserting in lieu thereof "any domestic or international motor, air, or water carrier".

(c) PAY PERIODS AND QUALIFICATIONS.—Section 306 of the Rail Passenger Service Act (45 U.S.C. 546) is further amended by adding at the end thereof the following new subsections:

"(l) The Corporation shall not be subject to any State or local law relating to pay periods or days for payment of employees. No employee of the Corporation shall be paid less frequently than such employee is paid as of the effective date of this subsection, other than pursuant to an applicable collective bargaining agreement.

"(m) The Corporation shall be deemed to be qualified to do business in each State in which it performs any activity authorized under this Act. In connection with the performance of such activities, the Corporation shall accept service of process addressed by certified mail to the secretary of the Corporation at its principal office and place of business in Washington, District of Columbia. The Corporation shall be deemed to be a citizen of the District of Columbia for the purpose of determining the original jurisdiction of the district courts of the United States in civil actions to which the Corporation is party."
SEC. 113. Section 308(a)(1) of the Rail Passenger Service Act of 1970 is amended to read as follows:

“(a)(1) Not later than the 45th day following the end of each calendar month, the Corporation shall transmit to the Congress and release to the public the following information applicable to its operations for such calendar month:”.

UNIFORM CONTRACT

SEC. 114. Section 402 of the Rail Passenger Service Act (45 U.S.C. 548) is amended by adding at the end thereof the following new subsection:

“(g) The Corporation shall enter into a contract with rail carriers on an industrywide basis to establish rights for the operation of special or charter trains between specific routes and points anywhere in the Nation upon provision of reasonable notice (of not less than seven days) to the carriers involved in the operation of any special or charter trains, except that with respect to rail lines on which rail passenger service has not been operated for the preceding 180 days, reasonable notice under this sentence shall be notice of not less than 21 days. If the Corporation and the rail carriers are unable to reach agreement by January 1, 1981, the Commission shall, upon application by the Corporation, order rail services to be provided under this subsection and shall, consistent with just and reasonable compensation principles, determine within 180 days after such date the proper amount of compensation for the provision of such services and the proper method of prior notification of the schedule and routing of a special or charter train by the Corporation.”

NEW SERVICE

SEC. 115. ROUTE ADDITIONS.—Section 403(a) of the Rail Passenger Service Act (45 U.S.C. 563(a)) is amended to read as follows:

“(a) Except as otherwise provided in this Act, after October 1, 1979, all route additions shall be in accordance with the Route and Service Criteria.”.

(b) SUBSIDIZED SERVICE.—Section 403(b) of the Rail Passenger Service Act (45 U.S.C. 563(b)) is amended to read as follows:

“(b(XA) Any State or group of States, or any regional or local agency, may submit an application to the Corporation requesting the institution of rail passenger service in addition to that service provided in the basic system.

“(B) An application for rail passenger service under this subsection shall be submitted at least 180 days prior to the beginning of the fiscal year in which such service is to be operated, except that an application for service to be operated in the fiscal year ending September 30, 1980, shall be submitted no later than the 60th day following the beginning of such fiscal year.

(C) Each application by a State or agency for rail passenger service under this subsection shall contain—

“(i) adequate assurances by such State or agency that it has sufficient resources to meet its share of the cost of such service for the period such service is to be provided;

“(ii) a market analysis acceptable to the Corporation to ensure that there is adequate demand to warrant such service;

“(iii) a statement by such State or agency that it agrees to provide 20 percent of the solely related costs of such service in...
the first year of operation, 35 percent of such costs in the second year of operation, and 50 percent of such costs in each year of operation thereafter; and

(iv) a statement by such State or agency that it agrees to provide, in each year of operation of such service, 50 percent of the associated capital costs of operating such service.

“(2)(A) The Corporation shall review each application submitted by a State or agency for the institution of service under this subsection and shall convene a Technical Assistance Panel to consider such application if the Corporation determines that—

(i) the application complies with requirements of paragraph (1)(C) of this subsection; and

(ii) there is a reasonable probability that the service requested can be provided with the resources available to the Corporation.

“(B) The Corporation shall make its determinations under this paragraph, and convene a panel if appropriate, at least 150 days prior to the beginning of the fiscal year in which the service requested is to be operated, except that with respect to an application for service to be operated in the fiscal year ending September 30, 1980, the Corporation shall make its determinations, and convene a panel if appropriate, no later than 30 days after the date such application is submitted.

“(C) Any application submitted by a group of States shall be considered in the same manner as an application submitted by a single State, and not on the basis of whether each State that is a party to such application meets the requirements of paragraph (1)(C) of this subsection.

“(3)(A) Each panel convened by the Corporation to consider an application shall be composed of—

(i) a State rail planning official from each State that is a party to the application;

(ii) a representative of the Corporation;

(iii) a representative from a railroad labor organization representing operating crafts of employees; and

(iv) a representative from a railroad labor organization representing nonoperating crafts of employees.

“(B) The Corporation shall submit to each panel data projecting the solely related costs and associated capital costs of operating the service under consideration. Each panel shall, no later than 90 days after the date it is convened, consider and make recommendations to the Corporation with respect to—

(i) appropriate measures for minimizing such costs, including measures such as—

(I) the assumption by the applicant State or agency of certain responsibilities in connection with the operation of the service under consideration; and

(II) a reduction in the labor costs of operating such service; and

(ii) if more than one State is a party to the application, the appropriate manner for allocating such costs among the applicant States.

“(4)(A) After taking into account the recommendations of the panel with respect to rail passenger service requested by a State or agency under this subsection, the Corporation shall enter into an agreement with such State or agency for the institution of such service, in accordance with the funding formula set forth in paragraph (1)(C) of this subsection, if the Corporation determines that such service can be provided with resources available to the Corporation.
"(B) An agreement entered into pursuant to this section may by mutual agreement be renewed for one or more additional terms of not more than 2 years.

"(C) If more than one application is made for service and all applications are consistent with the requirements of this subsection, but all the services applied for cannot be provided with the available resources of the Corporation, the Board of Directors shall decide in its discretion which application or applications best serve the public interest and can be provided with the available resources of the Corporation, except that a proposal for State support of a service deleted from the basic system in effect prior to October 1, 1979, or the basic system in effect after such date, shall be given preference.

"(5) Prior to instituting any fare increase that applies to service provided under this subsection and that represents an increase of more than 5 percent over a 6-month period, the Corporation shall consult with and obtain the views of the appropriate officials of each State to be affected by such fare increase. The Corporation shall provide the officials of each such State with an explanation of the circumstances warranting the proposed fare increase (such as the unique costs of or demand for the services involved).

"(6)(A) Federal funds available for expenditure under this subsection shall not be in substitution for the average amount of State and local funds expended for the operation of rail services under this subsection in the State for the two fiscal years preceding the fiscal year for which the funds are made available.

"(B) If service provided under this subsection on the date of enactment of the Amtrak Reorganization Act of 1979 is terminated by a State or agency and such State or agency subsequently decides to resume such service, the Corporation shall agree to provide funding at the level provided under the contract in effect on such date of enactment.

"(6A) Any funds provided by the Corporation under an agreement with an agency pursuant to this subsection which are allocated for associated capital costs and which are not expended during the fiscal year for which they are provided shall remain available until expended.

"(B) An agency entering into an agreement with the Corporation for the operation of service under this subsection shall be entitled to reimbursement for staff services in an amount equal to 1½ percent of the operating losses and associated capital costs.

"(C) The Board of Directors shall establish the basis for determining the solely related costs and associated capital costs of service operated under this subsection, and the total revenue from such service.

"(8) Not more than five percent of all revenues generated by each particular route operated under the authority of this subsection shall be dedicated to advertising and promotion of such service on a local level.

(c) REPEAL.—Section 403(c) of the Rail Passenger Service Act (45 U.S.C. 563(c)) is repealed.

(d) COMMUTER SERVICE.—Section 403(d) of the Rail Passenger Service Act (45 U.S.C. 563(d)) is amended—

(1) by inserting "(1)") immediately before "The Corporation";

(2) by inserting immediately after the first sentence thereof the following: "An agreement made pursuant to this section may by
(3) by adding at the end thereof the following new paragraphs:

"(2) Any rail passenger service which is operated by the Corporation on January 1, 1979, and which constitutes commuter rail passenger service as defined in paragraph (1) of this subsection shall, until April 1, 1981, continue to be operated by the Corporation and funded in accordance with the method of funding in effect for that service on January 1, 1979. In addition, any rail passenger service which (A) is operated by the Consolidated Rail Corporation, (B) is the subject of an application for discontinuance filed with the Commission before July 15, 1979, and (C) constitutes commuter rail passenger service as defined in paragraph (1) of this subsection shall, until April 1, 1981, be operated by the Corporation and funded by the Corporation in the same manner as service operated under the preceding sentence.

"(3) The Corporation shall, until April 1, 1981, continue to accept commuter based fares for any rail passenger service which it operates and for which such fares are accepted on January 1, 1979. Nothing in this paragraph shall be construed as prohibiting the Corporation or any other railroad from increasing the amount of any fare charged for rail passenger service."

SERVICE CHANGES

SEC. 116. (a) SERVICE CHANGES.—Section 404(b) of the Rail Passenger Service Act (45 U.S.C. 564(b)) is amended to read as follows:

"(b) After October 1, 1979, all route discontinuances by the Corporation shall be in accordance with the Route and Service Criteria."

(b) TECHNICAL AMENDMENT.—Section 404 of the Rail Passenger Service Act (45 U.S.C. 564) is amended by striking out "SEC. 404. DISCONTINUANCE OF SERVICE." and inserting in lieu thereof "SEC. 404. SERVICE CHANGES."

APPLICATION OF ROUTE AND SERVICE CRITERIA

Sec. 117. Section 404(c) of the Rail Passenger Service Act (45 U.S.C. 564(c)) is amended by adding at the end thereof the following new paragraph:

"(4)(A) The Corporation shall conduct an annual review of each long-distance route in the basic system to determine if such route meets the criteria set forth in paragraph (1) of subsection (d) of this section, as adjusted to reflect constant 1979 dollars. If the Corporation determines, on the basis of such review, that a route fails to meet the criteria set forth in such paragraph, the Corporation shall evaluate such route under the Route and Service Criteria. If the Corporation determines, on the basis of such evaluation, that such route fails to meet the Route and Service Criteria, the Corporation shall discontinue the operation of rail passenger service over such route.

"(B) The annual review conducted by the Corporation under subparagraph (A) shall include an evaluation of the potential market demand for, and the cost of providing service on, portions or segments of long-distance routes, and the potential market demand for, and cost of providing service on, alternative routings. The Corporation shall transmit the results of the annual review to each House of the Congress and to the Secretary of Transportation."
EXCEPTIONS TO APPLICABILITY OF ROUTE AND SERVICE CRITERIA

SEC. 118. Section 404(c) of the Rail Passenger Service Act (45 U.S.C. 564(c)), as amended by this Act, is further amended by adding at the end thereof the following new paragraph:

“(5) The Route and Service Criteria shall not apply to—

(A) decisions of the Corporation to increase or, where construction schedules, other temporary disruptive factors, or seasonal fluctuations in ridership so warrant, to decrease frequency of service on existing routes or portions of existing routes or on routes where an additional frequency of service is being tested; and

(B) rerouting of service between major population centers on existing routes.”.

ADDITIONAL QUALIFYING ROUTES

SEC. 119. Section 404 of the Rail Passenger Service Act (45 U.S.C. 564) is amended by adding at the end thereof the following new subsections:

“(d)(1) Where reductions in operating expenses can be obtained, the Corporation shall operate rail passenger service over any long distance route which is recommended for discontinuance by the Secretary pursuant to section 4 of the Amtrak Improvement Act of 1978, with or without any restructuring of such route to serve major population centers as end points or principal intermediate points, in order to maintain a national intercity rail passenger system, if—

(A) the short term avoidable loss per passenger mile on such route, as calculated by the Corporation and projected for the fiscal year ending September 30, 1980, is not more than 7 cents per passenger mile; and

(B) the passenger mile per train mile on such route, as calculated by the Corporation and projected for the fiscal year ending September 30, 1980, is not less than 150.

Short term avoidable loss per passenger mile calculated by the Corporation for purposes of this subsection shall be based upon consistently defined factors for all types of routes, and such short term avoidable loss and passenger mile per train mile shall be calculated in the same manner for all routes. The Corporation shall make its calculations under this subsection on the basis of the most recent available statistics for a 90-day period, except that the Corporation may also utilize historical data (such as seasonal fluctuations in ridership) as long as such data is adjusted to reflect the most recent available statistics. The Corporation shall, no later than 30 days after the effective date of this subsection, submit a report to the Interstate and Foreign Commerce Committee of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the methodology, equations, factors used, assumptions, and results in connection with the calculation of short term avoidable loss per passenger mile and passenger mile per train mile under this subsection.

“(2) Where reductions in operating expenses can be obtained, the Corporation shall operate rail passenger service over any short-distance route which is recommended for discontinuance by the Secretary pursuant to section 4 of the Amtrak Improvement Act of 1978 with or without any restructuring of such route to serve major population centers as end points or principal intermediate points, in order to maintain a national intercity rail passenger system, if—
“(A) the short-term avoidable loss per passenger mile on such route, as calculated by the Corporation and projected for the fiscal year ending September 30, 1980, is not more than 9 cents per passenger mile; and

“(B) the passenger mile per train mile, as calculated by the Corporation and projected for the fiscal year ending September 30, 1980, is not less than 80.

“(e)(1) In order to preserve regional balance in the national intercity rail passenger system and to ensure that long-distance routes recommended for discontinuance by the Secretary pursuant to section 4 of the Amtrak Improvement Act of 1978 which provide service to regions with few population centers in a large geographic area have equal opportunity to qualify for continued operation, the Corporation shall operate a long-distance route in each section of the United States (with sections being determined by dividing the United States into four quadrants) if—

“(A) service is not maintained on any long-distance route in that section under the criteria set forth in subsection (d)(1) of this section; and

“(B) the Corporation determines that (i) a long-distance route exists in that section which has shown and will show improvements in performance under the criteria, set forth in subsection (d)(1) of this section, and (ii) such route shows potential, under such criteria, to warrant maintenance in the system.

“(2) The Corporation shall not continue to operate any route under this subsection if service is provided on a significant part of that route by any other route.

“(3) Service operated on a route under this subsection shall continue to be operated after October 1, 1981, only if such route meets the criteria set forth in subsection (d)(1) of this section: Provided, That the Corporation shall continue to operate the Inter-American train to the Mexican border if that train meets the criteria set forth above.

“(f) For the purpose of this section and section 4 of the Amtrak Improvement Act of 1978, the reference to Tampa in table 4–1 at page 4–7 of the Secretary’s Final Report to Congress on the Amtrak Route System, dated January 1978, shall be deemed to mean Saint Petersburg.

“(g) Notwithstanding any other provisions of this Act (including the requirements of section 403(d)), the Corporation is authorized, to the extent available resources permit, to operate short-haul trains, on a demonstration basis for the purpose of determining the feasibility and benefits of such services, on additional routes of 200 miles or less which link two or more major metropolitan areas.”.

FREE OR REDUCED RATE TRANSPORTATION OF RAILROAD EMPLOYEES

SEC. 120. (a) Reimbursement Rate.—Section 405(f) of the Rail Passenger Service Act (45 U.S.C. 565(f)) is amended by striking out “The Corporation shall be reimbursed” and all that follows through “in accordance with the agreements.” and inserting in lieu thereof the following: “Unless the Corporation and a railroad or group of railroads agree on a different basis for compensation, the Corporation shall, during the 2-year period beginning on the effective date of the Amtrak Reorganization Act of 1979, be reimbursed by each railroad at the rate of 25 percent of the systemwide average monthly yield per revenue passenger mile. Reimbursement at this rate is in lieu of any charges for liability incident to travel of railroad employees eligible for free or reduced-rate transportation and any other costs incurred by the Corporation in connection with free or reduced-rate transpor-
ation and any other costs incurred by the Corporation in connection with free or reduced-rate transportation. Nothing in this subsection shall preclude the Commission from ordering retroactive relief in any proceeding instituted or reopened after October 1, 1981.”.

(b) REPORT.—The Comptroller General shall conduct a study of the free or reduced-rate transportation provided to railroad employees by the National Railroad Passenger Corporation under section 405(f) of the Rail Passenger Service Act. Within 180 days after the effective date of this Act, the Comptroller General shall submit a report to the Congress and to the Interstate Commerce Commission setting forth recommendations regarding the appropriate means for reimbursing the Corporation for the cost of providing such transportation services, taking into account the value of the services being provided.

RETENTION AND MAINTENANCE OF FACILITIES

Sec. 121. Title IV of the Rail Passenger Service Act (45 U.S.C. 561 et seq.) is amended by adding at the end thereof the following new section:

“SEC. 406. RETENTION AND MAINTENANCE OF FACILITIES.

(a) No facilities of a railroad (including a regional transportation agency) which are used in the operation of rail passenger services by the Corporation on February 1, 1979, shall be downgraded or disposed of without obtaining the prior approval of the Secretary under this section.

(b) Whenever any railroad intends to downgrade or dispose of a facility referred to in subsection (a) of this section which is not currently being used in the operation of services by the Corporation, such railroad shall first notify the Corporation of its intention to take such action. If, within 60 days after receipt by the Corporation of such notice, the Corporation and such railroad are not able to enter into an agreement for the retention or maintenance of such facility or for the conveyance to the Corporation of such facility or an interest therein, the railroad may apply to the Secretary for approval of the downgrading or disposal of the facility.

(c) (1) If the Corporation does not object to an application of a railroad to downgrade or dispose of a facility within 30 days after the date such application is submitted, the Secretary shall promptly approve such application.

(2) If the Corporation makes a timely objection to such an application, the Secretary shall, within 180 days after the date of such objection, determine the costs which the railroad could avoid if it were not required to maintain or retain the facility in the condition requested by the Corporation. If the Corporation does not, within 60 days after the date of the Secretary's determination, agree to pay such avoidable costs to the railroad, the Secretary shall approve such application.

(d) (1) In electing whether to enter into an agreement pursuant to this section to pay a railroad the avoidable costs of maintaining or retaining a facility, the Corporation shall consider—

(A) the potential importance of restoring rail passenger service on the route on which such facility is located;

(B) the market potential of such route;

(C) the availability, adequacy, and energy efficiency of alternate modes or alternate rail lines for providing passenger transportation to or near the points which would be served by the route;
“(D) the extent to which major population centers would be served by such route;
“(E) the extent to which the provision of service over such route would encourage the expansion of a national intercity rail passenger system; and
“(F) the possibility of increased ridership on lines of railroad connecting with such route.
“(2)(A) In order to prepare for a valid and timely analysis of a facility, after a railroad gives notice pursuant to this section that it intends to downgrade or dispose of such facility, the Corporation shall conduct a survey of population centers with railroad passenger service facilities and shall update such survey from time to time as may be necessary or appropriate. Within 90 days after the date of enactment of this section, the Corporation shall take steps to prepare a survey plan which shall provide for—
“(i) a target completion date for the survey of population centers of not later than 360 days after the ninetieth day after such date of enactment; and
“(ii) a system of collection, compilation, and storage of information gathered pursuant to the survey according to geographic region and according to whether a facility would be part of a short- or long-haul route.
“(B) The survey should facilitate an analysis of—
“(i) ridership potential by ascertaining existing travel patterns or changing travel patterns which would maximize efficiencies of railroad passenger service;
“(ii) the quality of service of competitors or likely competitors;
“(iii) the likelihood of the Corporation offering service at a competitive fare;
“(iv) opportunities to target advertising and fares to potential classes of riders;
“(v) economic characteristics of railroad passenger service associated with a facility and the extent to which such characteristics are consistent with sound economic principles of short- or long-haul railroad operations; and
“(vi) the feasibility of applying effective internal cost controls to a facility and the route which the facility would serve in order to improve over time the ratio of transportation expenses, excluding maintenance of track, structure, and equipment and depreciation, to passenger revenue.
“(e) For purposes of this section—
“(1) the term ‘facilities’ means railroad tracks, rights-of-way, fixed equipment and facilities, and real property appurtenant thereto, and includes signal systems, passenger station and repair tracks, station buildings, platforms, and adjunct facilities such as water, fuel, steam, electric, and air lines;
“(2) the downgrading of a facility means a reduction in track classification as specified in the Federal Railroad Administration track safety standards (49 C.F.R. 213), or any other change in such facilities which may increase the time required for a passenger train to operate over the route on which such facility is located; and
“(3) approval of downgrading or disposal under this section shall not be construed as relieving a railroad from compliance with its other common carrier or legal obligations with respect to a facility.”
AUTHORIZATION OF APPROPRIATIONS

Sec. 122. (a) Authorization.—Section 601 of the Rail Passenger Service Act (45 U.S.C. 601) is amended by adding at the end thereof the following new subsection:

"(b)(1) There are authorized to be appropriated to the Secretary for the benefit of the Corporation—

"(A) for the payment of operating expenses, not to exceed $630,900,000 for the fiscal year ending September 30, 1980, and not to exceed $674,900,000 for the fiscal year ending September 30, 1981, of which not less than $1,200,000 for the fiscal year ending September 30, 1980, and $1,000,000 for the fiscal year ending September 30, 1981, shall be available for the cost of Model Programs;

"(B) for the payment of the costs of capital acquisition or improvements to the basic system, including the payment of expenses for the retention and maintenance of facilities under section 406 of this Act, not to exceed $203,000,000 for the fiscal year ending September 30, 1980, not to exceed $244,000,000 for the fiscal year ending September 30, 1981, and not to exceed $254,000,000 for the fiscal year ending September 30, 1982;

"(C) for the payment of operating and capital expenses of rail passenger service provided pursuant to section 403(b) of this Act, not to exceed $23,800,000 for the fiscal year ending September 30, 1980, not to exceed $29,000,000 for the fiscal year ending September 30, 1981, and not to exceed $30,000,000 for the fiscal year ending September 30, 1982;

"(D) for labor protection payments required pursuant to section 405 of this Act, not to exceed $30,000,000,000 for the fiscal year ending September 30, 1980, not to exceed $12,000,000 for the fiscal year ending September 30, 1981, and not to exceed $20,000,000 for the fiscal year ending September 30, 1982; and

"(E) for the payment of the principal of obligations (other than leases) of the Corporation which are guaranteed by the Secretary pursuant to section 602 of this Act, not to exceed $25,000,000 for the fiscal year ending September 30, 1980, not to exceed $25,000,000 for the fiscal year ending September 30, 1981, and not to exceed $25,000,000 for the fiscal year ending September 30, 1982.

"(2) Funds appropriated pursuant to this section shall be made available to the Secretary during the fiscal year for which appropriated, except that appropriations for capital acquisitions and improvements may be made in an appropriations Act for a fiscal year preceding the fiscal year in which the appropriation is to be available for obligation. Funds appropriated are authorized to remain available until expended. Appropriated sums shall be paid by the Secretary to the Corporation for expenditure by it in accordance with (A) the Secretary's budget request as approved or modified by Congress at the time of appropriation, and (B) guidelines established by the Secretary. Payments by the Secretary to the Corporation of appropriated funds shall be made no more frequently than every 90 days, unless the Corporation, for good cause, requests more frequent payment before the expiration of any 90-day period.
"(3) Funds appropriated for capital grants pursuant to this subsection shall be paid to the Corporation in each fiscal quarter, and such grants may be used by the Corporation for temporary reduction of outstanding loan balances, including loans guaranteed by the Secretary pursuant to section 602 of this Act."

(b) TECHNICAL AMENDMENTS.—(1) Section 601 of the Rail Passenger Service Act (45 U.S.C. 601) is amended—
(A) by striking out “(a)(1)” and inserting in lieu thereof “(a)”; and
(B) by striking out “(2) Funds appropriated for” and all that follows through “of this Act”.
(2) Section 602(d) of the Rail Passenger Service Act (45 U.S.C. 602(d)) is amended by striking out “clause (3) of section 601(a)” and inserting in lieu thereof “section 601(a)(3) or section 601(b)(1)(E)”.

EMPLOYEE COMPENSATION AND INCENTIVE COMMISSION

SEC. 123. Title VIII of the Rail Passenger Service Act (45 U.S.C. 641 et seq.) is amended by adding at the end thereof the following new section:

"SEC. 808. EMPLOYEE COMPENSATION AND INCENTIVE COMMISSION."

"(a) The Secretary shall, within 30 days after the date of enactment of this section, name a five-member Employee Compensation and Incentive Commission. The members of the Commission shall be selected on the basis of their knowledge of the railroad industry.
(b) The Employee Compensation and Incentive Commission Functions.
shall—
(1) evaluate the salary paid officers of Amtrak in relation to Amtrak’s ability to attract and maintain qualified officers; and
(2) after consultation with the Corporation and railroad labor organizations, develop a program for improving Amtrak employee incentive and morale, including measures such as the institution of recognition and financial awards for outstanding employees.
(c) The Employee Compensation and Incentive Commission shall, no later than March 1, 1980, submit recommendations to the Board of Directors of the Corporation with respect to the matters referred to in subsection (b) of this section. The Board of Directors shall, within 90 days after the date of submission, notify the Congress of (1) any action it plans to take to implement the Commission’s recommendations, and (2) any proposals for additional legislation which the board considers necessary."

MODEL PROGRAMS

SEC. 124. Title VIII of the Rail Passenger Service Act (45 U.S.C. 641 et seq.), as amended by this Act, is further amended by adding at the end thereof the following new section:

"SEC. 809. MODEL PROGRAMS."

"Not later than October 1, 1979, the Corporation shall, in consultation with railroad labor organizations, develop and implement a Job Placement Program for employees who will be affected by the reduction in work force caused by the implementation of the Secretary’s recommendations for the restructuring of routes. Such program shall emphasize the facilitation of reemployment of employees dismissed or dislocated as a result of corporate restructuring. In
carrying out its responsibilities under this section, the Corporation shall attempt to reduce labor protection costs and maximize utilization of the employment skills of affected employees. Such program may include job counseling, placement advertising, skills improvement courses, and such other activities as the Corporation considers appropriate to facilitate reemployment of affected employees within or outside the rail industry.”

STATE TAXATION STUDY

Sec. 125. Title VIII of the Rail Passenger Service Act (45 U.S.C. 641 et seq.), as amended by this Act, is further amended by adding at the end thereof the following new section:

45 USC 649.

“SEC. 810. STATE TAXATION STUDY. “The Secretary shall conduct a study of the payment of taxes by the Corporation to State and local governments, including the payment of property taxes, sales taxes, gross revenue taxes, fuel taxes, licenses, and other user fees, and any other taxes paid by the Corporation to such governments, and shall make recommendations to the Congress no later than January 1, 1980, concerning the advisability of relieving the Corporation, either in whole or in part, of its obligation to make such payments. In conducting such study, the Secretary shall consider—

“(1) the requirement that the Corporation be operated and managed as a for-profit corporation;
“(2) the certainty that the Corporation will need substantial Federal subsidies for the foreseeable future;
“(3) the demand by States and localities for continued and increased federally funded rail passenger service;
“(4) the benefit to States and localities of rail passenger service directly funded by the Federal Government; and
“(5) the importance to the Nation of maintaining an efficient and reliable national rail transportation system.”

REPORT ON REVENUES AND EXPENSES

Sec. 126. Title VIII of the Rail Passenger Service Act (45 U.S.C. 641 et seq.), as amended by this Act, is further amended by adding at the end thereof the following new section:

45 USC 650.

“REVENUE REPORT “Sec. 811. Within 60 days of the end of each fiscal year beginning with fiscal year 1981, the Corporation shall report to the Congress on the ratio of revenue to operating expenses on all routes in the basic system. As part of such report, the Corporation shall specifically identify those train routes which did not achieve a 50 percent revenue-to-expense ratio, and the Corporation shall include statements explaining the reasons which prevented such ratios from being achieved.”

IMPLEMENTATION OF THE NEW ROUTE PLAN

Sec. 127. Section 4(g) of the Amtrak Improvement Act of 1978 (Public Law 95-421) is amended by striking out the period at the end thereof and inserting in lieu thereof the following: “Provided, however, That implementation of the Secretary’s recommendations which require (1) operation over rail lines not used in intercity passenger service upon the date of approval thereof; (2) use of new
facilities; or (3) new labor agreements, may be deferred by the Corporation until any necessary capital improvements in such lines or facilities, or required labor agreements, are made, to permit service that is equivalent or improved service and is consistent with the goals contained in subsection (a) of this section: And provided further, That, notwithstanding any other provision of law, pending deferred implementation of such recommendations, the Corporation shall provide substitute service over existing routes which are recommended for restructuring in whole or in part and over other feasible existing routes, without reference to the Route and Service Criteria. Substitute service provided over an existing route under this paragraph shall continue to be operated after October 1, 1981, only if such route meets the criteria set forth in section 404(d)(1) of the Rail Passenger Service Act, as adjusted to reflect constant 1979 dollars; but excepting any short-haul route concentrating on commuter ridership.'.

INTERMODAL TERMINAL PROGRAM

SEC. 128. The first sentence of section 4(iX5) of the Department of Transportation Act (49 U.S.C. 1653(iX5)) is amended by striking out "within two years following the approval of the application for Federal financial assistance under this subsection" and inserting in lieu thereof "within such time period as the Secretary establishes".

GAO STUDY OF DEBT ELIMINATION

SEC. 129. Within 180 days after the effective date of this Act, the Comptroller General shall submit a report to the Congress recommending appropriate means for the National Railroad Passenger Corporation to eliminate the obligations of the Corporation that are guaranteed under section 602 of the Rail Passenger Service Act. In developing such recommendations, the Comptroller General shall consider (1) the feasibility of converting such obligations into stock issued by the Corporation, (2) the likelihood of obligation retirement from profits of the Corporation, (3) the ability of the Corporation to continue to carry its debt service within the context of operating subsidies, fairly and accurately reflecting current operating costs, and (4) the extent to which debt incurred by the Corporation prior to the effective date of this Act should be recognized as unrecoverable.

SERVICE ON PORTION OR SEGMENT OF DISCONTINUED ROUTES

SEC. 130. The National Railroad Passenger Corporation shall conduct an evaluation of the possibility of providing rail passenger service on a portion or segment of any route over which service is discontinued on or after October 1, 1979. Such evaluation shall include an examination of the potential market demand for rail passenger service over a portion or segment of any such discontinued route, and the cost of providing such service. The Corporation shall, no later than February 15, 1980, submit a report to both Houses of the Congress and to the Secretary of Transportation setting forth its findings under this section.

MAIL AND EXPRESS REVENUES

SEC. 131. The National Railroad Passenger Corporation shall, in conjunction with the United States Postal Service, determine those mail transportation requirements which can be met by the Corporation and shall develop and submit to the Congress, no later than April
30, 1980, a report setting forth recommendations designed to enable
the Corporation to achieve maximum levels of mail carriage and
revenues derived from such carriage. Such report shall include the
following considerations:
   (1) the modification of existing facilities to handle mail and
express more efficiently;
   (2) the acquisition of modern materials handling equipment
and rolling stock;
   (3) optimum scheduling;
   (4) trains devoted exclusively to mail carriage;
   (5) staffing and promotional requirements; and
   (6) proposals for such legislative action as may be appropriate.

.AMTRAK ROUTE ALLOCATION STUDY

Report to
Congress.
45 USC 545 note.

Definitions.

SEC. 132. (a) COST ALLOCATION REPORT.—(1) Not later than April 30,
1980, the President of the National Railroad Passenger Corporation
shall submit a report to the Congress on the feasibility of establishing
a system of uniform cost allocation for the Corporation which would
include—
   (A) the avoidable cost by route;
   (B) the revenue (including mail and State subsidies, if any) by
route;
   (C) the fully allocated cost by route;
   (D) the number of passengers carried by route;
   (E) the avoidable profit or loss by route;
   (F) the fully allocated profit or loss by route;
   (G) the profit or loss per passenger by route; and
   (H) the profit or loss by revenue passenger mile.

(b) PROFIT AND LOSS REPORT.—(1) The Corporation shall prepare
and submit to the Committee on Commerce, Science, and Transporta-
tion and the Committee on Appropriations of the Senate and the
Committee on Interstate and Foreign Commerce and the Committee
on Appropriations of the House of Representatives not later than
April 30, 1980, a report containing—
   (A) a profit and loss table by route for the upcoming fiscal year,
assuming a 50 percent Government reimbursement of the fully
allocated losses experienced by each such route; and
(B) the average ticket subsidy required to show a systemwide public service profit (above and beyond such 50 percent Government reimbursement) for the upcoming fiscal year.

(2) Such reports shall be based on the best possible data available to the Corporation including, but not limited to, historical ridership trends, marketing studies, general economic conditions, ticket pricing policies, levels of services and equipment availability among other factors.

(3) For the purposes of this section, the term "public service profit" means the profit or loss experienced on each route after the Government subsidies (both operating and ticket) are added to such route's revenues.

TITLE II—AMENDMENTS TO THE REGIONAL RAIL REORGANIZATION ACT OF 1973

AUTHORIZATION OF APPROPRIATIONS

SEC. 201. Section 214(c) of the Regional Rail Reorganization Act of 1973 (45 U.S.C. 724(c)) is amended to read as follows:

"(c) ASSOCIATION.—For the fiscal year ending September 30, 1980, there are authorized to be appropriated to the Association for purposes of carrying out its administrative expenses under this Act such sums as are necessary, not to exceed $28,500,000. Sums appropriated under this subsection are authorized to remain available until expended."

REPORT ON SPECIAL COURT PROCEEDINGS

SEC. 202. Section 202(e) of the Regional Rail Reorganization Act of 1973 (45 U.S.C. 712(e)) is amended by adding at the end thereof the following new paragraphs:

"(3) The Association shall transmit to the Congress, no later than 30 days after the end of each fiscal quarter, a report with respect to the proceedings before the special court to determine the valuation of rail properties conveyed to the Corporation under section 303 of this Act. Each such report shall include—

(A) a detailed accounting of the Federal funds expended during such quarter in connection with such proceedings, and the purposes for which such funds were expended;

(B) an explanation of the status of such proceedings, including the prospects for settlement or conclusion; and

(C) an identification of which responsibilities in connection with such proceedings are being carried out directly by the Association, and which are being carried out by contract with private organizations"

TRANSFER OF FUNCTIONS; MONITORING

Sec. 203. Section 202 of the Regional Rail Reorganization Act of 1973 (45 U.S.C. 712) is amended by adding at the end thereof the following new subsections:

"(h) TRANSFER OF LITIGATION.—No later than March 1, 1980, the Association and the Attorney General of the United States shall develop and submit to the Congress a feasibility study for the transfer, to the appropriate department or agency of the Federal Government, of all responsibility for representing the United States in the proceedings before the special court to determine the valuation
of rail properties conveyed to the Corporation under section 303 of this Act.

"(i) Transfer of Other Functions.—No later than March 1, 1980, the Association and the Secretary of Transportation shall develop and submit to the Congress a feasibility study for the transfer of all functions of the Association, other than those referred to in subsection (h) of this section, to the appropriate department or agency of the Federal Government, including the abolition of those functions which will no longer be necessary.

"(j) Monitoring of Contractors.—The Board of Directors of the Association shall adopt procedures to insure (1) that contractors, including law firms, provide reports containing written verification of tasks assigned, work performed, time worked, and costs incurred, including periodic status reports on work performed, (2) that such reports are audited by the Association, (3) that no funds are paid to contractors without written reports complying with the requirements of this subsection, and (4) that the Association applies such procedures uniformly to all contractors."

INSURANCE COVERAGE

SEC. 204. (a) Payment of Premiums and Benefits.—Section 303(b)(6)(B) of the Regional Rail Reorganization Act of 1973 (45 U.S.C. 743(b)(6)(B)) is amended by striking out the first and second sentences and inserting in lieu thereof the following:

"(B) The Corporation shall, through the purchase of insurance or otherwise, maintain in effect any medical insurance coverage or so much of any life insurance coverage that does not exceed in death benefits an amount equal to twice the employee’s annual salary at the time of retirement or $60,000, whichever is lower, which coverage was maintained by a railroad in reorganization in the region immediately prior to April 1, 1976, and which provides insurance benefits to employees who retired, prior to April 1, 1976, from service with such a railroad. With respect to any such employee whose medical or life insurance coverage lapsed after April 1, 1976, due to nonpayment of premiums, the Corporation shall—"

"(i) through the purchase of insurance or otherwise, provide medical insurance benefits or life insurance benefits at the same level as were provided by the employer railroad in reorganization and in effect with respect to such employees immediately prior to April 1, 1976, except that the life insurance benefits so provided shall not exceed in death benefits an amount equal to twice the employee’s annual salary at the time of retirement or $60,000, whichever is lower; and

"(ii) assume and pay any claim for such employee (or his personal representative) for any such insurance benefits, if—"

"(I) such claim arose during the period beginning April 1, 1976, and ending on the date insurance coverage is provided pursuant to clause (i) of this subparagraph;

"(II) such benefits were not paid by an insurer solely because of the lapse of the insurance coverage during such period,

except that such death benefits shall not be paid for any such employee in excess of an amount equal to twice the employee’s annual salary at the time of retirement or $60,000, whichever is lower."

(b) Amendments to Section 211(h).—(1) Section 211(h)(1)(A)(viii) of the Regional Rail Reorganization Act of 1973 (45 U.S.C. 741(h)(1)(A)(viii)) is amended to read as follows:
“(viii) amounts required to provide adequate funding for continuation, by the Corporation, of medical and life insurance coverage and benefits for retired employees of railroads in reorganization as required and limited by section 303(b)(6)(B) of this Act.”.

(2) Section 211(h)(6) of the Regional Rail Reorganization Act of 1973 (45 U.S.C. 741(h)(6)) is amended—

(A) by inserting “(A)” immediately before “Notwithstanding”;

(B) by redesignating subparagraphs (A), (B), and (C) as clauses (i), (ii), and (iii), respectively, and redesignating clauses (i) and (ii) as subclauses (I) and (II), respectively; and

(C) by adding at the end thereof the following new paragraph:

“(B) The Association shall have a direct claim, as a current expense of administration of the estate of the railroad in reorganization whose obligations were paid with the proceeds of loans forgiven under this paragraph, equal to the amount by which the loans, plus interest, have been forgiven. Such direct claim shall not be subject to any reduction by way of setoff, cross-claim, or counterclaim which the estate of such railroad in reorganization may be entitled to assert against the Corporation, the National Railroad Passenger Corporation, the Association, or the United States. The direct claim of the Association under this paragraph shall be prior to all other administrative claims of the estate of the railroad in reorganization, except claims arising under trustee’s certificates or from default on the payment of such certificates.”

TITLE III—OFFICE OF RAIL PUBLIC COUNSEL

AUTHORIZATION OF APPROPRIATIONS

Sec. 301. Section 10388 of title 49, United States Code, is amended to read as follows:

“§ 10388. Authorization of appropriations

There is authorized to be appropriated to the Office of Rail Public Counsel to carry out this subchapter not to exceed $1,200,000 for the fiscal year ending September 30, 1980.”

TITLE IV—AMENDMENTS TO THE RAILROAD REVITALIZATION AND REGULATORY REFORM ACT OF 1976

EXTENSION OF FINANCIAL ASSISTANCE PROGRAM

Sec. 401. Sections 505(e), 507(a), 507(d), and 509 of the Railroad Revitalization and Regulatory Reform Act of 1976 (45 U.S.C. 825(e), 827(a), 827(d), and 829) are amended by striking out “September 30, 1979” each place it appears and inserting in lieu thereof “September 30, 1980”
TITLE V—EFFECTIVE DATES

EFFECTIVE DATES

SEC. 501. (a) Except as provided in subsection (b), the provisions of this Act shall take effect on October 1, 1979.

(b) The amendments made by section 204 of this Act shall be effective as of the date of enactment of Public Law 95-597.

Approved September 29, 1979.
APPENDIX F

Phases of the AMTRAK Route System


II MAP 2: "Aerial Map - Basic System: Points Between Which Intercity Passenger Trains Shall be Operated," source as I;


IV MAP 4: Route System, February 1, 1979 (before restructuring), from DOT (1979): Final Report to Congress on the AMTRAK Route System;

V MAP 5: DOT's Preliminary Recommended Route Structure, from DOT (1978): A Preliminary Report to Congress and the Public: A Reexamination of the AMTRAK Route Structure, (reprinted in US GAO, 1978c);

VI Extract from DOT (1979);

VII MAP 6: DOT's Final Recommended Route System, from DOT (1979);


I: DESIGNATED POINTS AND IDENTIFIED ROUTE OPTIONS

The following points are designated as the points between which intercity passenger trains shall be operated:

Boston - New York
New York - Washington
New York - Buffalo
New York - Chicago
New York - Kansas City via St. Louis
New York - Miami and Tampa/St. Petersburg
New York - New Orleans

Washington - Chicago
Washington - St. Louis

Norfolk/Newport News - Cincinnati

Detroit - Chicago

Chicago - St. Louis
Chicago - Cincinnati
Chicago - Miami and Tampa/St. Petersburg
Chicago - New Orleans
Chicago - Houston
Chicago - Seattle
Chicago - San Francisco/Oakland
Chicago - Los Angeles

New Orleans - Los Angeles

Seattle - San Diego

II: MAP 2  AERIAL MAP - BASIC SYSTEM

POINTS BETWEEN WHICH INTERCITY PASSENGER TRAINS SHALL BE OPERATED

from NRPC (1971): Nationwide Schedules
IV: MAP 4: ROUTE SYSTEM, FEBRUARY 1, 1979
(before restructuring)

from DOT (1979): Final Report to the Congress on the AMTRAK Route System.
V: MAP 5: THE DEPARTMENT'S RECOMMENDED ROUTE STRUCTURE

(preliminary)

NOTE: DOTTED LINES INDICATE EXISTENCE OF OPTIONAL ROUTINGS

from DOT (1978): A Preliminary Report to Congress and the Public: A Reexamination of the AMTRAK Route Structure (reprinted in GAO 1978c)
VI: THE RECOMMENDED ROUTE SYSTEM

... The recommended route structure serves 22 of the nation's 25 largest population centers, 39 of the largest 50 cities and 40 states. It provides a basic national service grid, with east/west routes in the northern, central and southern regions of the country and north/south routes along the Eastern Seaboard, in the Midwest and on the West Coast. The national service grid is supplemented by a system of short-distance trains linking major population centers and feeding passengers into the national service grid. All currently operating state-supported 403b services are included in the recommended route system, provided there is continued state support for them.

The recommended route structure contains 43 percent fewer route-miles than the current AMTRAK system (including the Southern Crescent) and during Fiscal Year 1980 it will produce 34 percent fewer train-miles than the current system would have produced in that year. However, the recommended system will retain approximately 80 percent of the passenger-miles that the current system would have produced in Fiscal Year 1980, and it will continue to serve 91 percent of the passengers who would have used the system during that year. The recommended system will also produce an improvement of 32 passenger-miles per train-mile compared to what the current system would have produced in Fiscal Year 1980, reflecting the elimination of the very weak routes and the restructuring of other routes.

<table>
<thead>
<tr>
<th>Current System</th>
<th>Recommended System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route-miles (Thousands)</td>
<td>27.5</td>
</tr>
<tr>
<td>Passengers (Millions)</td>
<td>19.6</td>
</tr>
<tr>
<td>Passenger-miles (Billions)</td>
<td>4.6</td>
</tr>
<tr>
<td>Train-miles (Thousands)</td>
<td>32.6</td>
</tr>
<tr>
<td>Passenger-miles per Train-mile</td>
<td>141</td>
</tr>
</tbody>
</table>

As of February 1, 1979. Includes the Southern Crescent in the AMTRAK system and excludes the portion of the Niagara Rainbow west of Niagara Falls, New York that is to be terminated on that date.

(Extracted from DOT, 1979)
VII: MAP 6

RECOMMENDED AMTRAK ROUTE SYSTEM

(final)

from DOT (1979): Final Report to Congress on the AMTRAK Route System

NOTES: Dashed lines indicate State assisted services. Capitalized city names indicate route end points and principal intermediate points. Other city names indicate points within routes at which some trains turn or diverge.
Amtrak's Nationwide Rail Passenger System
(after restructuring)

Service Scheduled To Start In 1980

from NRPC (1980) 1979 Annual Report
APPENDIX G

CRITERIA FOR EVALUATING ROUTES AND SERVICES

ECONOMIC CRITERIA

1. Financial contribution per revenue passenger mile
   - Current
   - Projected
2. Total financial contribution
   - Current
   - Projected
3. Financial impact on connecting parts of the system
4. Incremental capital investment requirements
5. Return on incremental capital investment

SOCIAL CRITERIA

1. Population served
2. Individuals currently using the route or service
3. Population deprived of or provided with rail service
4. Availability of alternate modes
5. Impact on personal safety

ENVIRONMENTAL CRITERIA

1. Change in energy consumed
2. Change in pollutants generated
3. Land freed for or removed from alternative use
APPROACH TO DEVELOPING ROUTE AND SERVICE CRITERIA

SOURCES REVIEWED

- ICC CONSIDERATIONS IN ROUTE AND SERVICE DECISIONS PRIOR TO 1970
  - Carrier economics
  - Public convenience and necessity

- ORIGINAL CHARTER: NRPC ACT OF 1970; DOT ROUTE CRITERIA
  - Cost to provide service
  - Capital requirements
  - Ridership demand
  - Integrated national system
  - Public's freedom of transportation choice

- CONGRESSIONAL MANDATE: AMTRAK ACT OF 1975
  - Impact on
    - Income
    - Investment
    - Demand
  - Impact on
    - Connecting parts
    - Population
    - Alternate Modes
  - Impact on environment

- AMTRAK'S MISSION AND STRATEGIC GOALS
  - Provide modern, safe service
  - Develop integrated National system
  - Operate "for profit"
  - Benefit the environment
  - Serve public convenience/necessity

ROUTE CRITERIA CATEGORIES

- ECONOMIC CRITERIA
  - Financial contribution per revenue passenger mile
  - Total financial contribution
  - Financial impact on connecting parts of the systems
  - Incremental capital investment requirement
  - Return on incremental investment

- SOCIAL CRITERIA
  - Population served
  - Individuals currently using route or service
  - Population deprived of or provided with rail service
  - Availability of alternate modes
  - Impact on personal safety

- ENVIRONMENTAL CRITERIA
  - Change in energy consumed
  - Change in pollutants generated
  - Land freed for or removed from alternative use
CRITERIA FOR DETERMINING ROUTES AND SERVICES

Using the approach described in the previous chapter, the Board has tried to define the criteria - i.e., the measures on which judgments or decisions should be based - that should be employed in determining intercity rail passenger routes and services. This chapter describes those criteria, which are summarized in Exhibit II.

As indicated previously, the criteria can be categorized generally as:

- **Economic** - measuring the impact of a route or service on Amtrak's current and projected financial status
- **Social** - measuring the impact of a route or service on the population offered Amtrak service and on actual ridership
- **Environmental** - measuring the impact of a route or service on energy consumption, air quality, and land use.

The sections that follow discuss several specific criteria within each category. Appendixes B, C, and D describe the methods for applying each criterion.

ECONOMIC CRITERIA

In evaluating changes to its routes and services, Amtrak must first assess the economic effects of such changes on its financial position. This evaluation must reflect both the current and projected financial performance of providing service over the route, as well as the capital investment required to maintain or upgrade service. The Board has selected five economic criteria that, taken together, provide the information required to rank Amtrak's routes financially. These criteria are:

1. **Financial Contribution per Revenue Passenger Mile (RPM)**, which is calculated by: (a) subtracting the direct costs associated with service over a given route* from the revenues attributable to traffic on the

   * - Direct (marginal) costs will be used in this calculation to avoid possible distortions that could be caused by an allocation formula.
route; and then (b) dividing the result by the number of revenue passenger miles contributed by the route. This criterion offers the Board critical guidance in route and service evaluations for two reasons. First, by taking into account both the ridership on a route and its financial contribution, it reflects both financial and social performance. And second, by indicating either the positive contribution generated or the amount of subsidy required per passenger mile, it provides a useful financial index for comparing routes—regardless of trip length.

2. **Total Financial Contribution**, which is calculated by subtracting the direct costs associated with service over a given route from the revenues attributable to traffic on the route. Since there is a limit to the amount of financial resources that the Federal Government can allocate to Amtrak services, it is important that the Board consider the total financial contribution made or the total financial subsidy required by each route or service.

3. **Financial Impact on Connecting Parts of the System**: For cases in which services are to be added or continued, this figure is calculated as the net contribution Amtrak would gain from passengers travelling to connecting parts of the Amtrak system; for discontinuance cases, it is calculated as the contribution that would be lost on other Amtrak routes. This criterion, by reflecting the integrated nature of Amtrak's system, will lead the Board to consider the financial impact of individual route and service decisions on the system, as well as on the route and service itself.

4. **Incremental Capital Investment Requirements**: For cases in which services are to be added or continued, this figure is calculated as the capital investment needed; for discontinuance cases, it is calculated as the capital investment Amtrak could avoid.

As with operating subsidies, Amtrak has only limited funds that it can expend for capital improvements. This criterion will provide the Board with a comparison of the levels of capital investment required

* - If comparison were made based only on total loss over the route, a long-haul train—because of the longer distance travelled—would not compare favorably with a short-haul train. The index of financial contribution per RPM eliminates the effect of trip distances, thereby permitting a comparison that is independent of distance.
for each route, thus playing an important role in guiding systemwide resource allocation in a fashion similar to the Total Financial Contribution criterion.

5. **Return on Incremental Investment**, which is calculated by determining the annual percentage rate of return that would be earned on the incremental capital investment on a route. Amtrak, like most corporations with substantial capital assets, must ensure that its limited capital is invested as effectively as possible; this responsibility is particularly important given the fact that Amtrak is supported significantly by public funds. By calculating a Return on Incremental Investment, the Board will have a measure by which to compare the financial attractiveness of investing capital in alternative routes and services.

In conducting its route evaluations, the Board will review each route in terms of the five criteria listed. And, based on a comparison of all the routes in the system, the Board will identify those routes or services that should be subjected to further evaluation, using the social and environmental criteria discussed below.

**SOCIAL CRITERIA**

The social criteria are intended to indicate the impact of each Amtrak route and service on the population Amtrak serves and on the riders who actually take advantage of these services. This set of criteria includes:

1. **Population Served**, which is defined as that population living within convenient access of the route. As a passenger carrier with a national mandate, Amtrak seeks to offer its services to as many people as possible. The Population Served criterion provides a measure of the size of Amtrak's market along each route, by indicating the number of persons who could take advantage of Amtrak's services if they chose to do so.

2. **Individuals Currently Using the Route**, which is a measure of the number of individuals who have utilized Amtrak's service along a route one or more times in a one year period. As the ICC established during its discontinuance proceedings, it is most important to consider the impact of change on the persons most affected by it - the people who actually use the train. The use of this criterion will indicate to the
Board the number of individual riders conveinenced or inconvenienced by the change. *

3. **Population Deprived of or Provided with Rail Service**, which is a measure of the number of persons within each route's service area who:
   (a) in the case of a route or service addition, would be provided access to service not previously available; or
   (b) in the case of discontinuance, would lose access to service previously available. Because some persons, particularly in remote rural areas, have access to only one Amtrak train, a discontinuance on the route serving these people would totally eliminate train service. And while economics may dictate such an action, the Board wants to clearly understand the degree of hardship that could be imposed by such a change before a decision is made. Thus, by determining the Population Deprived of or Provided with Rail Service, the Board could take special note of the number of persons who would find their choices concerning transportation modes either greatly enhanced or severely lessened by a route or service change.

4. **Availability of Alternate Modes**, which is an indicator of whether persons along a given route have other modes of transportation readily available. This criterion will also provide an indicator of the impact of service changes on traffic congestion. As one means of ascertaining the availability of alternative modes, Amtrak would assess whether its current or potential ridership could conveniently be accommodated by existing scheduled bus and airline services. In addition, Amtrak would ascertain whether limited access highways were available along the route. This criterion would suggest travel difficulty that passengers (or potential passengers) would encounter were rail service not available. Moreover, in cases where the alternative modes might need to add or delete capacity, this criterion indicates the need for a special study to assess the financial impact of Amtrak's action on these other passenger services.

5. **Impact on Personal Safety**, which is a measure of the probable increase or decrease in deaths and injuries that would result from a decision to eliminate or add rail passenger service in a given area. Typically, rail is the safest mode of passenger travel. Therefore, the Board wants to recognize explicitly Amtrak's potential contribution to the safety of the population being served.

* - The impact of RPMs - another important measure of ridership - will be reflected through application of the economic criteria (inasmuch as RPMs are the principal determinant of route or service revenue).
These five criteria will weigh most heavily in the Board's determination of the social value of a given route or service. However, the Board expects to consider, on occasion, other social factors - such as significant increases in the cost of an individual rider's transportation - that could have a bearing on route and service decisions. However, because such factors are likely to be important in few route or service cases, the Board has not established them as criteria to be applied routinely in making route and service evaluations.

ENVIRONMENTAL CRITERIA

Relative to other transportation modes, rail service is generally more environmentally effective - particularly in conserving energy and minimizing air pollution. To ensure the continued environmental benefits of rail service, the Board strongly believes that Amtrak should consider environmental impact in making its route and service decisions. The Board has selected three environmental criteria to guide its decision making on routes and services:

1. **Change in Energy Consumed**, which is an indicator of the increase or decrease in total energy consumed (by Amtrak or by alternate modes that would need to carry Amtrak passengers if rail service were not available) as a result of changes in routes and services. The national effort to reduce energy consumption has singled out transportation - particularly by automobile - as a key target for obtaining reductions, and rail service offers an attractive alternative to the automobile. Thus, the Board, in deciding on route and service additions and discontinuances will consider any changes in energy consumed to ensure that Amtrak continues to contribute to the achievement of the nation's energy conservation goals.

2. **Change in Pollutants Generated**, which is an indicator of the increase or decrease in pollution emissions (by Amtrak or alternate modes). The nation has embarked on programs to preserve the environment, as well as to reduce energy consumption. Use of this criterion will enable the Board to evaluate the contribution of each route or service change to achieving the nation's environmental goals.

3. **Land Freed for or Removed from Alternative Use**, which is an indicator of how much land would be affected by the route or service change. This criterion will ensure that the Board is cognizant of the alternative ways in which the land affected by its decisions would be used.
The 13 criteria described in this chapter will lead to comprehensive consideration of all factors important to route and service decisions. Moreover, these criteria are fully responsive to the congressional mandate specified in the Amtrak Act of 1975. It is important to recognize, however, that no one criterion will be sufficient in evaluating routes. Rather, the several criteria must be applied through a decision-making process that necessarily requires substantial exercise of judgment. This decision-making process is discussed in the next chapter.
APPENDIX H


I Corporate Goals;
II Emerging Corridors.
I Corporate Goals

Amtrak's corporate goals are founded on its governing legislation and upon other official communications between the Congress, Administration and the Corporation. These goals guide the capital and operating programs and set the overall theme of corporate activity. In fiscal year 1976, Amtrak refined the five goals expressed in the FY 76 - FY 80 plan and added several new goals that reflect the changing and expanding nature of Amtrak's overall charter. Consistent with Amtrak's decentralized operating concepts, the articulation of these goals and the programs to implement them have been developed by operating management based on submission from all Amtrak departments.

1) Provide modern, reliable, safe intercity rail passenger service as part of a balanced transportation system providing freedom of choice to the consumer and alleviation of congestion in other modes as outlined in Section 101 of the Rail Passenger Service Act. Planning and operational attention over the period will therefore be focused on improved equipment design, modernization, and safety; station and facility improvements that facilitate the comfortable and convenient handling of passengers and controlled maintenance-facility operations that insure reliable equipment performance from origin to destination. Individual passenger safety and security throughout the Amtrak system is part of this goal. Special emphasis will be given during the period to highway grade-crossing safety.

2) Develop and maintain an integrated, national rail passenger system serving the maximum population and providing for continuous trips between points on different routes through hub stations and connecting schedules. This goal includes a requirement for interregional services and implies intraregional service. It implies an obligation to connect the Amtrak system to other public transportation systems as part of a national intermodal system which is an alternative to the automobile. It envisages the implementation by the Amtrak board of the criteria and procedures for making route and service decisions in consideration of route additions or deletions. This goal mandates planning for route expansion and services to 403(b) and 403(c) markets upon the recommendation of the appropriate authority.

3) Operate efficiently on a "for profit" basis through employment of innovative marketing and operating concepts as directed in Section 301 of the Act. This goal recognizes Amtrak's responsibility to work towards financial viability consistent with its public obligation. This goal calls for planning and operations to be made so as to maximize ridership and revenues while minimizing operating costs and investment. It therefore requires that operations be designed to simultaneously increase utilization of equipment and manpower efficiency while better serving the market. Innovative marketing, scheduling, on-board and station services are continually being developed in response to this goal.
4) Reduce congestion, conserve energy and preserve the environment through the use of the unique advantages of the rail mode. This goal responds to stated national goals to which expanded rail passenger service can make a major contribution. Amtrak's objective is to optimize fuel efficiency through better use of locomotives, stripping the system of wasteful steam heat, and insuring that the next generation of trains represent a quantum improvement in fuel efficiency.

5) Serve the public convenience and necessity through providing schedules and services that are responsive to public need. This is a major goal inherent in the basic purpose of any public transportation service. Amtrak, because it is supported in the main by public funds, has a special responsibility to provide improved transportation service to that segment of the public that has limited transportation options and to areas of the country that do not always have other transportation modes readily available. Amtrak recognizes its obligation to provide convenient schedules and responsive services that address the requirements of consumers.

6) Faster development of emerging corridors. This goal is inferred from the other five. Amtrak has an obligation to significantly enhance the speed and frequency of service in areas where advanced rail service has inherent advantages over competing modes. Frequent high-speed service linking major population centers is under study and a separate planning annex on emerging corridors will be provided at a later date as a supplement to this current submission.

Two categories will be considered—present routes that could evolve into corridors by increasing existing multiple services, and routes that now either do not exist or do not have multiple service and where same-day return trips cannot be sold. Amtrak route criteria should govern the decision process. However, priority consideration will be given to routes with state participation in operating costs, track and crossing improvement and station upgrading.

7) Exploitation of other sources of revenue. In support of Goal 3, above, Amtrak will explore vigorously all other sources of revenue that are consistent with its charter—to include mail, express and intermodal operations.
II Emerging Corridors

Public demand for Amtrak services during the fuel shortages of 1974 indicated there is market potential for intercity rail transportation above present ridership levels. Passenger response to equipment, fare and service changes in the Northeast corridor and/or other routes, has similarly suggested that new passenger markets can be attained. Regional areas with sufficient concentrations of population and trip frequency may be prospects for corridor routes. Development of these emerging corridors could provide a modern, energy efficient, and environmentally safe alternative to air and highway travel between urban centers. The planning, design and implementation of corridor activities must consider the many interrelationships between market forces, functional requirements, departmental responsibilities, governmental processes and social benefits.

Development of the corridor environment is complex. The appendix to this section only provides a preliminary check list of functions and conceptual areas that will be considered in evaluating the emerging corridor system.
Potential corridors

Intercity rail operations in the Northeast corridor serve several different markets within the region and are tightly integrated into the region's economy and transportation system. Although the concentration of population and commerce in the Northeast is not duplicated elsewhere in the country, several regions appear to have the required population density and moderate intercity distances that allow for development of multiple rail services on certain route segments.

Some examples of potential corridors are:

Los Angeles-San Diego
New York-Buffalo
Chicago-Milwaukee
Pittsburgh-Detroit
Washington-Norfolk/Newport News
Springfield-New York
San Francisco-Sacramento
Chicago-Detroit/Cleveland
Los Angeles-San Francisco
Pittsburgh-Philadelphia
Chicago-St. Louis
Seattle-Portland

Preliminary consideration of travel patterns, competitive services, or probable investment requirements may eliminate some of these and spotlight relative strengths of others. The most promising prospects will be the subjects of a comprehensive research effort to determine the plans, commitments and procedures necessary to establish a viable corridor operation and develop it to the fullest extent possible.

Corridor markets

Understanding of markets is a prerequisite to proper design of an appropriate transportation service. Large resident populations may suggest a probable origin or destination for travel, but it is important to determine the dimensions of the actual intercity travel market. Given the multitude of travel purposes and the rather limited line or branched nature of possible rail routes, a rather specific travel market is defined, although regional development often follows patterns that concentrate population and travel along rail routes.
The relevant travel market, which should not be so narrowly defined as to exclude intermodal and multi-mode travel, should then be evaluated to identify the competitive alternatives (public and private), and to determine service aspects such as fare, schedule, travel time, and frequencies. Existing rail service on the route should be critically evaluated to determine competitive weaknesses, and identify desirable changes or supplements. Connectivity with the Amtrak national system is an important consideration, as regional routes can help and be helped by the major routes. However, the specific requirements of the local or regional market must be fully reflected in service plans if corridor development is to be successful.

**Long range development**

In analyzing potential corridor markets, separate perspectives must be used to consider the route prospects as an existing operation, after intermediate development, and after full development. Variations of existing operations might involve realignment of arrival and departure times, additional stops or equipment changes. Intermediate steps might include more frequent operation or improved travel time due to equipment performance, moderate right-of-way upgrading or terminal efficiencies. Full development would include extensive track, signal, and equipment upgrading for high-speed operation in the 100 mph range.

**Station facilities**

To serve the concentrated populations in a manner that will be competitively successful, the location of terminal facilities should be carefully planned to capitalize on central locations while avoiding delays due to congestion. The preferred location will maximize convenience of the majority of travelers, considering their local origins and destinations and their need for local transportation.

Quick access from local streets, roads, or interstate highways should be complemented by convenient and adequate parking. Full coordination with available or planned rapid transit, bus, taxi, limousine and auto-rental services will serve to more effectively link the terminal to the locality.

**Urban areas**

The location of terminals will also be an aspect of the local urban system, and, where the goals of travelers and local
planners are consistent, the station can be part of a scheme that develops the central urban area. Improved attractiveness of urban terminals and improved access from suburban residential communities will aid corridor growth. If existing station facilities prove not to be in a good location, presently unused land may be available as part of local renewal efforts.

In addition to achieving the best interface with local services, connectivity with other Amtrak routes and competitive modes may strengthen the utility and economic performance of corridor routes. Some proposals for station relocation may reflect non-transportation goals or be unacceptable for contractual or economic reasons. The market-research programs designed to consider individual origin-destinations, trip-purpose, and preferential factors will be a significant input to such analysis.

Terminal operations

Station design for corridor travel may involve modifications of the present standard as new ridership patterns emerge. Volume-oriented ticketing and other station procedures may be required to reduce station time while serving growing ridership. Increased frequencies or schedule requirements may suggest changes in maintenance and servicing procedures. As new facilities are considered, design advantages and economies should be seen in terms of the likely development of the route. Programmed equipment maintenance for maximum reliability and utilization should be related to the system programs and equipment cycles that are planned through all stages of the corridor route development.

Maintenance facilities

The design of maintenance facilities should also consider optimum proximity to stations and the need for good appearance. Some present operations approach this level, but the services for these routes have not been directly designed to reach the specific, quantified market potential. Manipulation of schedule times to meet the greatest demand, consideration of alternate intercity or terminal routes, or concentrated coordination with operating railroads might produce lower travel time or improve reliability. Larger capital investment would next be required for spot improvements or line upgrading programs to reach higher operating speeds. Grade crossing reductions and a signal modification may also be programmed as performance is improved to reach a level consistent with 80 mph to 125 mph running times.
Railroad operations

As the frequency of corridor operations increase, the presence of passenger trains will become a larger consideration for operating railroads. In some cases, the corridor may dominate the freight traffic or a given segment. Although separate routes may be a possibility in a small number of cases, passenger-service plans must consider full coordination to minimize conflict with local and through freight trains. Competitive and economic forces will cause future freight and passenger schedules to be more sensitive to delays or variation from planned operations. Properly planned improvements in track condition and capacity, grade crossings, and signal systems should benefit all parties. Improved performance reliability also permits more efficient utilization of equipment and crews in both passenger and freight operations.

Government relations

As corridor research, planning, and project implementation proceeds, Amtrak will be increasingly involved in a large number of other planning jurisdictions. Local governments, regional planning groups, transportation agencies, and state governments will all be concerned with our efforts. Consumer groups, commercial developers, and local business groups will have an interest, and environmental or other regulatory agencies must also be satisfied to the extent they become involved. Federal agencies and their programs will also have a direct effect on local planning efforts as well as on rail freight services and competing passenger modes.

Corridor programs must minimize conflicts with these other agencies and avoid pitfalls through continuing communication and negotiation. Contact with these elements, and awareness of the eventual plan, could minimize future problems if other planners are made aware of the possibilities and allow for our plan. This advanced coordination may also indicate opportunities for joint funding or other significant benefits to corridor development.

Federal Programs for right-of-way, safety, energy or environmental improvements are presently in effect and state programs have already supported train operations through 403(b) subsidy or promotional efforts. Corridor growth can continue or expand these relationships.
Corridor planning

In order to provide the optimal program for corridor development, it is apparent that comprehensive plans for most activities in the corporation and regional area would be desirable. The present five-year plan will provide a starting point for separate analyses of the system as it would be with a given corridor program in effect.
Appendix to Emerging Corridors

System Concept and Function Checklist

Corridor definition

Population
Distance
Travel

Corridor markets

Population/demand relationship
Socio/economic relationship of origin/destination pairs
Rail market share by origin/destination

Present
Potential

Corridor train operations

Existing service
Improved service

Intermediate development
Full development

Stations

Location in market
Accessability - roads
public transportation
parking
Construction, operation and maintenance

Urban areas

Contribution to urban improvement
Coordination with urban changes and desires

Connectivity

Intermodal interface

Urban
Suburban
Intercity

Amtrak national network
Facilities

Operation and changes
Passenger processing systems
Equipment servicing and maintenance routines
System cycle coordination
Active and passive security systems for passenger, station, maintenance facility, equipment and train operation protection
Environmental acceptability of maintenance and station areas

Right-of way

Defined service levels in phases
Incremental projects prioritized on
  Alignment
  Capacity
  Rail, ties and ballest
  Train control systems and dispatching
  Communications
  Grade crossings
  Fencing

Coordination with railroad plans

Railroad operations

Minimization of passenger/freight conflict
Improvements to aid both
Efficiencies through precision and reliability

Government relations

Overlay of other planning jurisdictions
  Local, regional, state (transportation and other)
  Consumer, commercial, business groups
  Environmental and regulatory agencies
  Federal agencies

Communication and negotiation
Joint funding or non-duplication
Corridor planning

Directs research to determine potential
Evaluates alternative prospects
Sets general goals
Determines required actions
Programs phases and checkpoints
Sets increment priorities
Monitors implementation of projects
Assures completion of phased system
Evaluates performance at incremental and phase levels
Adjusts plans and programs per experience
Begins next phase

Overall:

coordinates department goals
estimates critical paths to goal
reviews and evaluates program progress
considers these aspects in terms of
the emerging corridor route system and
the Amtrak network system
APPENDIX I

APPENDIX I contains the questionnaire which formed the basis of most of the interview sessions held. Although, in no one case, were all the questions asked, it formed a good framework for discussion, and enabled comparison between respondents' replies.
1. To whom is AMTRAK responsible?
2. What factors led to the Federal Government's conception of AMTRAK? Would you say they were all rational?
3. Have any particular constituencies been important in shaping the Federal image?
4. How well-defined is the Federal conception of AMTRAK? Is it rigid? To what extent does it allow for changes in values? What changes, if any, would you like to see in the nature of this conception?
5. Why are AMTRAK routes away from the Northeast so long?
6. Is AMTRAK seen to have a national rather than a regional function, or vice-versa? How does this affect the nature of AMTRAK's network?
7. How is the Federal Government involved in route selection? Does it aim to set out the type of routes that are to be serviced, and leave specific selection to management, or does it go further in specific selection?
8. What influence do states and regions have in determining formulation of the network?
9. Is there varying pressure amongst states for service, and what are the results of this?
10. Is the AMTRAK network seen as an integrated whole greater than the sum of its parts and if so, how might this affect selection of a route that might be isolated from the rest of the network?
11. Would you say that national and regional visions of the ideal AMTRAK may be different? Does this lead to a conflict? If there is a conflict, and management has to make a choice between a "national" role or a "regional" role in selecting a route, what factors will be influential in its resolution?
12. Given two states, one of whose Federal representatives are sympathetic to AMTRAK, and one of whose Federal representatives are not, will this affect decision-making on route choice in any way?
13. The 82nd Annual Report of the ICC, 1968, stated that: "Without immediate action on the part of the Federal Government, significant segments of the country will soon face the loss of their last remaining rail {passenger} service." Why is this bad of itself? Is it more important that all states have some service than that opportunities are maximised where service is most viable?
14. Could AMTRAK take the position of discontinuing many "national"-type routes in favor of "regional"-type routes which might not necessarily come together to form an "integrated" system? What would be the political and other consequences?
15. The Commission wrote in its 82nd Report that AMTRAK must be a system and not just "a few trunklines. As Congress has envisioned it (Sec. 101), the system must link together the various regions, providing service between the crowded urban areas and in other areas of the country, so that the traveler in America will in fact be able to choose rail when most convenient to his needs. Short of
that, the entire Federal expenditure could turn out to be a waste." Is the concept of linking together "the various regions" central to the AMTRAK brief? Has it meant that analysis for route choice has been restricted to operating within this concept?

16 How does AMTRAK evaluate its competitive position in the various markets? What are the potentially competitive markets of AMTRAK, and is this a valid concept given their definition? Has it slowed down development of "regional" services?

17 What in fact are the main criteria for route selection employed within AMTRAK?

18 Why has AMTRAK been slow to develop short - medium distance "corridors" away from the Northeast? When, even in Chicago to Los Angeles, with the highest percentage of end-to-end traffic, only 15% of passengers are through, is there not a case for concentrating on the city pairs between which most people travel, some of which may now be receiving inconveniently-timed service because they are viewed as being on part of a longer service?

19 Once a route is selected, what are the main criteria for scheduling service over it?

20 How are fares set for AMTRAK service? Why has AMTRAK not developed the same range of fares as are available on airlines? Given that the majority of travellers on long-hauls are "novelty" riders, fare sensitive, and responsible for few return trips, has AMTRAK considered premium-priced high-speed service for potentially intense corridors away from the Northeast which could potentially capture a regular ridership?

21 Is there really a case for subsidising tourists taking a "train-cruise?" Why was it a wiser decision to purchase the recent "Superliners" than to spend the money on modern short-distance equipment, or to improve the tracks in short-haul markets?

22 To what extent is schedule planning done in a "national" frame, and to what extent is there a "regional element of influence?"

23 What roles do state transportation departments have in scheduling? How can this be put into practice on long routes crossing several states?

24 How important is the prediction of "demand" in evaluation? Is demand predicted with reference to any defined functional roles of AMTRAK eg. national vs. regional?

25 What is the role of weighing up the economic benefits and costs of providing any particular service? Is this analysis carried out within the context of a "national" frame - i.e. would you only evaluate the possibility of a route through two regional sub-centers were it to be part of a "national" inter-regional service? Would you only evaluate scheduling within this context? How "rational" is your analysis? How different is it from that which might be done by a private corporation?
Once an analysis is done, and a decision made to provide a particular route with a particular level of service, how is feedback from patronage and performance of that service used to improve or alter it? Once a basic service is provided, say on an experimental basis, are changes to it restricted to the assumption of the initial role of the service?

Suppose you were to operate a daily train from Boston to Chicago which had low patronage, how would you know if there was potential for greater patronage between stations Boston to Albany? Would such analysis be part of an evaluation of the present service, and how it might be developed/altered?

How important is consultation with state and local governments? With potential users? Does AMTRAK go out to the regions and seek to consult all interested parties?

Does AMTRAK have regional offices, or is all planning done centrally? Are there particular managers with responsibilities for the various regions? Is planning for each region done separately, or within a national frame? What effect do you suppose this has on route selection and level of service on routes?

What is the impact of AMTRAK being funded out of general revenues rather than through the states? How do you think the decision-making process, and its products, would alter were funding, while being maintained at present and projected levels, to be predominantly channeled through the states?

Does the present method of funding effectively transfer decision-making to the Federal Government? Would AMTRAK management be happier were AMTRAK to be funded in some other way?

Bus companies have a far more decentralised pattern of operation. There are two large organisations, Greyhound and Trailways, but there are also a myriad of others providing short to medium distance service which is regulated by states and planned locally to meet local needs. AMTRAK only has one tier, however, a national tier. Do you feel that, given this structure, the bus is in a better position from an organisational vantage to provide regional service? Do you think AMTRAK could or should move towards a more decentralised structure, possibly as a series of state-level organisations?

If we can turn now to the Boston – Buffalo section of route as case-study, can I ask why there is only one train a day on the line Boston – Springfield – Albany – Buffalo? Is one train a day adequate for AMTRAK market identification except for novelty riders?

Is the daily train supposed to provide local service, or be part of an inter-regional service? Will passengers use service locally when there is but one train a day?

How was "demand" for this service ascertained? Were there any studies of potential for local service, or was such investigation restricted to a longer-distance frame?

Has the public living in the vicinity of the line been consulted about the possibility of local service? Is market-research oriented towards evaluation of short-distance markets at all? I gather that
a study is now being conducted by consultants for the F.R.A. on the possibility of a Boston - Springfield - Hartford service. Why has it taken so many years to come round to doing such a study? Why is AMTRAK not conducting such a study itself?

37 Given that there is more intensive bus service between Boston and Albany than through from Boston to Chicago, why does train service follow a different pattern?

38 Why was the 12 mile section of track between Boston and Albany recently relaid singled out for improvement? Does this make a significant difference to long-haul as against shorter-haul travel?

39 According to your evaluation, how does short-haul demand on this route compare to long-haul demand? Do you feel that this evaluation is reliable? Do you feel that a local rail service between Boston and Albany could be competitive were it to be built up?

40 Do the states of Massachusetts and New York have different attitudes towards rail passenger service? How may this have affected provision of service between Boston and Albany as against Albany and Buffalo?

41 Would you say that in a case such as service between Boston and Albany/Buffalo national criteria are different from regional criteria? How is it decided which are to have preference?

42 From where would protest come were the longer AMTRAK routes to be cut and operated as a number of discrete shorter-distance routes? Where would support come from for such a manoeuvre?

43 How is the need to operate as a "profit-oriented" organisation put into practice in decision making? Just how realistic is "AMTRAK as a corporation?" What are the similarities and differences between AMTRAK and a private corporation?

44 Does the AMTRAK management structure resemble more closely a corporation or a government department? How are responsibilities for decision making distributed among the various departments? Are the different departments run centrally, or on a more autonomous, for example profit center basis?

45 A corporation is designed so that signals of profit indicate success, and the direction to follow. Can AMTRAK thus be called a corporation at all?

46 Do you suppose that because of the Federally-defined role of AMTRAK, management may look for signals that are not there, and thereby distort their decision making? How is conflict resolved between the different departments of AMTRAK in the absence of well-defined signals?

47 How is the performance of the different management units measured? How are individual members of management evaluated? In the absence of clearly-defined signals, how do individual managers evaluate their own success? How do they set themselves objectives?

48 Just how is risk defined in AMTRAK, and are there in fact therefore a different set of relevant signals? Are they used? How?

49 Does the role of AMTRAK seen by many managers differ from that of the Federal definition? How does this affect decision making?
Do you think that some alternative organisation structure might provide better decision making in fulfilment of the AMTRAK brief? Do you feel that AMTRAK's present brief and set-up makes for sub-optimal management decision making?

Do you feel that the amount of Federal involvement in restricting the scope of choice makes for a less viable system in both economic and social terms than might otherwise be possible?

Is AMTRAK involved in the development of Federal goals and objectives? How? The Federal Executive Branch may carry out a study of a particular route possibility, for example, separately from AMTRAK - as in the case of the Boston - Springfield - Hartford line. Is this healthy? Is there good co-ordination between studies that might be conducted by F.R.A. or other government units, and AMTRAK? Would it not be better were AMTRAK altogether a government department, rather than a corporation?

Given that AMTRAK is to be a corporation, do you think that more freedom for AMTRAK to make decisions might result in better decisions?

Instead of "subsidising" AMTRAK, do you think that the Federal Government might "pay" AMTRAK to operate loss-making service, but allow complete discretion in how this is done?

The ICC has published a series of annual reports to evaluate the effectiveness of the 1970 AMTRAK Act. They have evaluated in terms of the Federal mandate. Do you feel that, in doing so, they are ignoring other goals and objectives, and are thus failing to provide the prod to move towards them? How do you think the framework within which AMTRAK operates should be changes to provide for better decision making?
There follows a listing of the individuals who were interviewed for this study over the summer of 1980. Most interviews were conducted in person in the offices of the people concerned, and were tape-recorded for later transcription. Four were held by telephone, as indicated. Four names have been withheld upon request.

Immeasurable thanks are due to everyone involved.
National Railroad Passenger Corporation - AMTRAK

1 John Baesch, Operations Manager;
2 William Gallagher, Senior Director, Route & Service Planning;
3 Tom Gillespie, Congressional Affairs Officer;
4 Howard Henry, Director, Market Planning & Forecasting;
5 Bruce Horowitz, Senior SPEC., Planning;
6 Wilfred Leatherwood, Manager, State & Local Services, Government Affairs;
7 L. Fletcher Prouty, Senior Director, Public Affairs;
8 Ira Silverman, Director of Marketing;
9 William Thornton, Manager, Corporate Employment;

United States Department of Transportation
- Office of the Secretary
10 Charles Swinburn, Deputy Assistant Secretary for Policy;
- Federal Railroad Administration
11 Mr. X.;
12 Mr. Y.;

United States Congress
- Member
13 Representative James J. Florio (D, New Jersey), Chairman, Subcommittee on Commerce, Transportation and Tourism of the House Committee on Energy and Commerce;
- Committee staff
14 Mr. A, House Committee on Appropriations;
15 Mr. B, House Committee on Energy and Commerce;
16 Paul Molloy, Minority Counsel, House Committee on Energy and Commerce;
17 Deborah Swartz, Special Assistant to Sub-committee on Commerce, Transportation and Tourism of the House Committee on Energy and Commerce;
- Assistants to Members
19 Barbara Beatty, Legislative Assistant to Representative John H. Rousseltot (R, California);
20 Alan Ciamporcero, Legislative Assistant to Representative Lionel Van Deerlin (D, California);
21 Amy Dunbar, Legislative Aide to Senator Paul E. Tsongas (D, Massachusetts);
22 Mark Dunn, Legislative Counsel to Representative John Murphy (D, New York);
23 Michael Gessel, Legislative Assistant to Representative Robert T. Matsui (D, California);
24 Charles Hilty, Administrative Assistant to Representative Edward R. Madigan (R, Illinois);
25 John Hoyt, Administrative Assistant to Representative Samuel L. Devine (R, Ohio);
26 Joseph LaSala, Legislative Assistant to Representative Thomas M. Hagedorn (IR, Minnesota);
27 Randy Mills, Press Secretary and Legislative Aide to Representative Pat Williams (D, Montana);
28 Roy Neel, Chief Legislative Assistant to Representative Albert Gore (D, Tennessee);
29 John Robbins, Legislative Assistant to Representative Ronald E. Paul (R, Texas);
30 Larry Sabbath, Legislative Assistant to Representative James D. Santini (D, Nevada);
31 Stuart Serkin, Legislative Assistant to Representative Edward J. Stack (D, Florida);

United States Interstate Commerce Commission

32 Lawrence Lesser, Public Information Officer;

United States General Accounting Office

33 Victor Scoba, Auditor;
34 Clarence Siegler, Supervisor Auditor;

State Organisations

- American Association of State Highway and Transportation Officials

35 William T. Druhan, Secretary, National Conference of State Rail Officials;

- State of California

36 John Ingram, Federal Representative, California Department of Transportation (Caltrans);

- Commonwealth of Massachusetts

37 Paul McBride, Assistant Secretary, State Executive Office of Transportation & Construction, with responsibility for railroads;
38 Representative Louis Nickanello, Chairman, Committee on Transportation, Massachusetts House;
39 William Toomey, Aide to Representative Nickanello;

- New York State

40 Peter Derrick, Director of Policy Studies, Legislative Commission on Critical Transportation Choices;
41 John Lussi, Director, Rail Planning & Marketing Bureau, state Department of Transportation;
42 Gordy Peters, Chief of Rail Marketing, state Department of Transportation;
43 Louis Rossi, Director, Rail Division, state Department of Transportation;
   - State of Ohio
44 Mark Randell, Ohio Rail Transportation Authority (telephone interview);
   - State of Wisconsin
45 Doug Haist, Administrator, Wisconsin Department of Transportation
   (telephone interview);
Bus Companies & Organisations
   - American Bus Association
46 Harold Morgan, Manager of Revenue Economics;
   - Greyhound Lines
47 Charles Loman, Assistant to regional Vice-President, New York
   (telephone interview);
48 E. W. Simmons, Director of Transportation, Phoenix;
   - Continental Trailways
49 Ted Knappen, Senior Vice-President;
   - Peter Pan Bus Lines
50 Don Myers, Vice-President, Operations;
51 Walter Scrobot, Vice-President and Comptroller;
Airline - US Air
52 Robert Dunn, Director of Economic Research;
53 Jerry Phesora, Manager, Current Schedules;
54 John Scalea, Manager, Schedule Information Systems;
National Association of Railroad Passengers
55 Ross Capon, Executive Director;
   Ex-President of AMTRAK
56 Paul Reistrup (now with R. L. Banks & Co.).
REFERENCES

Allison, Graham T. (1971), Essence of Decision: Explaining the Cuban Missile Crisis, Boston, MA: Little Brown and Company;


Baldwin, Deborah (1979), "AMTRAK: The Wreck We Have To Fix," in The Washington Monthly, May;


Boyd, Alan S. (1980), Remarks at the Wharton Transportation Club, University of Pennsylvania, Philadelphia, PA, February 6 (available in reprint form from AMTRAK);


Bullard, Clark W., Penner, Peter and Pilati (1976), Energy Analysis Handbook, Energy Research Group, University of Illinois, Urbana-Champaign, IL;

Casey, Robert J. (1980), America Needs a Rational Transportation Policy (The Ohio Plan), Columbus, OH: Ohio Rail Transportation Authority;


Cobb, Roger W. and Elder, Charles D. (1972), Participation in American Politics: the Dynamics of Agenda-Building, Boston, MA: Allyn and Bacon;

Dalton, Dalton, Newport (1980), Ohio High Speed Intercity Rail Passenger Program, prepared for Ohio Rail Transportation Authority, July;


Harris, Louis and Associates, Inc. (1978), *The Continuing Public Mandate to Improve Inter-City Rail Passenger Travel, Final Report*, prepared for AMTRAK, March;


Interstate Commerce Commission (1978b), Evaluation Report of the Secretary of Transportation's Preliminary Recommendations on AMTRAK's Route Structure: Report of the Rail Services Planning Office to the Secretary of Transportation;


Kaufman, Herbert (1971), The Limits of Organizational Change, Birmingham, AL: University of Alabama Press;


Kizzia, Tom (1980), "States Rediscover the Passenger Train," in Railway Age, Vol. 181, No. 7, April, 14, p.36-40;


Michaels, Richard M. Transportation Consultants (1972), Railroad Passenger Service, Analysis of Train Scheduling and Operations, prepared for the General Accounting Office as part of its review of the operation of the National Railroad Passenger Corporation;


National Railroad Passenger Corporation (1971), Nationwide Schedules, effective July 12;

National Railroad Passenger Corporation (1975), The Criteria and Procedures for Making Route and Service Decisions, October 29;

National Railroad Passenger Corporation (1976), Five Year Corporate Plan FY 1977 - 1981, September 28;


National Railroad Passenger Corporation (1981), National Train Timetables, effective April 26;


US Congress (1979a), *Hearings before the House sub-committee on the Department of Transportation and related agencies Appropriations of the Committee on Appropriations*, February;

US Congress (1979b), *Hearings before the House sub-committee on Transportation and Commerce of the Committee on Interstate and Foreign Commerce*, April;

US Congress (1979c), Report No. 96-183 to accompany S.712 AMTRAK Improvement Act of 1979 from the Senate Committee on Commerce, Science and Transportation, May 15;


US Congressional Budget Office, Natural Resources and Commerce Division (1979), *The Current and Future Savings of Energy Attributable to AMTRAK: A Staff Draft Analysis*, May;
US Department of Transportation (1971), Final Report on Basic National Rail System, submitted by John A. Volpe, Secretary of Transportation in accordance with PL 91-518, Jan 28;

US Department of Transportation (1978), A Preliminary Report to Congress and the Public: A Reexamination of the AMTRAK Route Structure, May;

US Department of Transportation (1979), Final Report to Congress on the AMTRAK Route System as Required by the AMTRAK Improvement Act of 1978;

US Department of Transportation, Federal Railroad Administration, and National Railroad Passenger Corporation (1980), Rail Passenger Corridors: Analysis of Potential Improvements, February;

United States General Accounting Office (1978a), An Analysis of AMTRAK's 5 year Plan, PAD-78-51, March 6;

US General Accounting Office (1978b), Should AMTRAK Develop High-Speed Corridor Service Outside the Northeast? CED-78-67, April 5;

US General Accounting Office (1978c), Should AMTRAK's Highly Unprofitable Routes be Discontinued? CED-79-3, November 27;

US News and World Report (1972), "Is There Really a Future for Passenger Trains?" Interview with Roger Lewis, President of AMTRAK," Vol. LXXII, No. 9, February 28;

Vranich, Joseph (1980), "Bullet Trains for the Buckeye State?" in Passenger Train Journal, August;


Wilson, James Q. (1973), Political Organizations, New York, NY: Basic Books;

Winestone, Robert L. (1979), Staff Papers: Ten Years of Train-Air Data in the New York to Washington Market, US Department of Transportation, Federal Railroad Administration, Rail Passenger Program Division, May;

Wisconsin State Department of Transportation (1975), Wisconsin State Rail Plan: The Future of Wisconsin Rail Passenger Service, Madison, WI;

Jonathan Richmond is a British citizen from the town of Richmond, Surrey, in England.

Educated first at St. Paul's School, he entered the London School of Economics in 1976 to read for the B.sc. (Econ.) degree with Special Subject Geography. While there he was, for two years, editor of the journal *HORIZON*, a publication of the King's College, London, and the London School of Economics Geographical Association.

He came to MIT in 1979, supported by a Fulbright Scholarship, to undertake studies leading to the degree of Master of Science in Transportation, and is completing doctoral work at the Graduate School of Public Policy of the University of California, Berkeley.

His main spare-time pursuit is journalism, and he has contributed extensively to the student press in Britain and at MIT as classical music - especially opera - commentator and critic.

His career objective is to be a professional trouble maker. In this field, many would say that he has already shown distinction.